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HALIFAX, 1st June, 1875.

THE Secretary of the Central Board of Agriculture leaves by the Steamer to-day for England. During his absence, any information connected with the Board, or its operations, may be obtained on applying to Members of the Board in the respective Districts.

The Address of the Secretary for the next three months will be: *Professor Lawson, Newport, near Dundee, Scotland.*

THE fine clump of *EUCHARIS AMAZONICA* in the Conservatory of the Hon. Provincial Secretary at Oakland, which was noticed some time ago, is sending up another crop of its magnificent blossoms. It is obvious that this plant flowers very freely when properly managed. The following extracts, culled from various numbers of *The Garden*, (an excellent English periodical lent to us by Mr. Jack), may be useful to those of our readers who wish to see the nodding bells of *Eucharis* in their conservatories:

"So rapidly has this noble stove plant grown in the estimation of the plant-growing public, that it is already almost as indispensable to the stove collection as the lily of the valley and the white camellia to the bouquet-maker. Indeed, the *Eucharis* bids fair to rival either of these, even with the Covent Garden people, and it is very extensively used among cut flowers. For room, stove, and, in the summer, conservatory decoration, it is equally valuable. To this we have to add that the best plants of it ever shown

were grown by Mr. Howard, gardener at Bedford Hill, Balham, and that his success resulted from heavy waterings occasionally with mild liquid manure, a genial stove temperature, and repeatedly syringing them when in a state of growth. It is another illustration of the fact that cultivators generally have a poor idea of the true requirements of plants as regards moisture at the root when in a growing state. The splendid specimens we allude to, like other things grown by the same skilful cultivator, were not, when in want of water, simply watered once, but the first was considered merely a preliminary dose, and two others given. The fact is that, instead of the common statement, made so repeatedly in the gardening journals, that most plants perish from over watering, being true, the opposite is the case. Most pot plants that die perish from insufficient watering. Let it not be inferred from this that we recommend frequent waterings, one thorough one will save a dozen dribblings such as gardeners too often give, and therefore save time, and be far more effective and wholesome for the plants."

"I have grown this plant for four or five years, but have not been able to flower it. Can you or any of your readers help me?—*Amateur*. [Mr. Howard, of Balham, replies as follows: The *Eucharis Amazonica* should be placed in a stove or warm frame, well exposed to the light. An ordinary warm dung frame will do. Let the temperature be from eighty-five to ninety-five degrees, giving little air, and syringing the plant well early in the morning, and at 2 p. m., when the air should be taken off, no matter how hot the sun is. Under such conditions the plant will throw up flower spikes in ten days if in a healthy state."

"This is one of the most valuable of winter flowering plants, not that it usually flowers during the dull season of the year, but it is one of those accommodating plants that may be forced into flower at any time by the use of bottom heat and a little judgment. Some ten or twelve plants potted and placed in a tan bed a month ago, are now throwing up flower spikes. Their great waxy blooms are well nigh invaluable for bouquets, floral decorations, or for ladies' hair. For the last mentioned purpose they stand unrivalled, *Phalenopsis* blooms even not excepted."

It may be well to explain that the *Eucharis*, like all other plants, must have its period of rest after blooming, and that then the copious waterings, syringing and bottom heat have to be carefully avoided.

THE *Amherst Gazette* quotes a few HORSE ITEMS that may well bear repetition:

A writer in the "Spirit of the Times" claims for Geo. M. Patchen, the sire of Godfrey's Patchen, the credit of having made the fastest two mile time in harness ever made, except Flora Temple's. She made it in 4.50½ and Patchen made it in 4.51½.

J. R. Keene, of California, has sold to C. W. Kellogg, the San Francisco millionaire, the trotting stallion Sam Furdy, for \$50,000. This is the highest figure ever paid for a trotting stallion.

At the meeting of the Pacific Jockey Club, San Francisco, in November next, a purse of \$30,000 in gold will be offered for a four-mile and repeat race, open to the world; \$15,000 to the first horse,

\$6,000 to the second, \$5,000 to the third, and \$4,000 to the fourth. Horses from Europe will be allowed \$1,500 for travelling expenses, and from east of the Rocky Mountains \$1,000.

Mr. O. A. Hickok has challenged Occident to trot against Judge Fullerton, over Dexter Park in Chicago, or over either Fleetwood or Prospect Park in New York, two races for \$5,000 or \$10,000 a side, the races to be mile heats, three in five, to waggon, and to be trotted between the 1st and 15th of June. Half forfeit on each race.

A Camden, (N. J.) house, has built a sulkey weighing 48 pounds, ordered by Budd Doble, for the California wonder, Occident; a sulkey weighing 54 pounds for A. C. Hickok, for the trotting horse Sam Purdy; a sulkey weighing 48 pounds, for Goldsmith Maid; and a sulkey weighing 50 pounds, for the bay mare Nettie.

Messrs. John and Howard Smith, Fort Lawrence, bought at auction from Mr. Chris. Delesdernier, last week, a fine pair of yearling steers for which they paid \$101.—*Amherst Gazette.*

WE had the pleasure, the other day, of examining a choice selection of Hardy Ferns in the Greenhouse of Ex-Alderman Barron. They came out to him in the *Caspian*, and, they are, with very few exceptions, the first plants of their several kinds that have been imported into the Province. We must defer any critical remarks upon them until their fronds, only now beginning to start, have acquired their full growth. But some of our readers are botanists and may, naturally, like to hear what the novelties are like. We may therefore notice, in anticipation, some of the more interesting ones. There are "Fashions" in Ferns as in everything else in England. Mr. Barron has succeeded in obtaining the most fashionable sorts. Of the Lady Fern he has got that magnificent variety called by botanists *Victorie*, which in grace and beauty is not excelled in the vegetable kingdom. Then he has the fern for a cottage on a Cambrian wild, *Polypodium Cambricum*, which is one of the most elegant plants that can be hung up in a greenhouse in an oyster shell. Likewise there is the remarkable Walking Fern. It does not profess to walk as fast as Weston or O'Leary, but sends out shoots like the strawberry, and thus monopolises the ground wherever it grows. It is American in origin and may seem to be actuated by a faith in the manifest destiny. *Asplenium marinum* is a bright and dark coloured fern that lines the caves on the east coast of Scotland with a brilliant verdure. Mr. Barron's plant is the strongest of the kind we have ever seen. *Asplenium*

fontanum is an English fern by tradition only. Its home is on the Swiss Alps, and it is just possible that tourists may have rooted it out there. It is a very small species, and the neatest of all the ferns. Of the Hart's Tongue fern (*Scolopendrium vulgare*) Mr. Barron has obtained several varieties. There is first the fastigiated or stag-horn form, then several others, but the greatest beauty of all is the plaited or gophered sort, whose particular name we do not exactly know, with ribbon-like fronds gophered on the margin as regularly and neatly as a new-style lady's collar. But the great feature of the collection is the number of tassellated and other ornamental varieties of *Lastrea filix-mas*, *Lastrea angulare*, *Athyrium filix-femina*, &c., which have originated in England during the recent fashionable Fern Mania, and which our excellent friend Mr. Barron has introduced to Nova Scotia. We must visit these ferns again after they have expanded their fronds, and tell our readers more particularly what they are like.

THE best reply we can make to the following is to print it. We have had numerous applications for Bulls this spring, but cannot find many really desirable animals for sale:

"We wish to purchase a Bull for the coming season. We decided to have a 2 year old or 3 year Ayrshire—good size—dark red colour, or as near as possible. We want a good one, for two reasons—1st. Our stock is reduced to almost *minus* nothing; 2nd. Good animals will tend to strengthen our society. Could you inform us where we could get one of that stamp, or where we can get the information. If you could it would save us expense and trouble, as we have no idea of the whereabouts of any. We are willing to pay a good price for a good animal, rather than a low price for a poor one. I remain, &c., JOHN M. BAILLIE, Ross-ville W. O., Earltown."

WITHIN the last ten years very great improvement has taken place in some branches of Rural Economy in this Province. Increased attention has been given to the rearing of live stock,—so much so, indeed, that in various Counties we now meet with whole "Herds" of thoroughbred Short Horn, Devon, and Ayrshire Cattle, whose births and pedigrees are individually recorded as carefully as if the bovine Dukes and Duchesses were prospective heirs to broad acres, and inheritors of veritable titles of nobility. In like manner, an immense impetus has been given to the Dairy department by the establishment of Cheese Factories, both in the Western and Eastern Counties, and in Cape Breton. Extensive orchards have

been established in localities where they were unknown before. In and about Halifax and other towns, Conservatories and Vineries have been reared, Garden Culture has been greatly advanced, and many Nurseries, for the supply of trees and plants, have been established. It is certain that in some districts the cultivation of Root Crops has been extended. The means of harvesting the Hay Crop have been improved by the general introduction of Horse Mowers, Horse Rakes, Tedders, and other labour-saving machines. And, whilst we survey these substantial evidences of advancement, whilst we complacently say to ourselves, In these ten years we have greatly enhanced the value of our Cattle, we have transferred, perhaps, one-third of the hardest labour of the farm from our own shoulders to the proper beast of burden, we have established a Dairy system that relieves our households of drudgery, and brings a handsome annual return, we have formed orchards that now fill our cellars with the most beautiful fruit,—in the midst of these contemplations the feeling naturally arises that, if these are the advantages secured within the last decade, how much more shall we be able to accomplish in the ten years to come, should peace and prosperity be vouchsafed to our Province.

The improvement of live Stock, the use of Machinery, Fruit Culture, Cheese manufacture, these have already taken such a hold that their continued success and progressive development may be looked upon as almost secure. But, with all this accomplished, there is still a terrible defect in our Agriculture, a defect that exists all over the Continent of North America, and which it is, hence, very difficult for our native farmers to thoroughly understand. If our farmers will only seriously set before them the removal of that defect as the work of the next ten years, we can promise that the improvement will be more conspicuous than all others together that have ever been made in Nova Scotia, that it will tend more to elevate the farmer, to increase his comfort and wealth, to cheapen the food of the people, to encourage the rise of other industries, and to promote the development of our country's resources in general, than anything else whatever that can be devised or reasonably hoped for.

The defect we refer to is the want of any proper system of ROTATION OF CROPS. We know that, on individual farms, a methodical system is followed, the result often of much observation and thought and experiment. and in such cases he would be a bold man, and inconsiderate withal, who would undertake to suggest improvement. But, taking farms generally over the Province, it is obvious that no definite system of rotation is pursued, except what may, out of courtesy, be

called: The one Course System with accidental variations.

Attention has been so continually called to the subject of Rotation of Crops that nothing now remains to be said that has not been said before. Moreover, simple as it may seem, we have found it so extremely difficult to explain what is really meant by "Rotation of Crops," to those who have not resided in countries where it prevails, that we do not wonder that a deaf ear has been so often turned to the subject. It is a subject that, in fact, requires to be viewed in all its aspects, and in connection with the changes of the whole management of a farm which it involves, before even an imperfect notion of what it means can be attained. Rotation of Crops involves High Cultivation, a heavy outlay of capital for Machinery and Stock, a large expenditure for artificial manure and feeding stuffs, and for labour. It also involves very large returns in the forms of roots, grain, fatted cattle, wethers, lambs, wool, pork, with, perhaps, butter and cheese. We shall not go into the financial details at present, but merely remark that the calculations can be made with the greatest nicety beforehand, and that a careful, judicious man, who keeps within the bounds of his capital, is in no danger of disaster.

The object of Rotation of Crops, and of the High Cultivation which its carrying out involves, is to realize from the soil the greatest profitable return with the least possible expenditure by which that greatest return can be obtained. This is accomplished by a systematic method of cultivation, the purpose of which is so to manure and cultivate and treat every crop as not only to maintain the soil in a state of constant fertility, but to have it always in the very best possible condition for the crop which is to follow. The Rotation that suits one farm will not suit another, and the Rotation that may be adopted on a worn-out farm at the outset may soon have to be changed for one, which, as the land improves, will give more speedy returns in money.

Although it is now some years since we prepared the following notes of a discussion on this subject in England, they have lost none of their value, and we therefore commend them to the notice of our readers, on the understanding that we shall return to the subject at a future time with the view of presenting a workable elastic scheme, adapted to the various circumstances of our Nova Scotian farmers. It will be seen that each will have to adopt his own Rotation, but there are underlying principles, scientific and commercial, upon which all must be based:

From the earliest times of agriculture, the necessity of a Rotation of Crops, has in one shape or another been more or less fully re-

cognized. A correct system of rotation must be founded upon chemical and physiological laws; but the importance of a rotation of some kind was well recognised long before either chemistry or physiology were brought in as hand-maids to Agriculture. Now that these subjects are recognised as important, not only to "book farmers," but also, and in an especial manner to the practical farmer in the performance of daily duties—the subject of rotation still continues to hold a high position among the questions of practical agriculture, and its solution will be received as a boon to the farmer's art. We have advanced so far; we can now explain, in a measure, by a reference to scientific principles, the reason why rotations are requisite; and the principal desideratum is a knowledge of the most profitable details of practice. Every year sees us nearer the settlement of such points; and the discussions that have taken place at the Central Farmers' Club, and in the Agricultural Journals during the past few weeks, have afforded valuable contributions to our knowledge. Even at the beginning of the present century, so much attention was being paid to the subject of rotation, that Sir John Sinclair, in his work on Scottish Husbandry, observed:—"Of all the subjects included in the present enquiry, this perhaps is the most important, and the most difficult to discuss," the returns transmitted to him on this subject exceeding 80 in number. It must depend upon the judgment of the farmer, says Sir John, to adopt those modes of cropping best suited to the climate where he resides, the nature of the soil he cultivates, the size and situation of his farm, and a variety of other circumstances which will necessarily require his attention in determining which ought to be preferred;—for every farmer must be aware, in fixing on his rotations, that it is necessary for him to ascertain, not only the various articles for the production of which his farm is calculated, and which are likely to yield him the greatest profit; but also the succession in which these articles ought to be raised, so as not to diminish the fertility of his soil; or, as Lord Kames has well observed, so to intermix his crops as to make the greatest possible profit, consistently with keeping his land in order.

One of the most productive discussions that have taken place on this subject is that of the Central Farmers' Club in which the leading speaker, Mr. Thomas, referred first to the agriculture of the reign of the earlier Georges, when two crops and a fallow were the rotation which prevailed, and that of the Romans, when a fallow every other year prevailed. He then spoke of the improvements first effected in agriculture north of the Tweed. He said:—"I believe I am only doing justice to our friends north of the Tweed, if I state that it was the agriculturists of that country who, at the close of the last century took the lead in those vast improvements which began to distinguish our husbandry. They observed that the same crops repeated consecutively became smaller and smaller in their produce, whilst with intervening crops of clover or roots the produce increased, and this led them to the conviction, which the science of chemistry has now elucidated, that cereals and bulbs each extracted a different substance from the soil, and that this extracted matter, whatever it was, was in time restored either by the effect of the atmosphere or the agency of manure. The researches of the agricultural chemist were then unknown, but the idea was

correct in the main; and thus first arose the famous agricultural system of alternate corn and green crops, which has so long maintained its ascendancy. The rotation of cropping which on strong lands in Scotland first obtained, and still retains the greatest favour, is the six course—always premising that the land must be first made dry by draining—usually commencing with a fallow, or fallow crops, such as tares, or coleseed, and then wheat, beans, barley, clover and wheat. It is sometimes altered to fallow, wheat, clover, oats, beans, wheat; but by some there is an objection to this course, from the bean crop being so late in the rotation as to cause more difficulty in keeping it clean. But, if a landlord will insist that his tenant shall be bound down to one course of cropping, perhaps none better than one of these two could be found. The cultivation of the turnip soils of Scotland may be included with those of England. Whilst this energy was being displayed by our northern friends, enterprise and experiments were not wanting in England. J. W. Coke, afterwards Earl of Leicester, had succeeded to his vast estates in Norfolk, where a soil naturally poor, only produced the poorest crops when their cultivation was attempted, but the greater part presented only sterile sheep walks, or was devoted to the purposes of the warren. His active and energetic mind deplored such a state of things, and he resolved upon improvement. He saw that the soil wanted solidity before it would yield productive crops of corn, and the turnip and clover seemed to afford a remedy. And hence sprung the famous rotation of turnips, barley, clover, and wheat, which appeared for many years to promise unparalleled and permanent success. The Swedish turnips, then called ruta бага, were then first introduced to this country. Red clover had been but little cultivated, and the invariable luxuriance of these two crops, and also of corn crops which succeeded them, seemed to point out the Norfolk system as one without a rival. Was it to be wondered at, then, when landlords beheld the gigantic improvements which were here displayed, that they were anxious to introduce the like into their respective estates; and when they found persuasion unavailing, to compel their tenantry to improve by coercion? There can be no doubt but that when the stringent covenants and restrictions to which I have had so often to allude were first introduced, both their object and their tendency was to introduce an improved system of agriculture; but it has at last broken down, after holding its supremacy over half a century; and, indeed, that it contained the germ of its own dissolution was clearly seen many years back, by the late Sir J. Sinclair, and many other eminent agriculturists. I know not how the case may be in Norfolk; but this I do know, that in every part of England with which I am intimately acquainted, there is one universal lamentation over the difficulties which the system now presents. The Swedes, though more certain of a crop than they once were, through the agency of peculiar manures, are yet subject to strange and inexplicable diseases; sometimes resulting, as was the case last year, in the total ruin of the crop. The barley, where the crop of Swedes had proved large, and had been fed on the ground with the addition of cake or corn, we find in fruitful seasons laid flat on the ground; and when a period of wet takes place at the time of harvest, seriously sprouted, even before touched with the scythe, the grain un-

fit for the malster, and the straw valueless as fodder. The farmer then finds that his young clovers have been killed by the lodgment of the barley crop; the next year produces him either an inferior crop of hay or a scanty run for his flock, and the succeeding one yields him but an inferior crop of wheat; for every practical man knows how much the produce of this crop, when it succeeds clover, is influenced by the degree of fertility in its predecessor, occasioned, no doubt, by the amount of roots left in the ground, as has been pointed out in more than one lecture of our friend Mr. Nesbit. Let us endeavour now to ascertain the cause of this disease among the Swedes (the cause of the frequent failure of the remaining three crops I have already alluded to) and then see if we can throw out some hints for an improvement of the rotation. That when a longer period than four years elapses between the crop of Swedes, the crop is usually found to be heavier, and success more certain, is well known. A remarkable instance of this I may quote, as taking place in a parish adjoining the one in which I reside. At the close of last year my neighbour Mr. A. W. Crouch, in common with the rest of us, lost almost the entire crop of a fine piece of Swedes in a certain large field, by some inexplicable disease; but across this large field was a broad belt of magnificent Swedes, totally uninjured by disease, and presenting a marvellous contrast to their decayed and offensive neighbours. What was the cause? Each part of the field had been manured alike, and each acre had received the like attention. The secret was this—four years previously this belt of sound bulbs had been preceded by Mangel Wurzel; the remainder of the field had at the same period been cropped with Swedes. Our friend Mr. Joseph Paine has told me that the same phenomenon occurred on the occupation of a near relative of his, and I have witnessed it in other places as well. Let us at least gather something from these remarkable facts. Mr. Thomas then proposed alterations on the 4-course system not as a rule, but as a relaxation of a rule possible under certain circumstances. Let us now suppose, said he, that we change the rotation from the four to a five course; and that it be turnips, wheat, barley, clover, and wheat. Its advantages would be these. In the course of 20 years it would be found that the four crops of Swedes each at five years' distance from each other, would have produced a greater aggregate amount of food than five crops would have done, each four years distant from the other, and that the bulbs would be much freer from either disease or failure. I then propose to take a crop of wheat, as our Scotch brethren almost invariably do. We know by practice that our ordinary wheats succeed remarkably well when sown early after turnips. We have then the Talavera, and other prolific Spanish wheats to fall back on; and, lastly, the April wheat which may be sown with security up to the 1st of May. I may here mention in parenthesis that a remarkably good farmer (now I am sorry to say no longer a member of this club), and who adopts the rotation we are discussing—I mean Mr. Shaw of Cotton End—sows much of the wheat drilled after turnips with Italian rye-grass, for the keep of his couples during the month of March, and, ploughing this land about the 1st of April, sows it with barley and ordinary clover seeds. It is, however, very doubtful whether the Italian rye-grass could be intro-

duced in this manner to any large extent. Next, then, in order to the wheat, comes the barley—the proscribed act—two white straw crops together. The experience of every one who has tried this tells him that this is the very mode to obtain a fine sample of malting barley; and, as there appears to be no prospect of a remission of the malt tax, this, to those who cultivate the grain, is a great object indeed. But I do not propose to sow this second white straw crop without bestowing upon the land some nitrogenous manure. I should do it in the form of guano. Our friend Mr. Mechi would, no doubt, do it with liquid manure. Perhaps other means would answer the purpose, but I agree with the late Mr. Pusey, “that liquid manure is a pretty toy, but solid dung is for farming in earnest.” By guano I, of course, mean genuine Peruvian, and not the worthless trash which is under that name vended by hosts of unprincipled dealers. I read in the report for East-Lothian, in the Journal of the Royal Agricultural Society, “It is now found that guano, at the rate of two cwt per acre, can always be applied with profit to the oat crop however high the condition the land may be in; and if this applies to the Oat Crop (Barley is but little grown in Scotland) I imagine it must apply to the Barley also. The idea of growing Barley after wheat, or two crops of Barley consecutively, is not new. In Rachelor's report of Bedfordshire, 1807, he says, “barley is a favourite crop towards Biggleswade, and is frequently sown after wheat;” and speaking of another part of the country he says—“The large quantity of London and other manure which is here used, causes the barley to grow too luxuriantly to make it prudent to venture the clover to be sown in the first season. The barley is therefore repeated for that purpose, and with better success.” But in much more recent times, we find the same course recommended. In the report for Dorsetshire, published in the Journal of the Royal Agricultural Society, it is mentioned as becoming universal. In Mr. Caird's report, too, on the farming of Lancashire, he is loud in the praise of a Mr. Longton, of Rain Hill, and adds (p. 268):—“Mr. Longton is decidedly of opinion that barley after wheat is the best management with which he is acquainted.” With such examples, there would be no doubt about the success of the clover crop, and, after a luxuriant crop of clover, but little of that of the wheat.

Mr. J. Paine, Bedfordshire, remarked that he had long recognised the difficulty of getting his turnips every fourth year, and the subject connected with his name, which Mr. Thomas had mentioned, came under his notice about two years ago.

It happened that on a 30 acre piece, well cultivated for turnips, and with a good plant, the greater part of the field became blighted during the summer; the only exceptions being about seven acres, which had borne a crop of pease during the routine of the previous four years, and which was constantly eight years from the Swede crop, and above an acre and a half which had been well limed. Here the produce was very good, but these portions were all that was worth a farthing, though the entire field had been sown with the same seed, under precisely similar circumstances. When the process of hoeing was performed, a more luxuriant crop could not be seen; yet, within six weeks from that time, saving the two portions referred to, the roots were not worth picking up. What was the conclusion

to which he naturally came? Why, that the fault lay in sowing the turnips too frequently. For his own part he was inclined to think that, through the agency of artificial manures, the farmer might in some districts cultivate his land even upon a six course. Were the English turnip introduced in one course, and the Swede in another, he believed it would also be found greatly to aid the growth and fertility in the latter. Certainly a plan similar to that which he had adopted with clover, was attended with much advantage. That plan was to sow mixed clovers (white clover, grasses and so on, not broad clover) in one course, and then broad clover in the following course. If the seeds of turnips were “coursed” in this same way, he saw no reason why equal benefit should not arise from pursuing that system.

Mr. R. Baker observed—The true principle in the rotation of crops appear to be, not to bring in rotation in successive years such crops as draw from the land the same description of support, but rather that one crop should so alternate with another as to supply its successor with food, or at all events, not be injurious to it. On lands well managed the following would admit of a green crop of rye or tares, or rather vegetables, to conclude with turnips. On his light land he always took rye before turnips, after the turnips barley, and then clover. The turnips furnished abundant food for the barley, and the barley was a good preparation for the clover. To the clover succeeded wheat, then followed an autumnal fallow, manured slightly and barley again. But of course the rotation must vary according as the description of soil varied or changed; therefore the farmer should have the privilege of selecting that mode of rotation which was best adapted to the soil. Upon his light land also, many gentlemen present had seen the experiment, he had adopted the system of taking oats after turnips, and wheat after oats, and he found that he could grow better wheat in this order than by any other process he had ever tried. In fact the crop was a most productive one—his last yielding, upon being threshed out, forty bushels an acre, and whenever he could get that quantity he was satisfied. The time had now arrived when the old idea about the exhaustion of the soil ought to be entirely abandoned. There was no such thing as exhaustion of the soil. Only give him an opportunity of clearing the crops as they came in rotation, and an ample supply of manure of an organic character, and he could go on producing crops year by year forever, and, in other words, carry out what had been ironically termed the “everlasting shift.”

Several speakers expressed their opinions on the subject of leases, and in conclusion Mr. Owen Wallis proposed the following resolution:—“Resolved, that it is the opinion of this meeting that the landlord who binds his tenantry down to a prescribed routine, from which they must not, under a penalty, deviate, inflicts both upon them and the public a very serious injury without conferring any corresponding advantage.” Mr. Smithies seconded the motion which was put to the meeting and carried unanimously.

The whole subject, in its various phases, has been well brought under review in a recent editorial article in the ‘North British Agriculturist,’ from which it may be advisable to quote a few remarks, before proceeding to discuss details, especially as these refer to the proceedings of the Club above referred to.

The editor of the "North British Agriculturist" observes:—The exhaustion of a soil of the nutrient matter in a soluble state by a particular plant is one of the known causes which render a variation in the kind of plants cultivated desirable. But exhaustion may be remedied by the application of fertilising ingredients; still the plants do not grow with that healthful vigour necessary to produce a soil crop—showing that organised structures (plants) require to be placed in certain conditions apart from the supplies of the materials essential for promoting their growth. The theory of the excretion of plants was readily taken up, and for a time believed as the explanation of this; but recent investigations have tended to throw discredit on the theory. At present there is considerable uncertainty as to the cause, or more properly the causes, which render soils unsuitable for the frequent growth of the same kind of plant. Apart from the questions which relate to the excretion of plants, or the solubility of the nutritive elements, other causes, hitherto not much brought into view, affect healthy growth.

The most important point in question of rotation is, whether the frequent repetition of the same plant tends to induce fungi, or to increase insect depredations. There have been no well conducted observations as to the amount of influence the frequent repetition of the wheat plant has upon the presence of fungi or the propagation of the wheat midge.

So far as our observations go, the growing of wheat alternately with other plants appears to diminish the liability of the development of fungi. This, however, may be traceable to the higher cultivation of the soil, incident to the frequent repetition of the wheat plant. As regards insect depredations, the more frequent repetition of wheat, in East-Lothian for instance, has not increased the ravages of the midges—these appear to be diminishing; but the nature of insect attacks generally depends so much upon the character of the season, and upon causes beyond observation, that speculation is liable to mislead. It might have been presumed that the growing of wheat successively would have some influence in increasing the number of insects, but this does not appear in the Lois-Wcedon experiments.

Some strange anomalies are presented in connection with the frequent cultivation of certain plants, or rather varieties of plants of the farm, more especially of the oat, and certain of its more tender varieties. Oats can be grown successively for two, three, or even five years, and frequently without any perceptible diminution of their healthy growth, if hardy varieties are selected; but they cannot be cultivated successfully with a leguminous crop (beans, pease, &c), intervening; we have seen frequent examples of this. On the other hand an intervening turnip or potato crop does not appear to affect to the same extent the succeeding oat crop. Again, wheat can be cultivated alternately with green crops, without any apparent diminution of health or produce, or any increased tendency to disease. In experiment with beans and wheat alternately, the beans being grown in drills, receiving a light dressing of manure, at the end of several years the beans had almost ceased to yield either straw or grain, while the wheat crop appeared gradually to increase in straw, grain, and quality of grain. The frequent repetition of wheat, when the condition of the soil is maintained,

and especially if the soil is suitable for the growth of wheat, appears to diminish the tendency to become mildewed, or otherwise unhealthy in growth, either of the straw or grain. The tendency to ball, however, is exceptional, being more liable to recur unless considerable care is exercised. Beans and barley grown alternately on the richest carse soils speedily become sickly in growth, with a reduced produce and inferior quality of grain. Several examples of this have come under our observation, and the deterioration generally was very rapid and marked. It would appear that of all the cereals, wheat possesses the power of continuing to grow without any apparent diminution of the produce, provided the constituents furnished in the manurial elements are present. Oats are next to wheat in this respect, although certain anomalies are occasionally presented. Barley, of the three cereals, requires the longest interval to produce abundantly. Of the green crops, the turnip plant cannot be grown successively, except in very exceptional instances; neither can it be cultivated with certainty to alternate with a cereal crop. There have been full crops grown twice, alternating with a white crop; but the soil was a heavy loam in high condition, and the turnip crop comparatively new to the soil. Neither manures nor cultivation will overcome the tendency to diminished weight of roots. But, apart from the diminished weight of roots, with the increased tendency to be attacked with the fungus termed the dry rot, there is the tendency to anbury (finger-and-toe). Although this disease is uncertain in its appearance, sometimes attacking the turnip when grown at wide intervals of time, and even when turnips have been grown for the first time, and is one of the most anomalous of the diseases of the cultivated plants, it is now established that when the disease once appears in a field it rapidly extends, if the turnip crop is repeated at a short interval, unless the land has been manurially treated, as with lime incorporated with the soil in autumn.

The four course system, at no period a highly desirable one, has now become even more unsuitable, from the impossibility of securing a vigorous growth of the clover plant once in four years, and also of the turnip in the same short period. The difficulties connected with such a frequent growth of the turnip crop have been attempted to be obviated by alternating white or yellow turnip with the Swedish turnip, and latterly the mangold with the turnip. In the case of the clover plant, the substitution of white clover for red alternately in the four years, has also been acted upon, but this has not been very successful. The failures of the clover plant have been very imperfectly traced, but are so general that red clover cannot be repeated successfully every four years.

ONE of the most promising novelties in the way of Vegetables is the Alsace or Winter Cucumber, introduced to Paris, from Strasburg, by M. Weber, an Army Surgeon. It is eaten in the winter time just like a common cucumber, but it may be kept all winter on a dry shelf, without the trouble of pickling. Its flesh is less watery than that of the common cucumber, and it has an artichoke flavour with a dash of filbert, which is said to be

an improvement, especially when the cucumber is cooked and served with gravy.

THE new rose, "Saint George," has been figured in the *Belgique Horticole* and the *Lombard Florist*. No doubt it will be sought for next St. George's day, hence this hint to our enterprising rose growers.

NOVA SCOTIA DEVON STOCK REGISTER.

(Continued from p. 259, No. for Aug. 1874.)

BULLS.

CXVI.—SIR HASTINGS. Calved Nov-2, 1874. Bred by and the property of Colonel Laurie, Oakfield, N. S.

Sire, Havelock, cvi.

Dam, Maid of Miller Hill, by Wilmot. g. dam, Lady Anne, by Lord Elgin.

g. g. dam, Fanny, by Don Juan.

g. g. g. dam, Roulette (1483), by the Duke (570).

CXVIII.—LORD CLYDE. Calved 20th April, 1875. Bred and owned by Col. Laurie, Oakfield.

Sire, Havelock, cvi.

Dam, Primrose, by Wilmot.

g. dam, Lady Anne, by Lord Elgin.

g. g. dam, Fanny, by Don Juan.

g. g. g. dam, Roulette (1483), by the Duke (570).

HEIFER.

CXVII.—TULIP. Calved 1st December, 1874. Bred by and the property of Col. Laurie, Oakfield, N. S.

Sire, Havelock, cvi.

Dam, Lady Pink, by Wilmot.

g. dam, Lady Anne, by Lord Elgin.

g. g. dam, Fanny, by Don Juan.

g. g. g. dam, Roulette (1483), by the Duke (570).

ANOTHER NEW SOCIETY IN COLCHESTER.

THE people of Earltown, County of Colchester, are taking measures for the formation of an Agricultural Society, and have applied to the Central Board, through their Member, W. A. Patterson, Esq., M. P. P. The Society promises to be a strong one. The following letter will explain particulars:—

EARLTOWN, April 24, 1875.

Dear Sir,—Your letter, containing information concerning the forming, &c., of an Agricultural Society, came to hand. I am happy to inform you that we have succeeded in forming one, and to all appearances, a flourishing one, as all appear to be active and anxious. Our list contains forty-five (45) members, and the sum of forty-five dollars (\$45), is paid in to the Treasurer, (\$1 each.) The Society will be known as the Earltown Agricul-

tural Society. The officers are:—Jno. S. McKay, *President*; Alex. McKay, *Vice-President*; John M. Baillie, *Secretary*; John McKay, *Treasurer*; Alex. Baillie, Alex. Ferguson, John Ross, Daul. Baillie, Wm. Sutherland, *Directors*.

The attested certificate of payment, which is not required to be sent in until December, you will find enclosed. We expect to derive some benefit from the Society during the coming Summer, at least we intend to be of some trouble to the officers, therefore we thought it right to forward certificate, &c., as it were a guarantee of good faith. J. M. B.

PLASTER.

OLD BARNS, TRURO, *May 14, 1875.*

Having seen the article from the *Journal*, published in *Truro Sun*, where you say that if you knew where Ground Plaster could be had you would advertise it for the benefit of your readers, I beg to say that I can furnish it at Truro for \$1 per barrel.

GEORGE BURGESS.

A NEW AGRICULTURAL SOCIETY AT SALMON RIVER, BEAVER HARBOUR, CO. OF HALIFAX.

A public meeting was held at Salmon River, Beaver Harbour, on the 27th day of December, 1874, at which Henry Balcom, Senr., Esq., was appointed Chairman, and the Rev. Edward Ansell, Sec'y.

The meeting having been called to order, it was resolved to organize an Agricultural Society for this part of the Eastern Shore, to be called the "Salmon River, Beaver Harbour, Agricultural Society," for the purpose of improving the breed of horses, cattle, sheep and hogs. The following officers were appointed:—Michael O'Leary, *President*; Samuel Balcom, *Vice-President*; *Directors*, Charles Hartling, Leonard Winters, John Fraser, Norman Campbell, Capt. A. Romkey.

Norman Campbell, was appointed Representative of the Society for transacting business and other matters.

Rev. Edward Ansell, *Secretary* and *Treasurer*.

The Roll of membership (42) was exhibited, and power was given to add to their number; and the completed List now accompanies these minutes.

HENRY BALCOM, SR., *Chairman*.
EDWARD ANSELL, *Secretary*.

FORCING ASPARAGUS.

Those who are fond of this delicious vegetable, and desire to lengthen its season, can do so with little trouble or expense by starting some roots under glass in a hot-bed in the early part of March. Two sashes, 3x6 each, will, under care-

ful treatment, give a couple of bunches every other day for a month or so, until such time as the out-of-door growth comes into market. The hot-beds can be made in the way described in the *Weekly Tribune* of January 19. Old asparagus roots are the best for forcing. When the bed is made the roots may be set eight or ten inches apart and covered with about three or four inches of rich soil; then put on the sashes and cover at night with straw mats or other covering to protect from cold weather. The bed will require frequent watering to keep the earth moist; this should be done at midday, and always with tepid water. The temperature of the bed may be high up to 70 degrees. This plan of forcing asparagus could be carried on with some profit by florists by arranging beds of earth under the tables in forcing-houses, and planting old asparagus roots. The heat requisite to start young plants would be quite enough to force an early growth of asparagus, which would sell readily at high prices in market during March and early part of April.—*Tribune*.

[Asparagus may likewise be forced by simply putting a hot-bed frame and sashes over a portion of the Asparagus bed.—Ed. J. A.]

CHEESE FACTORIES.

We have repeatedly received letters of enquiry respecting the details of a cheese factory, from parties contemplating the starting of such. We now publish, as the best answer we can give to such correspondents, a communication from Mr. Willard, furnished by him to the Royal Agricultural Society of England, and which concisely covers the whole ground:

"There are a few factories where the milk is purchased by, and the business carried on wholly under control, of one or more proprietors, thus making it a separate and distinct interest from that of patrons.

"The popular method of organizing factories, and one which seems to give good satisfaction, is to make them joint stock concerns. The ground is selected and an estimate made of buildings, machinery, and fixtures. The whole cost is then divided up into shares of fifty to one hundred dollars each, and the neighbouring farmers, or those favourable to the movement, take stock in proportion to the number of cows from which they are to deliver milk. Officers are chosen and the company managed as a joint stock company. Usually a committee, or some one person selected from the patrons, is chosen as a salesman of the cheese, whose duty it is to make sales at best prices to be had, arrange dividends, and pay over shares to patrons, deducting of course the

price per pound for manufacturing, which is made to cover all expenses, including the per centage on cost of buildings and fixtures.

"A good cheesemaker is employed as manager and manufacturer at a certain price per pound of the cheese manufactured. This manager employs his labourers or assistants, and pays all expense of running the factory, taking care of cheese, keeping record of milk delivered daily by different patrons, entering the same on the books of the factory and upon the passbooks of patrons. Often the company employ the manufacturer and all the hands at fixed salaries.

"The milk is weighed at the factory when delivered, and as experience has shown that every ten pounds of milk (as an average for the season) should make one pound of cured cheese, firm, solid, and in good marketable condition, each farmer thus has a daily record in his passbook of what his herd is yielding.

"The manager is employed with the understanding that he is to make a good, fair article, and his product is examined from time to time by committees, by experts, and by patrons, as they see fit, and thus bad work is soon detected. If the management is not satisfactory the cheesemaker is discharged or the causes of the bad work traced out and rectified.

"The stockholders and those delivering milk meet from time to time and deliberate as to sales, each one voting according to the number of cows from which he delivers milk, and in this way instructions are issued to the salesman.

"Then there is another method of establishing factories. One man, or a company, erects buildings, and is to all expense in running the factory, charging by the pound of cured cheese for manufacturing. The cheese in this instance, it will be seen, belongs to patrons, who appoint a salesman and control the product precisely as under the other method.

"It will be observed that under this system of checks all men who deliver milk are upon an equal footing, where no advantage can be taken, for the farmer, if he chooses, can weigh his milk at home and compare it with the figures entered at the factory upon his pass-book. The company is responsible for milk delivered. The account is payable in cheese, this part of the system being somewhat like that in making deposits at bank.

"1. 'Number of cows (average).'
The number of cows varies greatly, from 300 to 1,500 or more. Our experience shows that a factory with less than 300 cows will not pay expenses, including interest on capital invested in factory, fixtures, &c., unless an extra rate be charged for manufacturing. Extremely large factories, say of 1,500 cows, do not give the best return to farmers. There is usually more waste; the milk coming from a long distance is

often in a bad condition, and the work at the factory is, from time to time, hurried and slighted. The best results are obtained, both as to quality and quantity of product, where the factory uses the milk of from 500 to 800 cows, and not above 1,000.

"2. *'Size of buildings.'*—Improvements are constantly making in buildings. The early factories were made rude and imperfect structures. The late erections are more substantially built, but very plain in style, with no pretensions to architectural beauty. This is a mistake. A competent architect should be employed, who should give designs for a handsome exterior, imposing, graceful and pleasing to the eye. The cost would not be very much more, but the value of such buildings would be greatly enhanced, and could be turned to good account in case they were abandoned for cheese making.

"In some of our establishments the manufacturing department and curing rooms are under one roof—in others they are separated. The system of marketing cheese in America is somewhat different from that in England. The cheese is not held for so great a length of time while curing. We try to send our cheese to market when it is from thirty to sixty days old. There are few curing rooms built with the design of holding cheese for the entire season.

"Without attempting to give model buildings, or those considered by some as the best, it will perhaps suffice to present two or three plans of those esteemed as among the first-class.

"The Fairfield and the Willow Grove send out cheese favourably known in the English markets. They have for several years received 'top prices' from English shippers.

"The Fairfield factory is located in Herkimer Co., N. Y., eight miles from Little Fal's, the largest country cheese market in America. It receives the milk of 1,000 cows. The manufacturing department and curing rooms ('dry house') are under one roof. The establishment is one hundred and forty-eight feet long by thirty-eight feet wide, and three stories high. The second and third stories are for curing-rooms. The manufacturing-room is forty by twenty-eight feet; press room, thirty-five by thirty-one feet. The boiler, five-horse power, stands in a separate room, and cost four hundred and fifty dollars. The manufacturing room is provided with double vats for cheese making. These vats are each sixteen feet long, three feet four inches wide, and eighteen inches deep, holding six hundred gallons.

"We may remark here that vats of this size and proportion are convenient for work, and are usually adopted at the factories. They are double—that is, the inner one of tin setting in a wooden vat, with spaces between the two at the sides

and bottom where the heat is applied, either steam or hot water.

"The Willow Grove factory is in Oneida county. The dry house sets upon high stone piers, and is one hundred by thirty feet, two stories. The manufacturing department is in a separate building, being thirty by twenty-eight feet, with press room twenty-six by fourteen feet. The factory has capacity for the milk of 1,000 cows.

"Wight's Whitesboro factory, in Oneida county, has also a high reputation in the English markets. It was erected for six hundred cows. Dry house one hundred and four by thirty feet, two stories. Directly opposite stands the manufacturing department, which is twenty-six by fifty feet.

"3. *'Cost of Buildings.'*—This, of course, varies in different localities, and must be regulated according to taste in architecture, cost of material, labour, &c. Factories in the State of New York cost from \$3,000 to \$10,000.

"4. *'Cost of Machinery.'*—The principal cost under this head will be for steam boiler, milk vats, presses and hoops. Steam boiler, with fixtures, say \$500; vats, \$100 each; screw presses, \$4 each. A factory for six hundred cows may be fitted up in good running order for from \$1,200 to \$1,500. Vats with heater attached, which will obviate having steam boiler, are sold (six hundred gallon size) for about \$200 each.

"5. *'Capital Invested.'*—If ground or factory site be added, this question is answered in Nos. 3 and 4. Sites for factories are often leased at small rentals, and for a series of years.

"6. *'Work People Employed.'*—A factory with six hundred to eight hundred cows will need five hands, and perhaps, when the curing rooms are full, more help. The manufacturer or head manager, if skilful, will command from \$800 to \$1,200 and board, for the cheese making season, nine months. The second man, who, perhaps, has worked at the Lusiness for a year or more, gets, say from \$35 to \$45 per month and board, and women from \$4 to \$5 per week and board.

"Women not unfrequently take charge of factories as head manufacturers at salaries as high as \$100 per month and board. Boys and girls, or young persons of immature age, are not usually employed. The head manufacturer at the factory is expected to 'take off his coat' and do a good day's work every day, seeing to the delivery of the milk, working at the curds, the presses, and with a sharp eye to see that all moves on in order and on time.

"7. *'Quantity of Milk Received.'*—This, of course, must depend on a variety of circumstances—goodness of cows, quality of pasturage, the season, time of commencing and closing operations.

"The Weeks factory, at Verona, Oneida

county, in 1867 had an average of 640 cows; length of season, 209 days; pounds of milk received 2,481,615; green cheese made, 261,904 pounds; cured cheese, 250,540 pounds; shrinkage, four and one-third per cent; pounds of milk to green cheese, nine and forty-eight one-hundredths; pounds of milk for cured cheese, nine and ninety-one one-hundredths.

"The gross receipts per cow (average for the season, exclusive of income from butter and cheese, made before the factory was opened, and after close,) varied from \$34 to \$78, the former being the poorest dairies and the latter the best.

"The cheese sales in 1867 were very low in America, the average at the Weeks factory being only \$14.40 per one hundred pounds. The receipts other years have been very much larger, but it is always well in estimates of this kind to keep on the medium side. Some of the factories in Herkimer county make an average of five hundred pounds to the cow, and at present prices for cheese (twenty cents,) this would give \$100. This would not be a fair estimate, however, for a novice to base dairy prospects upon.

"8. *'Distance (maximum and average) which the Milk is brought.'*—The average distance from which the milk is brought will not exceed one and a half miles, and perhaps in the old dairy districts in New York a little less. Four or five miles may be set down as the maximum, except in rare cases, as at the West, where we have reports of milk being carted eight miles and more, and yet, if cooled at the farm, arriving at the factory in good condition. Such a long distance is regarded as altogether too far to cart milk with profit, especially on our American roads, which for the most part are bad during a considerable portion of the year.

"The practice of cooling milk at the farm does not usually obtain among dairymen. Canning milk too warm and hauling it in this condition to the factory, results in great losses to the American dairymen. It is now several years since we commenced urging upon our dairymen the importance of cooling the milk at the farm and as soon as drawn from the cow, and, most especially, have we urged this principle since returning from a visit to European dairies.

"In 1866 the American Dairymen's Association employed the writer to go abroad and make a careful examination of European dairies, and to report upon their management. After an extended observation over the dairy districts of Great Britain, and an examination of the English methods, it was clear that in a matter of cleanliness, care of milk and of stock, management of pasturage, &c., the English were in advance of us; but, in machinery and appliances for manufac-

turing, the Americans were a long way in advance of the English.

"Our reports upon English methods, &c., have effected a great change in American dairy practice, and it is pleasant to know that the bad practices of our dairy-men are being corrected. We are now beginning to cool milk at the farm, and it need not be said the character of American cheese has greatly improved.

"As to our factory system:—Uniformity and excellence of product is almost always certain where good milk is delivered at the factory. The machinery and appliances for manufacturing render cheese making comparatively easy. Everything is so arranged as to avoid lifting and heavy work. The manufacturer must exhibit high skill in manufacturing. He makes cheese making a study and adopts it as a profession, and a good salary is paid for *skilled service*, which induces greater efforts for success, and hence constant improvement is going on.

"9. '*Pounds of Cheese made per annum.*'—This has been answered under previous heads. We may remark, however, that a little less than ten pounds of milk is considered a fair average (the season through) for one pound cured cheese. Some skilful manufacturers will get an average of one pound cured cheese from nine pounds milk, and some report even better than this.

"10. '*Charge of Making.*'—The usual charge in large factories is seventy-five cents per one hundred pounds of cured cheese. This includes care of cheese until sold. If the factory is small, one cent per pound is charged. A large number of factories charge two cents per pound, and furnish everything required—bandage, annatto, rennet, and the boxes in which the cheese is placed for shipping. Hauling cheese to railroad depot is done by patrons.

"11. '*Disposal of the Whey.*'—The whey is usually fed to hogs at the factory. Ample pens and yards are provided by factories. Each farmer delivering milk is allowed one hog at the factory for every five cows. He can have a pen where he can keep his hogs separate from others or turn them in the yard with others. Then whey runs to large reservoirs near the pens, and when the hogs are to be fed a faucet is opened which lets the whey into the troughs.

"At some factories the whey is carted home by farmers when they return after delivering milk. Quite recently a process has been invented for taking the butter from the whey—or rather two processes, the hot and cold.

"In the hot process the whey is run off sweet from the curds into a large copper vat placed over an arch. Heat is here applied until the mass indicates a temperature of one hundred and eighty degrees. Acid (sour whey) is added also.

The oil and albuminous matter quickly rises, is skimmed off and set in a cool place. The next day it is churned at a temperature of from fifty-six to sixty-eight degrees. About twenty pour 's of butter is thus obtained from five hundred gallons of whey. The butter is of good colour, and when the process is properly conducted, of fair quality for present use.

"We have seen and tasted of samples could not readily be distinguished from butter made from cream, and it sold to butter dealers in the market at the same price with other butter.

"At some of the factories the whey is considered a requisite of the manufacturer, who purchases hogs and feeds them upon it.

"It should be remarked that when the butter is taken from the whey as above, the whey is then used for feeding swine. It is fed sweet, and in practice it is claimed the pigs thrive upon it quite as well as when fed in the usual way."—*Canada Farmer.*

LIVE STOCK AT THE CENTENNIAL.

It is understood that the Centennial Commission has concluded to have the Live Stock display at the International Exhibition, within the months of September and October, 1876; the periods devoted to each class and family being fifteen days, and the division as follows:

Horses, mules and asses, (as one class), from September first to fifteenth.

Horned Cattle, (of all varieties), from September twentieth to October fifth.

Sheep, swine and goats, [as one class], from October tenth to twenty-fifth.

Poultry will be exhibited as a permanent and also as a temporary show, the first commencing on the opening of the Exhibition, the latter from October twenty-fifth, to November tenth.

Animals must be of pure blood to be qualified for admission, [trotting stock, fat and draught cattle excepted] and even those of pure blood must be highly meritorious.

The exhibition being open to the whole world, it is of the first importance that we bring forward the best of their kind only, as the character of our stock will be judged by the general average of those exhibited.

Exhibitors will be expected to provide for feeding their stock.

All forage and other food will be furnished at cost prices at depots conveniently located within the grounds.

Exhibitors will also be expected to furnish their own attendants, on whom all responsibility of the care of feeding, watering and cleaning the animals, and also of cleaning the stalls, will rest.

Though the Commission will erect ample accommodation for the exhibition and protection of Live Stock, contributors

who may desire to make special arrangements for the display of their stock, will be afforded facilities, at their own cost.

All animals will be under the supervision of a veterinary surgeon, who will examine them before admission to guard against infection,—and who will also make a daily inspection, and report.

In case of sickness, the animal will be removed to a suitable enclosure, specially prepared for its comfort and medical treatment.

Rings will be provided for the display and exercise of horses and cattle.

It is highly important that all who design exhibiting, should now make application, as the extent of preparation necessary can only be regulated by an estimate based upon actual demands.

Inquiries may be addressed to the Chief of the Bureau of Agriculture, Philadelphia.

POMOLOGY.

It is the purpose of the Centennial Commission of the International Exhibition, and an especial object of interest to the Bureau of Agriculture, which has been charged with the reception of Fruits for exhibition, to afford every inducement and facility for a full and complete display of the fruits of the U. S. varied climates, and also those of more northern and tropical regions.

It being questionable as to the practicability of exhibiting many perishable fruits, the products of the tropics, models in wax and plaster will be acceptable.

Such a display of Pomological products as herein designated will, it is expected, cover the entire period during which the Exhibition will be open, though at all times varying in importance and extent. For instance, berries and other small fruits will be included in this department, and of these there will be certain classes, as strawberries from the South, ready for exhibition on the opening day; and the variety and quantity will be presented in an increasing scale as the season advances.

It will be perceived readily, that the most important display will be made during the months of September and October.

The classification, and arrangement of location of fruits sent for exhibition, will be according to their species and variety; all of similar character being assembled together, that a more satisfactory conclusion may be reached as to the respective merits of like products from different soils and States; thus all grapes, from whatever source, will be placed in one position; the same with apples, pears, and the entire list of cultivated and wild fruits, and nuts.

Exhibitors may be assured that the proper arrangements will be made for the

united interest of themselves, and pomological science.

It is hoped that the Pomological Societies of the several States, and individual cultivators generally, will co-operate in an effort to place before the world creditable evidence of the resources and capacity of the country in respect to fruit culture and products.

The Exhibition will open in Philadelphia on the 10th day of May, 1876, and close the 10th day of November following.

LILIUM AURATUM.

The following letter, describing the very successful cultivation of this magnificent flower on the shores of Cape Cod, will be read with interest, proving, as it would seem, that a light soil and thorough drainage are necessary to bring it to its highest state of perfection. I have not before heard of so fine a specimen on this side of the Atlantic:

In accordance with my promise, I herewith send you the statement regarding the growth of the *Lilium auratum* at Cohut, 1874, and other circumstances which seem to bear upon the case.

Mrs. Augustus T. Perkins began to cultivate the *Lilium auratum* in her garden at Sandanwood so early as 1871.

The position of the garden is on a bluff fifty-five feet high, overlooking Cohut Bay to the Northwest, and distant from the edge of the bank about forty feet. The garden is surrounded with yellow pine trees. The original soil is mere sand, producing nothing but pine and dwarf oak.

After the garden was laid out the sand was moved from the beds to the depth of two feet, leaving the spaces round them for paths. The beds were filled with a compost made of black mud, dug from a pond mixed with the sand taken from the beds, and enriched with manure from stables near at hand.

All the bulbs did well, some reaching three or four feet in height, and having from fifteen to twenty fine flowers on the best plants.

The lily which has caused some attention, owing to the size it attained in the Autumn of 1874, and which was exhibited at the Fair at Barus Hill, threw up three shoots which still stand (Feb 17th, 1875) and by careful measurement reach the extraordinary height of seven feet and eleven inches. When on exhibition, it had sixty-one flowers, and Capt. Wm. Childs, who prepared it for the fair, says that it had already lost three, and that it bore 64 flowers in all.

The well at Sandanwood which is near the garden is dug through fifty-five feet of clear sand, free from stones, and with faint traces of iron in it. This shows the character of the soil to its whole depth. — *Gardener's Monthly*.

AGRICULTURAL MACHINERY AT THE CENTENNIAL.

The Centennial Commission is making thorough provision for the reception and display of agricultural machinery and implements.

A section of the Agricultural Hall, an imposing structure covering ten acres, will be set aside for the exhibition of farm appliances, and it is anticipated that this feature will be second to none in the agricultural department of the International Exhibition.

It will be evident to the manufacturers of agricultural machinery that as this national exhibition, is also open to the competition of the whole world, which has been invited to participate, our past progress and present position will be closely scrutinized, and we shall be judged by the general average:—Therefore, the admission of any object will be granted only when it possesses a character of unquestionable worth, and in the case of machinery, under the ruling of the Commission, the elements of merit are held to include considerations relating to "originality, invention, utility, quality, skill, workmanship, fitness for purpose intended, adaptation to public wants, economy, and cost."

Within the Agricultural Hall will be steam power and all necessary appliances for driving all such machinery as cotton gins, sugar presses, plantation mills, threshers, fanning mills, &c.

It is contemplated to test in the field, plows for animal and steam power, reapers, mowers, tedders and hay rakes.

Manufacturers designing to compete in the field will be required to use the same machines as they offer on exhibition.

The list of articles within the Hall was published on Jan. 5th, 1876, and ends on May 1st, the exhibition opening on May 10th, and continuing six months.

Inquiries may be addressed to the Chief of Bureau of Agriculture, Philadelphia.

UTILIZING FRUITS.

(From the Transactions of the Illinois State Horticultural Society, as reported in "Western Horticulturist.")

The report upon utilizing fruits is of general interest, for who does not, at the present day, use fruit or its products in some form or other, even to hard cider. The work upon the report was divided among the committee. Mr. Periam of the committee spoke upon the preservation of orchard fruits in their natural state, and of drying and canning. In treating this division of the subject, Mr. P. said:

All that is necessary in order to keep

fruits perfectly, in fresh or natural state, is to place them in a dry, pure atmosphere, at a temperature of thirty-five to thirty-eight degrees. This has been accomplished by the plan of Prof. Nyce, and also in Schooley's preservative, the essential features differing in no great degree. The plan adopted by Prof. Nyce was to keep the temperature of the room at thirty-four degrees, and the atmosphere dry by means of the refuse of salt works, chloride of calcium, commonly called "bitterns." It is thus stated by Prof. Nyce:

"In a room or any confined vessel when filled with fruit in the gradual process of ripening, carbonic acid and water are constantly being generated. Six pounds of carbon and one of hydrogen will take up all the oxygen contained in one hundred and twenty pounds of air. The oxygen, especially if the fruit be ripe and the room warm, will usually be consumed in forty-eight hours. The atmosphere would then be made up of the nitrogen of the air and carbonic acid. The former is destitute of all active properties, good or bad. The latter is not found to have any action on fruit immersed therein. Hydrogen and carbon then cease to be evolved from the fruit, as there is no agent to unite with them, in the same way that they cease to be evolved from a burning candle when air is removed. Decomposition ceases in both cases, from the same cause."

It is simply the application of a principle laid down by Leibig, who says:

"Decay is much retarded by moisture, and by the substance being surrounded with an atmosphere of carbonic acid, which prevents the air from coming in contact with decaying matter."

From this it would appear that the more perfectly the fruit is ripened, the better it will keep, care being taken that it be not overripe, the process of after ripening being a purely chemical process, the starch being gradually converted into sugar, for, however much starch a green fruit may contain, it is gradually changed during the process of ripening, until not a trace of starch may be left; for again Leibig says: "The more starch the green fruit contains, the more sugar will be evolved during the process of ripening."

The same principle was used in the plan not long since promulgated, the invention being to place the fruit in watertight packages, and fill the interstices with carbonic acid gas, but as a matter of course, the plan did not work except in theory.

The fruit houses of Mr. Nyce were two-story buildings, the upper chamber containing ice, the sides and floor being double, three feet thick and filled in with some nonconductor, so that the fruit room should be practically air-tight. The

fruit was placed on shelves or racks, to the depth of two or three feet. I have had tomatoes preserved for three months in the house in Chicago, which came out in perfect condition. The Chicago house, however, did not pay, and it was soon, I believe, abandoned.

The elements, therefore, of a complete preserving atmosphere are a uniform temperature, just above the freezing point, dryness, purity, and the exclusion as far as possible of the great agent of the decomposition—the oxygen of the atmosphere. Whoever can secure these conditions most cheaply will best succeed in keeping apples, pears, and grapes, and, with plenty of these fruits out of their natural season, there is a fortune to whomsoever succeeds in its accomplishment.

I think the best place for keeping fruits in their natural state is in fruit-houses with double walls, secure at the same time from frost and the constant changes of the atmosphere; for, however cheap dried or canned fruits are in the market, first-class natural fruits will always command a remunerative price. A curious fact in connection with seasons of extreme plenty like the one just passed, is, that being plenty, so much fruit is wasted that a scarcity almost always follows.

Where the soil is perfectly dry to a sufficient depth, or capable of perfect drainage, a fruit-house may be readily built under a barn or carriage-house, provided no stock is kept in the barn. The walls should be seven feet high, and if three sides are under the ground, the other side may be exposed to the weather if the ventilators and windows are double.

To prevent frost entering through the open floor, it will only be necessary to have the beams one foot deep, the floor to be made of common two-inch plank, the joists or beams to be covered with matched boards for the ceiling; if the inter-spaces are filled with sawdust, or some material of like nature, frost will not enter. A trap-door should be provided for taking out fruit or entering the cellar in cold weather. If the whole cellar is not wanted for fruit, it can be partitioned off, and a part used for storing vegetables. If the fruit in a cellar of this description be kept in tight packages, the temperature may run down to twenty-eight degrees for several days together, next the walls, without injury to the fruit, provided the packages are tight; and as an index to the temperature, a sufficient number of thermometers should be kept, at top and bottom, to indicate the degree of cold, so that when the frost once gets in to the room, means may be taken to obviate it.

One of the principal reasons of failure in keeping fruit is that care is not taken to keep it uniformly cool from the time of picking, and as near the freezing point as possible. This may be measurably at-

tained by admitting the air at night, and closing it in the day-time until hard weather comes on. It is the true secret of greatest success.

Before leaving this branch of the subject, I would say that all plans for the preservation of fruits in their natural state aim at keeping them just above freezing point, as Nyce's, Schooley's, &c., are founded upon principles only differing in the details. One other plan that may receive a passing notice is Smith's method of driving out the atmospheric air from the packages containing the fruit, by means of the introduction of carbonic acid and nitrogen through a tube; this is effected by first passing a current of common air through a vessel of burning charcoal; and, although the plan is feasible, it has not resulted in profit.

We now come to preservation of fruits by drying. This plan has been practiced from remote times by simple exposure to the air; but the fruit becomes so black from oxygenation and dust, that its market value is slight. In order to be saleable it must be dried by the application of heat. This is performed in a variety of ways by the simple radiation of heat, and by currents of hot air forced either up through the prepared fruit, or down from above. The last is, we believe the Ruttan system, and is used principally for drying grain.

Mr. Dunlap, a member of the committee, spoke of the liquid products of fruits, cider and cider-vinegar. He claimed to know how to make cider and cider-vinegar, and what he should say upon the subject had been gathered from his own experience and practice.

When your apples begin to drop from the tree, then is the time to begin to gather them. You assort the perfect specimens for market, and the remainder, which is sometimes the half of the crop, are to be made into cider or cider-vinegar. The best cider is made from sound winter fruit. Some varieties of apples often ripen their fruit prematurely, and you must be prepared to utilize the product by putting the same into cider or vinegar. Ordinarily one half of the summer apples must go into cider-vinegar, which will, under proper treatment, be ready for the market a year after.

I was in an orchard this summer, where there were not less than seven hundred bushels of apples that were allowed to drop from the trees, because the owner said it would not pay to ship them, and these were fine, beautiful red-cheeked apples as any could wish, and would have made two thousand five hundred to two thousand eight hundred gallons of the best cider, that could have been sold for twenty-five cents per gallon.

The orchardist must be prepared to avail himself of every advantage in his situation. He must be independent of the apple

market. I say to my customers, when you can pay me fifty cents per bushel for my apples you can have them. When the price falls below that I press them. I have cider made on the thirteenth day of August, that is sweet and good. I know that if I can't make the apples pay, I can make the cider pay, and the refuse, not fit for market at any time, is put into vinegar.

Some say rotten apples won't make good vinegar. This is a mistake. The Shaker vinegar, so much sought after and praised, is made of rotten apples, exposed to the summer sun, and summer rains. Cider made in this way has sold for seventy-five cents and a dollar per gallon. Rotten apples make good vinegar, but to make good cider we use sound apples.

I am told that some make vinegar and can't sell it, and why can't they sell it? Because they do not have a clear, good article. Instead of racking the vinegar off, before stirring the barrel from its place, they perhaps roll it into the wagon, and stir it all up, and then it is impossible to settle it, and the grocery man will not have it.

There is another thing. I like to have my cider-vinegar high colored, and for this purpose, I let it stand in the vat twelve hours. We can ordinarily get about four gallons of juice out of a bushel of apples, in the method we adopt. We press out about three gallons of cider from the bushel, and in making vinegar we re-press this promace, and get another gallon, so that from a hundred bushels of apples we get four hundred gallons of juice.

It is necessary to put into the grocers' hands *strong* vinegar, because, among other reasons, the grocer finds it very convenient sometimes, to put in four or five gallons of water. But if a customer comes and says, "Here, I want vinegar for pickles," the honest (?) grocer will be careful and not give him the watered vinegar.

To make good cider and vinegar there is needed care, skill, experience, and—if done on a large scale—capital, so that it may be questioned whether the man with a small orchard should attempt to be both producer and manufacturer. Might it not be better for him to sell to the manufacturer? It is not always that the small farmer can afford to lie out of his money, even if he had the tact and business ability to carry on a manufacturing establishment.

Another thing, to sell a manufactured article requires a previously earned reputation. A man who is not known in the market, might not be able to sell to advantage, but when a man has worked up a trade, and it is known that he makes a good article, he has no trouble in selling. There are gentlemen in this house who have thousands upon thousands of gallons

of cider; you do not hear much about it, they have their customers, they come and take it and pay all that the man's cider is worth.

There was a time when it was difficult to get the grocery men to take our cider and pay for it. They could buy sulphuric acid cheaper. But when the people came to know the difference between this poisoned stuff and pure cider-vinegar, they were not so slow to choose the latter, and pay what it was worth; and when grocery men refused to buy my cider-vinegar, I sold direct to their customers until they were finally glad to "try a few barrels," and they have been trying my cider-vinegar ever since.

BARON LIEBIG.

(Continued from last No.)

The mysterious cause of the practical failure of Liebig's new system lay in a fundamental error committed by the great chemist himself. The alkalis and the phosphates are the most essential mineral ingredients of the plants, which, by aid of the manure, must be restored to the soil; they dissolve most readily in water. Therefore, Liebig thought it necessary to melt them together with silicious and argillaceous earth to prevent their being washed off by rain, which he thought would otherwise have been the consequence of their excessive solubility, and to give the roots of the plants time for their gradual absorption.

But whilst we all of us were taking unnecessary pains and trouble to fabricate an insoluble union of alkalis and phosphates, nature herself, in her mysterious and powerful laboratory, had already achieved this task for us. We had failed to perceive and to understand the natural law which makes the arable soil fit to retain, without any further preparation, the nutritive mineral ingredients supplied to it in a soluble state, and to put them into the most favorable condition for absorption.

To be sure, it was no unknown fact that soluble mineral ingredients are partially absorbed by the earth, and experiments had been made which showed that saline solutions, after their filtration through the earth, experience a notable change, and that part of the salt contained in them is absorbed. Yet, as far as the science of agricultural chemistry is concerned, Liebig, after a series of most trying and troublesome investigations, was the first to discover and to set in regular scientific order the effects of the natural law of absorption.

This discovery at once showed him the cause of his artificial manure's inefficiency. The deep emotion felt by him when he at last had reached the solution of this formi-

dable and most important problem may best be known from his own words:

"After having discovered the mysterious cause of my manure's inefficiency, I felt like a man who recovers from mortal prostration, and now, seeing and perceiving clearly this most natural law, my previous blindness seems quite inexplicable to me. Indeed, human intelligence is often singularly limited, and fails to perceive the nearest and simplest facts when they do not harmonize with one's preconceived order of thoughts. Having deprived the alkalis of their solubility, and imbedded them, by a melting process, into silicious or argillaceous earth, I had impeded their amalgamation with the soil and done everything in my power to weaken their action. Only then, after so many years, I understood the reason of my failure; every single mineral ingredient supplied to the soil produced its proper effect, but my own science had made them ineffective! Alas! I myself had done everything to impede the acknowledgment and the general propagation of my doctrine; I had been my own worst foe by the erroneous composition of the artificial manure, which otherwise might so much sooner have restored the fertility of the exhausted soil! I had sinned against the supreme wisdom of the Creator, by attempting a needless amelioration of his works. Struck with fatal blindness, I believed that one part of that wonderful system had been forgotten, which, by a constant and uninterrupted series of admirable natural laws, produces and maintains vegetable life on the surface of the earth. Feeble and impotent worm, I had thought it possible to redress an error made by the Creator!"

Often Liebig has been blamed for having changed his mind as to the best method of employing artificial manure; however, these reproaches cannot be considered as well founded. Liebig has simply confessed his former error in the most upright and dignified manner. The change caused in his opinions by the discovery of the original source of his practical failure was only natural.

Liebig's doctrine concerning the influence of mineral ingredients upon vegetable life (simply called Mineraltheorie," in Germany), has of late begun to conquer another large field of application, being more and more followed in the cultivation of forests, which gradually has been raised to the rank of a veritable science, and, especially in Germany, to a very high degree of perfection. However, as far as the scientific cultivation of forests and the application of Liebig's mineral theory to it are concerned, much is to be done still, and in the pursuit of this great task the sure leading hand and energetic will of the master himself are sadly missed by his pupils.

The influence of Liebig upon the investigation of animal life has in no wise been inferior to his researches into the mysterious processes which form the origin, growth, and decay of vegetable substance; his discoveries concerning the nourishment of human and animal organ-

isms are likewise founded on his extraordinary knowledge of organic chemistry, and, like his "Mineraltheorie," have opened entirely new paths for the progress of science.

Liebig's researches concerning animal life and the nourishment of animal organisms may be divided into two sections, of which the first embraces the mere chemical scrutiny and analysis of organic matter, to which operation the name of Organic Chemistry is generally given; the other, which embraces the science of physiology as well as of chemistry, determines the practical influence of the analyzed materials upon the animal organism.

Justus von Liebig discovered and proclaimed as the fundamental principle of nourishment that the chief ingredients of the blood are already existing in the food of man and animals, and that they experience but a very slight transformation when their original substance—vegetable matter—is changed into flesh and blood.

"The food of men and animals," says Liebig, "consists of two entirely different substances. One of them, which contains nitrogen and albumen, forms the blood and fleshy parts of the body, and consequently they are called plastic elements of nutrition; the other, which contains no nitrogen but fat and so-called hydrates of carbon, is in every respect like ordinary fuel, and maintains the elevated temperature which is remarked in every animal body; it is commonly called 'generator of caloric, or means of respiration.' Sugar, starch, and gum, belong to this class; they are nothing but transformed wood fibre, and the progress of chemistry has taught us to reverse the natural order of this chemical transformation, and to make sugar, starch, and gum out of wood fibre. But of all these substances which maintain the warmth of the body through the medium of respiration, fat or grease is predominant, and, as far as the amount of carbonic matter is concerned, nearly equal to the ordinary fossil coal.

"We literally heat our bodies with combustible materials, which are nearly identical with those which are employed in heating our stoves, and which differ from wood and coal in no other respect but in the fact that they are soluble in the juices of our body, which the latter are not."

The celebrated experiments made with the respiratory apparatus of our days, have somewhat modified these doctrines: but the modifications can not in any way lessen Liebig's scientific glory; on the contrary, it is only just, thankfully to acknowledge that the enlarged and augmented experience of modern times is due to the impulse and example given by him.

The importance of Liebig's other works concerning the rational improvement of cattle, and of his beneficial inventions of the extract of meat, the milk for infants, etc., is so well known in the whole world, that it is scarcely necessary to mention them. On the whole, we can say that

these inventions have been the basis of an entirely new science, unknown before Liebig—the science of Nutrition!

As to us, who are proud of having been his pupils, we are all convinced that we can not do more honor to his memory than by the imitation of his example. Like Liebig himself, those who have been initiated into the mysteries of nature by his powerful and indefatigable genius, will always endeavor to employ their knowledge for, and direct their attention toward, the benefit of humanity.

As an exterior token of gratitude, the erection of a national monument to Liebig has been proposed, and will soon be carried out, the idea having met with an enthusiastic reception from all sides, and contributions, not a few of them coming from America, having been collected for that purpose from every part of the globe.

But we repeat it, a "monumentum aere perennius" will be created to his memory by the progressive development and propagation of his ideas and inventions; such a monument will proclaim his works and merits to the latest generations.—*International Review.*

OUR PROGRESS IN ORNAMENTAL GARDENING.

By Walter Elder, Philadelphia, in *Gardener's Monthly.*

Our progress in ornamental gardening has of late years been marked by the introduction of many antique ideas. The Romans and Greeks were famous for their garden fantasies; and now these are finding imitators amongst us. They were fond of rustic arbors.—we have the form; but galvanized wire works furnish a substitute for wood, and also material for encirclings of the *basket flower beds* upon our lawns. Our numerous and improved species and varieties of climbers, and almost endless kinds of bedding plants, or ornamental foliage, make our fantasies far more pleasing than those of the olden time. Our *Basket Rosaries* bloom from May to November. Our abundance of fancy stones and shining, shells, make our artificial *Rockeries* pleasing. We have suitable plants for decorating old quarries, holes, craggy rocks, and walls that support embankments. Our terraced slopes are clothed with ornamental plants, for which there is a good selection. Even marshes can be made beautiful. Fountains with fish make admirable embellishments. Water birds make our larger ponds and lakes picturesquely beautiful. Decaying trees, with holes in their stems, are turned to account; ornamental plants set in the holes, often make unique oddities. Large old logs of trees, lying in some unsuspected nooks, hollowed like longboats, then

filled with rich compost and planted with ornamental things, are odd looking, and often please.

In a former article, I said, that we were well supplied with *vases, rustic stands and hanging baskets*, for growing curious and pretty plants in. Our *garden statuary* is yet very limited, but in that we shall increase as time passes on.

All the above, and other curiosities, should be introduced into our *large parks*, and some of them in public city gardens, as they give additional charms to other objects in ornamental gardening.

TRANSPLANTING EVERGREENS.

By E. Manning, in *Gardener's Monthly.*

As the season will soon arrive for tree planting, a few timely hints to the inexperienced may not be amiss. The subject selected is the planting and after management of Evergreens. Great interest is manifested at this time in this important branch, both in home adornment and for shelter. And why should it not, seeing the rapid destruction going on in our forests? If immediate attention be not directed to this important branch of our country's prosperity, our children will have to lament our neglect. The growth of trees is the work of time. Money will not buy forests where none exist. Already we perceive how much more windy and cold our country is getting as our noble forests disappear. Our Western neighbours in Illinois, are already alive to its importance. Look at the millions of Evergreens and Larches annually raised by our friends Robert Douglas & Son, of Waukegan. This shows conclusively there is a great demand for these beautiful and useful productions. Our Western friends have suffered long from want of attention to this important matter. With these few preliminary remarks I shall proceed to the subject.

After an experience of fifteen years, more or less, in Evergreen planting, I have found it invariably best to transplant Evergreens just at the time in the Spring that the buds begin to swell. If trees are properly moved and properly planted at this time very few will fail; but, as many others as well as myself have to get their trees frequently hundreds of miles away, the planting cannot always be done at the right time. In my experience I have had to plant sometimes quite early in April—over a month before the proper time. In this case the best and surest way is to protect the transplanted tree from the effects of cold winds, snows and hard freezing. For ordinary sized Evergreens, a flour barrel turned over the transplanted tree till the 15th of May in this latitude will pretty surely save it. Without this precaution it would be pret-

ty sure to die. My plan on receiving a bale of evergreens is to open it immediately, wet the roots with water, not too cold, and heel them in immediately in mellow soil till planted. Above all, never expose the roots of an evergreen to cold winds or sun. Most trees are benefitted by shortening in the branches. If the ground is dry, water when planted, and mulch. If the tree is well handled and planted it will usually make a pretty good growth the first season, and with ordinary care, pass the next winter uninjured. If it has made but a feeble growth the first summer it should be protected the following winter, as it is only an invalid. Many trees are saved by this precaution. Most Evergreens transplant readily and successfully if they have been well packed and carefully handled. Some nurserymen recklessly expose the roots to the sun or cold for hours. In all such cases the trees will mostly fail, or if they start at all, will be an eye sore, and die the following winter.

WINDOW GARDENING.

Fifty years ago plants were commonly grown in cottage windows, those more generally employed being *Fuchsia globosa*, *Fair Helen Geranium*, *Musk*, several *Mesembryanthemums*, *Cactuses*, and *crimson China Roses*. More recently, the newer varieties of *Calceolarias*, *Fuchsias*, *Campanulas*, *Balsam* and *Pelargoniums* have been employed, while, at the present time, we employ, *Figs*, *Palms*, *Ferns*, and the very choicest of exotic plants for the indoor decoration of dwellings, not only in the quiet country, but also amid the dust and bustle of the busy city. We gladly welcome any work that contributes to the wide-spread influence of domestic floriculture, an influence that contributes so much to our comfort and happiness in a smoky atmosphere of a town residence. Looking at the subject from a commercial point of view, we find many large establishments devoted entirely to the culture of decorative plants in small pots, while thousands of pounds are spent yearly in London for the pretty little decorative plants so often met with in the window cases and apartments of town mansions. We look on the decoration of our dwellings with healthy plants and fragrant blossoms as the sign of a more healthy appreciation of nature; as the embodiment of all that is beautiful and attainable in art. We have several very flourishing window gardening societies established, not only in the metropolises, but also in other large cities and towns, as Hull, Manchester, Nottingham, and Sheffield. Window gardening is evidently becoming quite as fashionable an amusement for ladies in America as it is with us here at home, and Mr. Robinson's work seems calculated to forward progress

in this direction, and is full of the most varied information with regard to the culture and arrangement of the various plants most generally used for window and room culture.

One advantage which American house gardeners have over our English friends is that they can plant so many of their pot plants out in the open air in summer. Indeed not only window plants but large numbers of greenhouse plants can be treated in the same way; of course some care has to be taken in the fall, when they have to be put into pots again, but this is no great difficulty. As for unhealthy pot or tub plants, such for instance as gardenias, oranges or lemons, oleanders, pittosporums, camellias, azaleas, or any thing of this class, there is no better way of treating them medicinally [surgically] than to cut them back severely, and plant out into rich garden soil. It is always best in these cases to leave some green leaves and young twigs. If cut down to old bare stems, once in a while, they will not break again.—*The Garden.*

THE HORSE.

Cleveland Bays are justly esteemed for their great exertions in the coal and lime season. The weight carried, distance travelled, and time this is performed in, for several weeks together, are certain proofs of their activity, strength, and hardiness. Their colour is mostly bay; and their form is such, that the mares, put to a full-blood stallion, breed excellent hunters and saddle-horses; and, to a half-blood horse, capital coaches or carriage-horses. The breed of saddle-horses is confined, in a great measure, to Yorkshire, Durham, and Northumberland. The East-Riding of Yorkshire has been long eminent in that line. The annual fairs held at Northallerton, Howden, and York, exhibit the largest shows of these useful creatures. Perhaps it may be owing to this that Yorkshiremen are in general called jockies, or knowing hands in regard to horses; and, indeed, you will scarce meet with a farmer in that country, especially in the low part of it, who is not skilled in them. Since bay and other light-going horses have been preferred to the black breed for carriages, the Yorkshire breeders have gone so much upon these, that the old breed of riding or saddle-horses is much worn out. This is owing, perhaps, not only to the greater demand for the latter, but also to the coach-horses being a stronger and larger breed, so that if they happen from blemishes, not to answer for the harness, they suit for the plough or cart, while the saddle-horse, from the same misfortune, is rendered in a great measure useless. The heavy black horses are almost universally bred through the midland counties, particularly Leicester-

shire, Warwickshire, and Devonshire. It is the universal custom, in those districts, for the farmers to use the mare only for labour; these are all put to the horse, the male produce of which supply the army, London, and most of the south and western counties with horses for their farming teams. The largest go the capital for dray-horses, the next supply the farmers in the southern counties for their waggons, ploughs, &c., and the rest mount our cavalry, or are trained for carriages, while a few of the choicest are very properly preserved for stallions. The vanity of many of the farmers of the south, in regard to their teams, is most extraordinary. In Berkshire, and that neighbourhood, you will frequently meet a narrow-wheeled waggon, with six stallions, one before the other. The first horse, besides having on a huge bridle, covered with fringe and tassels enough to half load a common Yorkshire cart-horse, has six bells hung to it, the next five, and so on to the last, which has only one; and it is really diverting to see with what a conceited air the driver struts and brandishes his long whip. A strange contrast this, with the poor Highlander carting home his peats for winter fuel, when frequently both horse and cart are not of the same value as the harness used on a Berkshire waggon-horse. The reader will not be surprised, when I answer him, that I have, in the north of Scotland, many times seen a horse and cart conveying peat or turf, when the whole apparatus contained neither iron, leather, nor hemp. The collar, or "brecham," was made of straw, the backband of plaited rushes, and the wheels of wood only, without bush of metal or binding of iron. But the present system of farming requires horses of more mettle and activity, better adapted for travelling, and more capable of enduring fatigue, than those above mentioned. It is long since I was told by the Cleveland farmers, that the black horse could not stand the work, nor go at the rate of their own country horses—that whenever they were put past their pace, they greased, and frequently went blind. Yet it is in this industrious part of Yorkshire, and in Norfolk, Suffolk, &c., that we must look for farming horses able to go through fatigue and hardship, able to walk at a pace that others cannot, and able to work six days in every week in the year. It is a well-known fact, that these will, upon an average, wear as long again as the rough fleshy-legged black breed. The best and hardiest horses for the draught I ever remember to have seen, proceeded from a cross between the country mares by the Tees' side, and a foreign stallion. They are not tall horses, rising only from about fourteen hands three inches to fifteen hands three inches, exceedingly strong made, with short clean-boned legs, very

firm carcasses, and equal to any fatigue. The Welsh horses are a very hardy breed, but rather small for the team; but when they are good goers, few or none can equal them for the road. None stand our turnpikes like them; and I well remember one that I rode for many years, which, to the last, would have gone upon a pavement by choice, in preference to a softer road. The Scotch horses, like the Welsh, are exceedingly hardy, but too small for the draught, except the Clydesdale horses, &c., taken notice of before. Those properly called Galloways are now rarely to be met with, from an inexcusable inattention to the breed, which is nearly lost. From their name, we may suppose, they originated from the county of Galloway, and, it is generally said, were owing to crossing with the Spanish horses, when a part of the invincible armada was shipwrecked upon those rocky coasts. There is much probability in the account, but whether true or not, is not so material, and the loss of so valuable a breed of little horses is to be lamented.—J. W.

ANNAPOLIS CHEESE FACTORIES.—Mr. W. B. Troop, M. P. P., writes to the *Bridgetown Monitor* to draw the attention of the public to the value and operations of the Cheese factories in the County of Annapolis, by giving an account of the business done by the Granville Factory, in five months of the season of 1874:—

Total number pounds of milk manufactured.....	403,270
Total number pounds of Cheese manufactured.....	33,738
Average pounds of milk to pound of Cheese.....	10.27
Average price per pound of Cheese at Factory.....	13 cts.
Net price per 100 pounds milk to shareholders.....	\$1.06

The above Factory is the only one in the Western half of Annapolis County. In the Eastern half are seven others, most of them larger, and, from the best information, they manufacture about one hundred and sixty tons during the season, which shows a cash value of about forty-six thousand dollars, from only a part of the dairy of the County in five months.

FRUIT CROPS.—The prospects for fruit growers in the States are very discouraging. Grapes are very generally killed in Ohio; blackberries in the Eastern States. The strawberries were dried up by the drought, and prices hardly averaged ten to twelve cents per quart. Pears were badly cut by late frosts. Mr. Bateham writes from Ohio: "Our apples and pears will be a very short crop, as well as the smaller fruits generally. I have never seen so poor prospects for fruit growers."

Reports of Agri. Societies.

THE ANNUAL REPORT OF KING'S COUNTY AGRICULTURAL SOCIETY FOR 1874.

(Continued from last No., p. 352.)

POTATOES.

Late reports in connection with the potato are not satisfactory. Although you went into the planting business with your usual aptitude, under the most favorable conditions of weather and ready soil, it does not appear that the average was increased over that of the previous season. Information obtained from various sections, though much diversified, leads to the conclusion that the crop has suffered by disease a diminution full one-third. The effect has been observed principally in the late varieties. With early kinds, on light soils, the results were the opposite. The Early Rose appears to have given general satisfaction, and its culture is rapidly extending. It is a strong robust grower in sandy loam, and, with extra attention, the yield is often a pleasant surprise. The crop should be lifted when it is sufficiently matured to bear handling without injury to the skin, which, if planted early in May, will be the last of August; if allowed to remain in the ground after that period the chances are that you will experience a grievous surprise. "It is better to be sure than sorry."

Any attempt to grow the new varieties that have been introduced of late years, in ordinary soils, scantily manured, is only trifling with the tubers. The potato requires plenty of manure, and so applied that the plant during the different stages of its growth may receive an abundant supply of nourishment. The Early Rose has been experimented with for the last six years, with varied success. The greatest yield noted was in the year 1870, the product of five and a half rods weighing 1380 pounds of clean bright potatoes, all perfectly sound. A foot note appended gives the following:—"This is considered a remarkable yield, and has created some curiosity, but not to any alarming extent, as the great yields of fifty years ago are still fresh in the memories of some who came to view them."

The Early Vermont is a new variety of recent introduction; it is said to be a cross of the Jackson White and Garnet Chili. This new seedling bears a close resemblance to the Early Rose in habits of growth and general appearance of tuber, so alike are the two that it would puzzle an expert to tell the difference. This coincidence is unfortunate, as its identity will be merged in that of the Rose. It is said to be earlier, a week or ten days, than its *congener*, perhaps so; of this we have no definite proofs. The past season the Vermont was treated to a

novel mode of culture, which increased the product to a sensible degree. The process was simple. Three rods of ground were selected for the experiment, on which beets had grown the previous season, the soil was not disturbed further than to open trenches a spade in depth, and three and a half feet apart; manure from the barn-cellar was spread evenly in each to the depth of three inches, the seed prepared with two fair eyes to a set, and distributed in each drill a foot apart, and covered with two inches of mold. The spare earth from the trench was leveled with a coarse rake which left the drills slightly depressed over the seed; on making their appearance a cultivator was run twice through each row gaged to two inches. The cultivation was continued once a week, until the vines interfered, they were then earthed up with a hoe and left until the last week in August. The yield was five hundred and ninety-four pounds (594) of first class table potatoes, perfectly ripe, uniform in size, and, in quality and appearance, equal to those grown in burnt land. The Garnet Chili is another seedling worthy of attention; for exportation it is rated superior to the Prince Albert or Calico; on soil adapted to its requirements it promises to be a leading variety. In planting potatoes we suggest the necessity of giving greater space between the rows, which will admit of a more extended and thorough cultivation, also a more liberal supply of barn-yard manure, that from neat cattle is to be preferred. A few experiments with some of the early varieties on suitable ground will do more to convince you of their real worth than a ten acre patch of diseased tubers.

Bona fide members of this Society will receive one pound of the Early Vermont, on application to the Secretary, (George Hamilton, Esq.) as a specimen for trial, on the understanding that a correct statement is to be rendered to the Secretary of the yield in pounds, character of soil, and mode of treatment.

FRUIT.

This subject presents greater attractions to the horticulturist than to the farmer. The fruit-grower is generally more enthusiastic, devoting his time and patience to a special object. It is not essential that farmers should be growers of fruit other than *pomme de terre*, their time can be fully occupied with the labours of the field and the care of their stock, but it is essential that horticulturists should possess a knowledge of some of the first principles of agriculture. The husbandman is indebted to horticulture for many of the vegetable products that he now cultivates—the different varieties of fruit, large and small, also many of the ingeniously contrived implements adapted to fine culture. Your method of

farming is not exceptional, it is peculiar to many districts of the Province. You have a multiplicity of special objects always on hand, often so many that you are "put to your trumps" to know what to do with them. Indeed, your method may be styled a thoroughly mixed husbandry; these innumerable special objects demand unusual attention, and skill, and judgment, and quickness, and—and—and everything, the *highest intellect*. The officers, conscious of their very limited knowledge in this multiple mixed method of farming, which clutches in its grasp the culture of fruit with its mysterious complexities, approach the subject with much diffidence, but, aware of the great importance of this industry, and the interest that many members of this Society take in the propagation of the different kinds of fruit, we feel constrained to present a few remarks relative to the subject. To announce the fact of a full crop of apples the past season, would add nothing to your stock of knowledge, but to proclaim that two-thirds of that fruit, from a commercial point of view, was worthless would perhaps start your ideas some. Growing fruit is one thing, selling is another, and as long as the home market was equal to the supply, to the vendor the character of the fruit was rarely a disturbing element, although to the consumer it would often prove a fruitful source of elemental ejaculation. The home market is getting shaky under the annual increasing quantity of fruit, and other ways for the distribution of apples will have to be sought out. For varieties having a commercial value, the foreign market presents a broad field, and a few venturesome gentlemen have made occasional explorations, with what success we are not prepared to say, but we think the thanks of orchardists due to men who have made an attempt to introduce Nova Scotia apples into the markets of England. In the foreign markets there is no playing "possum;" you will have to deal with men of peculiar intellect, we won't say that they will attempt to cheat, but they will make you walk straight, and any sideling from the narrow way only adds to the expense. If the barrels or packages are faulty, which too frequently is the case, in size, weight and general appearance, or carelessness in packing, loose and of uneven size, or nomenclature, with the innumerable other little things that jog along in connection, the whole transaction is faulty, and when the bill of sales is handed over, the balance that you have been suffering to see, if it don't give you the lock-jaw, may prove a lasting source of particular grief.

It does not appear that much progress has been made in developing new and useful varieties, or that we have evinced any great desire to add to our stock of

winter fruits, which some prefer to mark as "spring or long-keepers." In the selection of varieties, our aim has been to get size and colour, overlooking real worth, and our better judgment has been too frequently influenced by the tree agent's portfolio. There is a little too much puff-ball in connection with our fruit; in the amateur ring we shine with selected specimens of our autumn beauties, but in the commercial ring we are at a discount.

Members who contemplate extending the area of their orchards by the addition of trees, and those in the incipient stage of the business, would do well to exercise judgment when selecting varieties. At present we have no list of fruits that are adapted to the varying circumstances of soil and situation; until such a list is furnished it would be premature to make any special reference further than to notice a few standard winter kinds, such as, Nonpareil; the Incomparable, so extensively grown in Annapolis County; Baldwin, a general favourite and profitable market apple; Rhode Island Greening, an old variety always acceptable and succeeds well in a great many situations; Northern Spy, not always reliable, not an early bearer, and needs the best of culture; Yellow Bellflower; Cinnamon; Bishop Pippin, no orchard should be without this valuable apple, which, with fair usage, is not particular as regards soil or situation.

In the autumn class may be mentioned Gravenstein, this apple is said to have originated at Castle Gravenstein, in Halstun; it has been over thirty years in the country, and has given great satisfaction wherever grown, tree hardy and prolific, it kept long loses its flavour. It is surprising that this famous apple has not been more extensively disseminated. Its compeer, the handsome Chenango Strawberry, promises to become one of the best (autumn apples), preferred by some to Gravenstein, and is gradually making its way to the front. Maiden's Blush, not much grown, a profitable fruit, and for drying is not excelled by any other, tree hardy, productive and early bearer. Summer varieties are of small account; you know all about that, the imported article suits that ground best, so we leave it.

Varieties of fruits have piled up pretty respectably of late years, so much so that the inexperienced cultivator is much perplexed to make a selection, and, no doubt, is inclined to wish the heap conspicuously reduced. Your better guide will be to endeavour to ascertain what sorts meet with the readiest sale in the markets having special reference to the foreign, and what kinds succeed best in your neighbour's grounds. With respect to trees, the opinion is gaining in favour of those raised in the nurseries of the Pro-

vince, or still better in your own immediate locality. A ready method of advancing an orchard is, where practicable, to set seedlings of four years old and upwards; one year will be sufficient to establish their roots, they may then be grafted at the desired height using such varieties as you desire to propagate. The selection of trees and varieties for a plantation is a most essential point, and it is well to consider the uses to which the fruit is to be appropriated, and select accordingly. If the intention is to establish a commercial orchard, varieties should be chosen adapted to the markets designed to be supplied. If a family orchard, a more varied collection will be requisite, and in this you may consult your own taste without reference to your neighbour's palate. There will be apples wanted for sauce, for baking, for drying, and all kinds of palatal fruition; the quantity for cider will perhaps be governed by your temperance proclivities. The probable size of the family will likewise have to be considered, and due allowance made for grand-children; little people consume some apples, and you may safely calculate on a peck for each young one every twenty-four hours from August to May. If the household should number five daughters and five sons, which, taken every way, is a fair average, possibly three acres with the interstices filled with pears, plums and sundry small fruits, would afford a reasonable supply.

As the greater portion of the members of this Association are interested in fruit culture, and some extensively so, we desire before closing our remarks, to direct attention to a subject which we deem worthy of consideration. It appears to be almost a unanimous conclusion that the Yellow Newton Pippin, the "American Apple," of world-wide notoriety, can not be grown in Nova Scotia to anything more than ordinary fruit. The same has been said of a good many other things, "it can't be did." We are not disposed to cave in under this negation, without some attempt to know whether this credulity is based on fact. We have soils eligible for all fruit trees, when well managed, and if this famous fruit requires anything peculiar in treatment, such as soil, stock, or situation, let us make an effort to know it. You have plenty of trees that require touching up, and we recommend all who appreciate the value of a first-class apple to appropriate a few to the experiment. One successful branch will be worth more to the country than the annual grant to the Board of Agriculture. We also wish to call your attention to *Winter Pears*, particularly to varieties that will yield without flinching. We do not wish to insinuate that you have too many autumn varieties, but you have some to which soil and situation are not congenial, most of you plant them

but do you all reap benefit from the grove? If you can get hold of a few varieties that will keep and ripen as readily as some of your first class winter apples we advise you to do so. There are good pears to be had that will keep nearly all winter, viz.: Easter Beurre, d'Alencon, Lawrence, Princess St. Germain, Winter Nelis (early winter), one of the best. If you make it your business to grow these in quantity—say barrels of them—you would find a ready market at your own gate, without having to run to your neighbour's gate to dispose of them.

The Society now owns one superior bull, two rams, two boar pigs, and a number of farm implements.

The officers for 1875 are: Wm. H. O. Haliburton, *President*; Thomas Tuzo, *Vice Pres.*; John Simson, *2nd Vice Pres.*; George Hamilton, *Sec'y and Treas.*; Edward McLatchy, *Asst. Sec.*; Nathan L. Fuller, Samuel Palmeter, George C. Johnaton, Edward R. Bishop, George C. Graham, *Committee*.

All of which is most respectfully submitted,

CHARLES REED,
WILLIAM FALKNER,
NATHAN L. FULLER,
NATHANIEL FALKNER,
GEORGE C. JOHNSTON, } *Committee*
or
} *Directors.*

The King's County Agricultural Society, to George Hamilton, *Sec'y and Treasurer:*

1874.	Dn.	
To balance rendered 31st Dec., 1873.....	\$	68 24
To paid Charles Reid, keep of Pig 3 months		9 00
" " Fredk. Borden, keep of Bull 1 year		63 00
" " J. A. Haliday, printing Hand Bills in 1872, omitted.....		1 50
To paid Nath. Faulkner, keep of Pig 3 mos.		9 00
" " so much charged by the Central Board for "Journals".....		4 00
To paid J. A. Cogswell, for Hand Bills....		1 25
" " Charles T. Fritze, use of Hall.....		2 00
" " Andrew Borden, use of Hall.....		2 00
" " Joseph B. Bowser's bill expenses incurred by him.....		5 26
Allowance to Sec'y., stationery and postages		8 00
To paid Edward M. Cose's bill services of Bull.....		1 25
To paid Nathaniel Faulkner's bill for a Pig purchased.....		19 00
To paid John A. Taylor, for a Boar Pig purchased.....		18 00
To paid John A. Taylor, for keep of Pig one month.....		4 00
		\$215 50

1874.	
By Cash from Charles Reid, services of Pig.	\$ 3 25
" " from George Hamilton, for Pig purchased.....	10 20
By Cash from Fredk. Borden, services of Bull.....	21 50
By Cash from Fredk. Borden, for services of Ram.....	55
By Cash from Nathaniel Falkner, services of Boar Pig.....	2 00
By Cash from Nathaniel Falkner, for a Pig he purchased.....	11 00
By Provincial Grant for 1873.....	61 54
By Cash from George Hamilton, use of Ram	25
" " from Jas. Elderkin, use of Ram...	80
" " from Jas. Elderkin, for services of Ram.....	50
By dues from members.....	45 00
By Cash from Edward M. Cose, use of Ram in 1873.....	75
By Cash from Enoch A. Forsyth for dues...	1 00

Balance due Secretary and Treasurer..... 55 91
 Grant for 1874, less amount subscribed to Exhibition fund, not drawn. E. E. G. HAMILTON, Sec'y. and Treas.

RIVER JOHN AGRIC. SOCIETY, CO. PICTOU.

RIVER JOHN, Feb. 22nd, 1875.

At a meeting of the River John Agricultural Society, held in McKenzie Hall, Jas. Langell was appointed Chairman, and Robt. Sutherland, Secretary. The meeting, regretting that they allowed the regular term of meeting to pass, do now resolve to proceed to elect their officers, and do the business of the regular Annual Meeting. The following officers were then duly appointed:

John McLean, *President*; Jas. R. Langell, *Vice-President*; Robt. Sutherland, *Secretary*; John McKenzie, *Treasurer*; Abraham Langell, Nelson Sutherland, Jas. J. Stramburg, Wm. McIntosh, Geo. Gordon, *Directors*.

David Matheson, Esq., of Pictou, was then nominated for appointment to the Central Board.

ROBERT SUTHERLAND, *Sec'y.*
 JAMES LANGELL, *Vice-Pres.*

Treasurer's account of River John Agricultural Society for 1874:

1873.	Dr.	
To paid Jas. Stramburg Bull services.....		\$ 6 00
" " Christy Langill note of hand for borrowed money to purchase stock.....		56 70
To paid Abraham Langill keeping Bull.....		4 00
" " Robert Sutherland services.....		2 00
" " Jas. Langill keeping Bull.....		7 00
		\$75 70
Amount to Balance.....		9 93
		\$85 63

1873.	Cr.	
By cash from last year.....		\$ 3 01
" " Provincial Grant.....		46 62
Less for Journals.....		4 00 43 62
Subscriptions of members for year.....		40 00
		\$35 63

1874.
 By balance on hand..... \$9 93

LOWER MUSQUODOBOIT AGRIC. SOCIETY.

The annual meeting of this Society was held on the first Tuesday of December, and I am happy to say it never was in a more flourishing state than it is at present, since its formation 23 years ago. As long as we continued the practice of purchasing seeds we made no headway, but when we turned our attention to purchasing thorough-bred stock quite an interest was taken in the Society. The bull "Tichborne" that we purchased from the Central Board two years ago has given good satisfaction. We are looking forward to another importation by the Central Board.

Last September we held a Local Exhibition, though the season was unfavourable for roots, yet it was a very respectable affair. Thanks to some friends in Halifax, who gave so liberally to our exhibition fund. At a meeting held shortly after the Exhibition, it was agreed to hold another one next autumn.

The following persons were elected for

the ensuing year:—*President*, Donald Archibald, M. P. P.; *Vice-President*, Thomson Bull; *Secretary and Treasurer*, Charles N. Sprott; *Directors*, J. R. McCurdy, John Cruickshanks, Andrew Cruickshanks, Arthur Gladwin and Wm. Sedgewick.

Colonel Laurie was nominated as a representative of the Central Board.

The following is the Treasurer's acct.:

RECEIPTS.	
Balance.....	\$19 95
A Grant, less \$4 for "Journal," and \$7.46 for barley.....	70 05
10 members.....	10 00
Received from A. Anderson, \$12, A. G. Jones, M. P., \$15, and J. B. Elhott, \$4.....	31 00
Prize for bull Tichbourne at Halifax Exhibition.....	15 00
Services of Bull.....	1 50
Received from members.....	85 50
	\$233 00

EXPENDITURES.	
Paid for keeping stock, taking bull to Exhibition at Halifax, sitting up place for Local Exhibition, &c.....	\$76 29
Paid prizes at Exhibition.....	87 75
	\$164 04

Balance on hand..... \$63 96
 CHARLES N. SPROTT, *Secy.*

WALLACE AGRIC. SOCIETY, CO. CUMBERLAND.

The annual meeting of the Wallace Agricultural Society was held Dec. 1st, 1874, in accordance with the Act for encouragement of Agriculture. The President in the chair.

The proceedings of the Society for the past year being read, the Treasurer and Secretary submitted the following financial statement of funds of the Society, which was approved:

Balance from late Treasurer.....	\$24 32
Provincial Grant, \$42.55, less balance due Central Board, \$16.54.....	26 01
Subscription of 41 members.....	41 00
Received for young pigs sold.....	11 80
	\$103 13

Paid for keeping bull winter, 7½ mos., at \$4.....	\$30 00
Paid for keeping bull summer, 6 mos., at \$5.....	30 00
Paid for White Chester Boar.....	11 00
Incidental expenses.....	6 50 77 50
	\$25 63

The officers for the ensuing year were elected as follows:—*President*, Nathanael Stevens; *Vice-President*, Wm B. Huestis; *Treasurer*, John W. Morris; *Secretary*, John Robertson; *Directors*, Samuel Brown, James Annas, James Huestis, John A. Steele, Ichabod Betts.

William B. Huestis, Esq., was nominated Representative to the Central Board for District No. 4.

The stock owned by the Society is one Devon Bull, and this fall a White Chester Boar was purchased.

The Society purposes that as soon as the funds will admit, to expend it in the further purchases of thorough-bred stock.

The crops in this district are over an

average. The hay crop was heavy, the wheat and oats crops were good, both in yield and quality. Potato crop about an average, &c.

JOHN ROBERTSON, *Sec'y.*
 Wallace, December 28th, 1874.

Advertisements.

SCHOOL GROUNDS, &c.

NO. 1. Prizes of \$25, \$15 and \$10 will be given to the three Public Free School Grounds in the County, of not less than half an acre in area, best protected by evergreen hedges.

2. \$20, \$10 and \$5 for best three dozen named Apples, (not duplicates), grown in any Public Free School Grounds of the County. Trees planted since 1870. Apple Trees from Pilling's Nursery, planted in Joseph Burrill's grounds last May, bore fruit last season; many of them will bear dozens of apples this year.

3. \$25, \$15 and \$10 will be given at the next Annual Exhibition of the County Agricultural Society for best three Bouquets, composed solely of flowers grown as above. No School to receive more than one prize, but may compete for all—Vick's Floral Guide for 1875 supplied gratis to any School in the County, on application to C. E. Brown.

4. \$5, \$3 and \$3 for the best three quarts or named Strawberries grown as above this season—duplicates not allowable. Notice of competition to be sent to C. E. Brown, in June, and Strawberries to be brought to L. E. Baker's office on the fourth Saturday in July. One of our largest growers asserts that his best crop was from plants set the same spring.

5. \$20, \$15 and \$10 to the three Schools or Grounds provided with best Gymnastic Appliances, within two years.

6. \$10, \$3 and \$2 to the three Pupils of whom the most meritorious act towards a school-fellow or a teacher may be recorded in 1875.

7. \$25, \$15 and \$10 for the three best Essays on above series of prizes, by any teacher of the County.

Prizes in Nos 1 and 2 open for five years, if not awarded before. In 1, 2, 3 and 5 notice of competition to be sent to the Inspector of Schools in August; entries to be made for, and prizes will be awarded at the following Annual County Exhibition. In 6 and 7 awards will be made by the undersigned at the close of the year.

CHARLES E. BROWN.
 LORAN E. BAKER.

Yarmouth, April 29, 1875.

Ground Bones! Ground Bones!!

CHEAP, PORTABLE, LASTING IN EFFECT.

The most efficacious Fertilizer for every kind of crop.

With a view to meeting the growing demand for this very valuable Manure, the Proprietors of the Wellington Tannery are now completing their arrangements for supplying the above, early in May.

Prices, delivered at Wellington Station:

¾ in. Bones.....\$24.00 per ton.
 Fine ground Bones..... 30.00 per ton.

Bones will be packed in barrels or puncheons. Orders for any quantity, from one barrel upwards, will receive prompt attention and despatch.

Intending purchasers are requested to forward their orders as early as possible to the Manager.

WELLINGTON TANNERY,
 Oakfield, Halifax Co.

WANTED.

By the Union Agricultural Society of Pugwash, a Pure Bred Short Horn Durham BULL, one or two years old; or a Devon of the same age. Persons having such animals to dispose of, will please correspond with the subscriber, stating age and price. Pedigree must be warranted.

THOS. A. FRASER, *Sec'y.*