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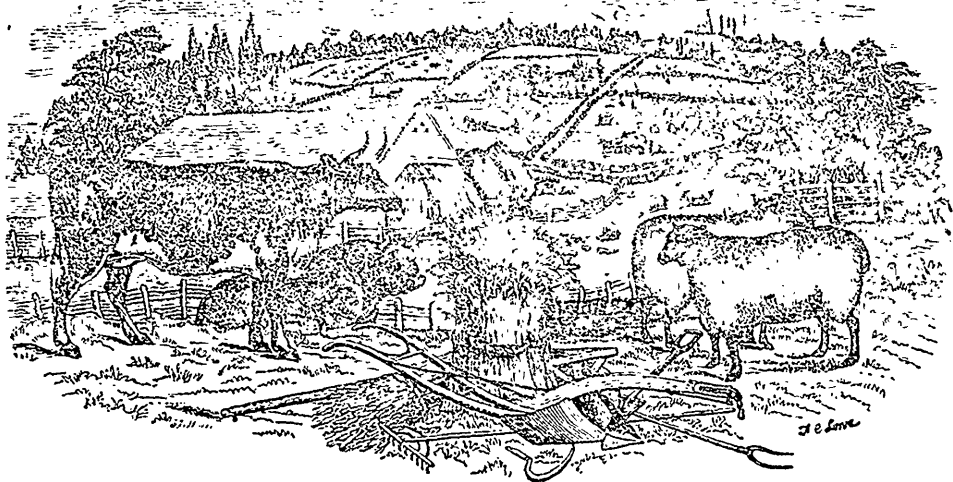
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CANADIAN AGRICULTURIST.



"The profit of the earth is for all; the King himself is served by the field."—ECCLES. v. 9.

GEORGE BUCKLAND, }
WILLIAM McDUGALL, }

{ EDITORS AND
{ PROPRIETORS.

VOL. I.

TORONTO, OCTOBER 10, 1849.

No. 10.

The Canadian Agriculturist,

A MONTHLY JOURNAL OF AGRICULTURE, HORTICULTURE, MECHANICAL AND GENERAL SCIENCE, DOMESTIC ECONOMY & MISCELLANEOUS INTELLIGENCE: Published by the Proprietors, W. McDUGALL and GEO. BUCKLAND, on the first of each month, at their Office, near the South-west corner of King and Yonge Streets, Toronto.

Subscription ONE DOLLAR, *in advance*. Advertisements 4d. per line each insertion.

Societies, Clubs, or local Agents ordering twelve copies and upwards, will be supplied at 3s. 9d. per copy.

Money, enclosed in a letter, and addressed to the "Editors of the Agriculturist, Toronto," will come perfectly safe. As we shall employ but few agents this year, those who wish to pay for the last, or subscribe for the present volume, need not wait to be called upon.

Payment *in advance* being the only system that will answer for a publication so cheap as ours, we shall send the remainder of the volume to none but those who order and pay for it.

LOCAL AGENTS.—Any person may act as local agent. We hope that all those who have heretofore acted as such, will continue their good offices, and that many others will give us their influence and assistance in the same way. Any person who will become a local agent may entitle himself to a copy by sending *four* subscriptions. Those sending *twelve* and upwards will be supplied at 3s. 9d. per copy.

MESSRS. DENISON & DEWSON, Attorneys,
&c., New Market Buildings, Toronto.
January 26, 1849.

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FOR SALE, an extensive collection of FRUIT TREES, consisting of all the choicest sorts of Apples, Pears, Plums, Cherries, Peaches, Grape Vines, Raspberries, Gooseberries, Strawberries, Currants, Asparagus, and Rhubarb Root, &c.

Also, Ornamental Trees, Flowering Shrubs, Hardy Roses, Herbaceous Flowering Plants, &c., in great variety.

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GEORGE LESLIE.

March, 1849.

4

CASH! CASH!! CASH!!!

THE Subscriber will pay the highest Cash Prices for 1000 bushels clean Timothy Seed; 100 bushels clean Spring Tares; 100 bushels White Marrowfat Pea and 25 bushels Flax Seed.

JAMES FLEMING,

Yonge Street,

Seedsman and Florist.

Toronto, Jan. 1, 1849.

1

WM. McDUGALL,
ATTORNEY, SOLICITOR, &c.,

South West Corner of
KING AND YONGE STREETS,
TORONTO.

Deeds, Mortgages, and other Legal Instruments,
promptly prepared.

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AT AUCTION.**

THE Subscriber will offer on the 13th day of October next, at 1 o'clock, P. M., at his Farm, from 30 to 40 head, being about one half of his present herd.

Their Breed is mainly the best Improved Short-horned, crossed with the Amsterdam Dutch—selected and bred expressly by the subscriber with reference to milking qualities.

They consist of Cows, two-year-old Heifers, one-year-old Heifers, Heifer Calves from one to ten months old, and several Bulls.

Cows and Heifers old enough, are in calf to the proper bulls.

A credit of six months will be given on all sums over fifty dollars, with interest, on satisfactory paper.

Stock purchased to be sent a distance, will be delivered by the subscriber on shipboard or rail-car, in the city of New York, free of risk and expense to the purchaser.

A Catalogue and description of each animal, will be given on the day of sale.

The awards of Premiums by the American Institute, and Westchester County Agricultural Society, give evidence of my success as a Breeder.

Conveyances will be in waiting at Fordham Depot, Harlem Railroad, to convey persons to the Sale.

L. G. MORRIS.

Mount Fordham, August, 1849;
Eleven miles from the City of New York, by
Harlem Railroad.

Should the weather prove stormy on the day of Sale, it will be postponed until the next fair day.

**THOROUGH-BRED STALLIONS
FOR SALE.**

THE Imported Horse PANMURE, got by Gen. Grosvenor's celebrated horse *Glaucus*, and out of Lord Chesterfield's celebrated mare *La Bayader*.

Also, the three year old Horse KINGSTON, got by imported *Pannure*, dam *Miss Barrie*, by Sir R. Barrie's imported *Daghee*, granddam *Sally Walker* by imported *Roman*, great-granddam by *American Eclipse*, g.g.g. dam by imported *Messenger*. *Miss Barrie* took the first premium for thorough-bred Mare at the Provincial Show for 1849.

PANMURE has proved himself an excellent Stock-getter in the Midland District.

The young Horse KINGSTON took the first premium for three year old thorough-bred Stallion at the Provincial Show of this year. Another colt by the same horse and dam, took the first premium for two year old thorough-bred Stallion; and some of *Pannure's* colts by common mares also took premiums at the same Exhibition.

For further particulars apply to the Editors of the *Agriculturist*, or to G. A. CUMMING, Esq., Kingston, C. W.

October 1, 1849.

TO BRICK MAKERS.

AN excellent opportunity offers itself for the purchase of an improved BRICK MOULDING MACHINE, with horse power, capable of Moulding from 20 to 30,000 Bricks per day.

ALSO:

TWO CLAY TEMPERING MACHINES, on a new principle, each Machine can temper a bed of clay, at one time, sufficient for 12,000 Bricks.

Apply (if by letter, *post-paid*.) to
ROBT. BEEKMAN, AGENT,
No. 6 Wellington Buildings.

Toronto, 6th September, 1849.

9-tf.

NEW CARRIAGE FACTORY.

WILLIAMS & HOLMES,

HAVE REMOVED their *City Carriage Repository* to 142, Yonge Street, where they have commenced a *Manufactory* in all its branches. Parties wishing to purchase for Private or Public Business, are requested to give them a call before purchasing elsewhere, as their facilities are such as to enable them to manufacture cheaper than any other Establishment in Toronto.

Toronto, January 1, 1849.

1-tf

N.B.—The public are respectfully invited to an inspection of their Lumber and other Building Materials, as none but the very best will be used.

MAMMOTH HOUSE,

Removed to the Store next door South of Mr. Elgie's Tavern, Market Square.

THOMAS THOMPSON is happy to inform the Public, that, by the praiseworthy exertions of his friends, he has saved from the destructive *Conflagration of 7th April*, staple and fancy DRY GOODS, GENERAL CLOTHING, HATS, CAPS, BOOTS, SHOES, &c. &c., to the amount of upwards of \$15,000! partially damaged, which will be sold at a great sacrifice. The above Stock, with the early *Spring Arrivals* now opening out, will comprise a splendid assortment of *cheap and fashionable Goods*, the whole of which he is determined to have cleared out previous to his re-opening the new Mammoth House.

Toronto, 17th April, 1849.

**PHENIX FOUNDRY,
No. 58, YONGE STREET, TORONTO**

GEORGE B. SPENCER,

(LATE C. ELLIOT.)

CONTINUES every Branch in the above Establishment, as heretofore; and, in addition, keeps constantly on hand a good assortment of Cooking, Parlor, Box, and Air-Tight Stoves, of the most approved patterns.

Also, a Second-hand Engine, with or without the Boiler, Twelve-horse Power, will be sold very cheap for Cash or short payment.

Toronto, Jan. 26, 1849.

1-tf

STOVES! STOVES!! STOVES!!!

**J. R. ARMSTRONG,
CITY FOUNDRY,**

No. 116, Yonge Street, Toronto,

HAS constantly on hand Cooking, Box, Parlour and Coal Stoves, of various patterns and sizes, *very cheap for cash*.

Also, a New Pattern Hot-air Cooking Stove, just received, taking three-feet wood, better adapted for this country than the Burr, or any other Stove now in use. It has taken the First Premium at every Fair in the United States, where it has been exhibited.

Ploughs, Sugar Kettles, Grist & Saw-Mill Casting Steam Engines, Sleigh Shoes, Dog Irons, and a general assortment of Castings.

ROWSSELL AND THOMPSON, PRINTERS, TORONTO.

CANADIAN AGRICULTURIST.

Vol. I.

TORONTO, OCTOBER 1, 1849.

No. 10.

ANNUAL SHOW OF THE PROVINCIAL AGRICULTURAL ASSOCIATION.

The Exhibition of the Provincial Association for 1849, was held at Kingston on the 18th, 19th, 20th and 21st of September, according to appointment. The weather was cool and pleasant during the Fair, affording a most agreeable contrast to the *wet* meeting at Hamilton. The grounds consisted of ten acres—part of a government reserve in the city—and were fenced off and arranged with taste and judgment. The show was, upon the whole, excellent—quite equal in most departments to any previous exhibitions—and afforded unmistakable signs of an increasing interest among all classes in the objects and benefits of the Association, and a determination to support it. The people of Kingston extended their hospitality with hearty good-will to the thousands of visitors who flocked from all points of the compass to their renowned city; every bed was called into requisition, and even sofas were found useful to rest many a zealous pedestrian, who had made too many circuits of the show-ground. We shall give a brief sketch of each day's proceedings, with a general review of the whole. It may be proper to state that Mr. Buckland, being the Secretary of the Association, and having had his time and attention completely taken up with the duties of his office, these remarks and the following reports are supplied by the assistant editor. They are not, therefore, to be considered official in any respect, but as the free, independent views of the writer.

THE FIRST DAY was occupied with the entries of stock, implements, &c., and the arrangement of the committees. Notwithstanding the published conditions with which competitors were required to comply, several animals and articles for exhibition did not arrive until Wednesday. This neglect is always productive of confusion in the Secretary's department, besides being unfair to those who conform to the rules, and bring their cattle, &c., in time. A good deal of unnecessary difficulty and delay occurred at the Custom-house, in getting the American articles entered. Messrs.

Rapalje and Briggs of Rochester, brought over quite a number of agricultural implements, which it was supposed, as the Government had given an order for that purpose, could be entered for exhibition without trouble; but so much difficulty was thrown in the way by the Customs officer, in the various precautions he thought it necessary to take to guard against a sale of any of the articles without payment of duty, that unless some simpler mode can be discovered, we need not expect our American friends to contribute to our shows hereafter.

SECOND DAY.—Wednesday morning, large numbers congregated about the gates, but, except the officers, exhibitors, and members of the Association, no persons were admitted until two o'clock. The Judges, in the meantime, were busy inspecting the various articles exhibited; but owing to the delays that had taken place in making the entries and ticketing the numerous objects offered for competition, they did not get through their examinations until the next day. We are not able to say what number of tickets of admission were sold on Wednesday, but we should judge that five or six thousand people passed through the gates during the day. In the evening, Prof. Johnston delivered a lecture at the City Hall. Some remarks thereon, and an outline of the lecture, will be found in another place. The visitors to the Fair were favored soon after dark with a fantastic display by a society of "Phisiogs," as they call themselves, who paraded through the streets of Kingston, bearing torches—some mounted on horseback, some in waggons, and others on foot. They were dressed and painted in the most outlandish style, and from what we heard, it would seem they have been in the habit of playing off similar antics for some time back.

THIRD DAY.—The number of visitors to the show-ground on Thursday was considerably larger than on any other day. The Secretary of the New York State Society (B. P. Johnston, Esq.), Col. Sherwood, and Mr. H. Wager, appeared as delegates on behalf of the State Society. Many other

American gentlemen paid us a visit also, and seemed much pleased with what they saw. In the morning a grand review of the troops took place on Barriefield-common. A large concourse of strangers assembled to witness the display, which was very imposing. Upwards of a thousand troops are now quartered at Kingston. After the review, which was some distance from the Fair ground, visitors again poured through the gates in a continuous stream, until the enclosed space was a moving mass of horses, carriages, cattle, and human beings of both sexes, and of all ages, sizes and characters. Fully a third more were upon the ground on Thursday, than on the day previous. The President, Mr. Sheriff Ruttan, delivered the annual Address from a stand in the middle of the ground, during the afternoon. It was somewhat lengthily, and embraced a variety of topics. It is much to be regretted that the President thought it necessary to make some allusions and reflections in the course of his address, calculated to hurt the feelings and offend the pride of the American delegates and visitors. It was thought by many—indeed we did not hear an opinion to the contrary—that they could very well have been spared from the address. We will do Mr. Ruttan the justice to say, however, that we do not think he intended to offend by his remarks; but such was undoubtedly their effect; and after so many attentions to Canadian visitors at the New York State fairs, and while a generous rivalry and much good feeling was springing up between the agriculturists of the two countries, which could not but be mutually beneficial, we deeply regret that any interruption from such a source should have occurred. After the address, the Secretary announced the names of the successful competitors in those classes in which the Judges had completed their awards and returned their books. The Dinner took place in the evening, which we regret to say was not so well attended as was expected. Very few American visitors were present, the greater number having left in the evening boats.

FOURTH DAY—Friday.—When we entered the grounds this morning, there was a bustle on all sides—the exhibitor looking after their stock, wares, &c., untying their bulls, collecting together their sheep and pigs, unscrewing machinery, and packing up for home. We observed several visitors purchasing tickets this morning, who had certainly come “too late for the fair”; nevertheless, they pushed into the ground at no small risk from the horses, waggons, carts and carriages that were hurrying to and fro, without any regard to

the locality of the “carriage road” or the orders of the Marshal, whose authority appeared by common consent to have ended. Their first was also their “last lingering look,” and the panorama of the Cattle Show passed from their view.

THE PLOUGHING MATCH

Was to have commenced at 10 o'clock to-day, on the farm of Mr. Flanigan, about a mile and a half from the city. A little before 12 we repaired to the spot, expecting to see a grand array of teams at work; but the ground had not yet been staked out, and those whose duty it was to superintend the operations had not arrived. A few persons volunteered their services, and assigned to the ploughmen their respective lands. There were some thirteen or fourteen entries in the class for men, and but one in that for boys. But such ploughs! and such teams and ploughmen, we venture to say were never before collected together at a ploughing match in Canada West. Their work fully justified the expectations we had formed of them. The land, to be sure, was not the best; it contained numerous small stones, and was of a loose gravelly texture; but a good ploughman will show his skill on such a soil as well as on the best: indeed it is under such circumstances that his skill is needed; and perhaps the fairest way of testing the merits of a number of ploughmen, is to set them at work in a field like that at Kingston. In the present case, every rule that was ever laid down to secure good ploughing, was violated; and every defect that could be imagined in a case of bad ploughing, whether in the construction or tempering of the ploughs, the training of the teams, or the skill of the ploughmen, was exhibited. We never saw such an exhibition before, and we trust we may never see its like again. In the first place, the lands were staked out at each end of the field, and the ploughmen were allowed to plant small stakes about three or four rods apart in a direct line between the two at either end, in order, we suppose, to run their furrows straight; but even with all this precaution, it was by some deemed necessary to get a man to lead their horses by the head! The competitors were extremely good-natured and accommodating, for each allowed the other to do as he pleased, without making the slightest demur. A yoke of oxen, with a worn-out Yankee plough, took their place with the rest, and, for aught we could see, did their work as well. Some of the ploughmen carried their reins in the old-fashioned way, over their head; others seemed to have borrowed new ropes for the occasion,

which were allowed to drag nine or ten feet behind—from an unwillingness, probably, to spoil them by cutting, and to add to the picturesqueness of the scene. The ploughs were either too new or too old; the new ones clogged and drew heavily, and the horses being light and badly trained, were obliged to exert their strength to the utmost. Every two or three rods a stone would knock up the plough, when away she would go for another rod at least, before the unfortunate ploughman could get her into the ground again. As to stopping the team and drawing back the plough to the place at which she was thrown out, this seemed not to be thought of. Of course, at the next round the sod was either returned, or a divergence made to the right, exhibiting Hogarth's line of beauty to the admiring spectators. Some of the ploughmen adopted the former, others the latter alternative. As to the width of furrow, and the angle at which it was laid, every possible variety was to be seen at this ploughing match. The wide furrow, laid flat, or nearly so, was most in favour, though there were not wanting those who preferred to set the furrow on its edge, so that the growth of the grass might not be checked too suddenly, and leaving an agreeable alternation of fresh earth and green sod at every furrow. The ploughs were, with two or three exceptions, of the Yankee-Canadian pattern, the share and mould-board being of cast iron, and the stils or handles considerably longer than in the original Yankee. There were two or three iron Scotch ploughs on the ground, but they were in very bad trim, and did their work in a third or fourth-rate style. We observed also among the competitors a plough belonging to a species that we had long supposed to be extinct. This specimen had already attracted our attention on the Fair ground, where it was exhibited along with some of modern construction, to show by contrast, as we supposed, the progress of improvement. Its owner—a man of the last generation, who no doubt heartily despised the new-fangled inventions of the present day—was of a different opinion; and we must admit that the performance of his competitors was not calculated to remove his prejudice or shake his faith in the superiority of the past. There was but one circumstance that gave us satisfaction on this mortifying occasion. Mr. Briggs, of Rochester, who contributed largely to the implement department, was there with one of his best Yankee ploughs. When we saw the *tout ensemble* which our own people presented, and the exulting looks of our American friend, we trembled for the result. We, who had touched the vanity of our neighbours by the free-

dom of our remarks on their ploughs and ploughing at Buffalo, and ventured, on behalf of Canada West, to accept a challenge from persons who undertook to act on behalf of the great State of New York, but of which, by the way, nothing further has been said for some time—we, who had done this, to be placed in such a predicament! It was truly awful. But the horses were hitched, the ploughman took hold, and—our fears vanished: we felt that our country's reputation was safe, and again breathed freely. Three or four persons tried it in turn; an American ploughman was procured, but all in vain—this plough did the worst work in the field. Mr. Briggs himself seemed surprised at its performance, but was not able to better it.

We sincerely hope that higher prizes will be offered, and more pains taken to secure a good match at the next Exhibition. If the ploughing match at our Provincial Show is to be the subordination and wretched thing we have just described, it had better be dispensed with; we shall only get ourselves into disgrace. It should be remarked, that the land in the neighbourhood of Kingston is very rough and stony, and good ploughing not much in request. The prizes were not such as to induce good ploughmen at a distance to leave home at so busy a season as the middle of September, and the competitors were consequently from the immediate neighbourhood, and they perhaps not the best.

THE EXHIBITION.

We come now to speak of the Exhibition itself—of the general character of the stock, and the quality and appearance of the articles in each department. Our remarks must be brief and general, for the simple reason that we found it impossible to get information that would enable us to be *particular*. Several members of the press complained of the same difficulty. This evil might be remedied to a great extent by a very simple rule, which we hope to see adopted by the executive committee of the Association, and enforced at our future shows. It arises from the neglect of the owners of cattle, implements, &c., to *ticket* them with the owner's or maker's name, age and breed of the animal, and name and use of the implement, &c. &c. A person enters the show-ground; he sees a number of horses prancing about—a lot of bulls tied to posts or held by ignorant boys, who can give you no information about them, at least none that you can rely upon; he passes on to the pens of cows, sheep, hogs, &c.; he may look in, but except perhaps "Class H., Leicesters," or "Class J., pigs," he can learn nothing of their history or owner. Of course, if you happen to meet with the

owner, which not one visitor in a hundred is likely to do, your darkness may be enlightened. Now, an easy remedy would be, to make it imperative upon all exhibitors to attach a ticket or label, with certain specified particulars legibly written thereon, to every distinct article entered for competition. It would be to the interest of the owners to do this, as it would receive a special notice by the press in many cases, as well as a more thorough examination by the spectators.

HORSES.—The show of horses was never surpassed in this country—especially in the class for agricultural purposes. The famous *Clyde* was there, with one of his progeny of similar colour and nearly equal proportions. *King Alfred*, a beautiful bay, owned by Mr. Ashford of this district, is a splendid animal: for a horse of all work, such as our Canadian farmers approve, he is almost faultless. He has a rather small eye, which lacks boldness; his head too is not quite unexceptionable; but with these exceptions, we could not discover a bad point. He took the first prize, and, we think, justly. We believe he was at Syracuse, and obtained a prize in the foreign class. We were much pleased with a beautiful iron-grey, belonging to the Cornwall Agricultural Society. He was imported from Jefferson county, New York, and cost the Society £100. He is all action, well proportioned, good size, and well adapted for the carriage or saddle. A two year old colt, from the Wellington district, astonished all by his tremendous proportions, while at the same time his carriage was light and graceful. Many persons would not believe the owner's statement as to his age. He took the first and only prize in his class. Blood horses were well represented—not by numbers, but quality. *Mercer*, owned by John Gibson, jr., of Niagara district, carried off the first prize. He is 13 years old, 15½ hands high, and in colour a rich mahogany brown. He was imported from England by Commodore Stockton of the United States navy, at 1 year old. He was sired by *Amulus*, and belonged to the stud of William IV. His present owner purchased him about three years ago, and paid, as he asserts, £750. He is insured for more than half this sum, or we should be disposed to say that Mr. Gibson had made an *unsafe* investment. *Mercer* is a little sprung in the knees, and shows the marks of age in other respects, but we heard good judges assert that there is no better blood in America. Mr. Cumming, of Kingston, showed a couple of blood colts that will no doubt perform exploits on the race-course; but we confess our partiality for the useful and the strong, rather than the fanciful

and the swift, in horse flesh: a combination of these qualities, as exhibited in *Hunter*, the Cornwall Society's horse, accords best with our taste.

DURHAMS.—*Bulls.*—The animals in this class were very good, and quite numerous. The average excellence of the whole number was high, but it did not strike us that any individual exhibited a marked pre-eminence. A two year old bull from the neighbourhood of Cobourg gives promise of great merit at maturity. The bull belonging to R. Wade, Esq., of Hope, to which was awarded the first premium, is a fine animal. Mr. Nightingale's bull, *Sir Charles*, for size, symmetry, and good points generally, was in our opinion entitled to the third prize at least; but he was objected to, as we have heard, on the ground of impurity of blood. He was bred by Mr. Mair, of Barrie, whom we have heard assert the purity of his ancestors on both sides; but we think there can be but little doubt of his having Devon blood in his veins, and he may therefore be fairly open to objection in a Durham class. The young bulls made a good show—an encouraging feature in this Exhibition, which we believe is one of the good results of these annual meetings. We may expect in two or three years to find good stock of the improved breeds in every township of the province. *Cows.*—We noticed two or three first-rate animals; but as a whole, we think there was a falling-off from previous shows. Nearly all the Durham cows and heifers offered, belonged to Mr. R. Wade, sen., Mr. R. Wade, jun., and Mr. John Wade, all of Hope, Newcastle district. These gentlemen deserve great praise for their spirited efforts to improve the stock of their neighbourhood. All the prizes, with one or two exceptions, in these classes fell to them.

DEVONS.—The number of Devon cattle was not greater than usual, and the quality about the same. Mr. Ewart of Dundas, Mr. Masson and Mr. Burnham of Cobourg, were the only competitors. We cannot particularize individuals, for the reason already given; nor can we describe even the colour of the animals which took prizes. In the case of Devons we might, to be sure, assume that they were *brown*, but we could not ascertain what particular animal had obtained prizes till the Fair was over. This is another great defect which ought by all means to be remedied. Every possible effort should be made to get the judges' awards by the evening of the second day. When the public is admitted on the third day, the prize animals should be distinguished by appropriate marks. Unless this be done, half the interest,

and, we might add, half the usefulness, of the Exhibition is lost.

AYRSHIRES were better represented than at either of the previous exhibitions of the Association. Until last year, if we mistake not, no premiums were offered for this excellent breed. Both they and the Herefords seem to be neglected in Canada, though probably they are better adapted to the country for all purposes than either of the other breeds. We had expected to meet our friend Soetham, from Black Rock, New York, with a few of his splendid herd of Herefords, but were disappointed. He will no doubt pay us a visit next year, and give our farmers an opportunity of seeing some pure specimens of that noble breed, which has for some time occupied the first place in the markets of Smithfield.

GRADE CATTLE.—These made a tolerable show; those in the young classes being the best. We hope to see hereafter much more numerous exhibitions of grade cattle. We believe that crosses of the Durham and other improved breeds, with the best milking families of our native cattle, will be found most profitable for the common farmer. Amateurs, or "gentlemen farmers," as they are called, may patronize the pure breeds exclusively, but we are far from despising a good cross.

SHEEP.—Leicesters were most numerous. Two of these pens were first-rate; but as a whole, the sheep of the different breeds were below our expectations. Mr. Miller, of Markham, showed a few choice animals of the Leicester breed. We noticed also a very fine shearling ram, belonging to Mr. Cameron of Garden Island. South Downs were not more than ordinary. The fine-woolled varieties were few in number, but, so far as we could judge, of good quality.

PIGS.—We never saw a better display: it seemed as if the choicest specimens of the several breeds had really been selected. In the other classes we saw individuals that might be matched by a selection from the yard of almost any good farmer, but it would require some pains to find the equals of the Berkshires and large breeds exhibited on this occasion. The pigs of 1849 were perfect beauties.

FAT CATTLE, SHEEP, &c.—The fat cattle exhibited were nothing to boast of; we have often seen better in the Toronto market. Working oxen made a good show, but we saw none worthy of particular notice.

IMPLEMENTS.—Taken as a whole, the show of agricultural implements was very creditable. Evidence of improvement in this important branch of home manufacture, was clearly traceable in the display of this year. Ploughs were exhibited in

almost every variety; some well constructed iron ploughs, and other iron implements, from the shop of Mr. Fleck of Montreal, attracted great attention.

There were also imported iron ploughs exhibited, from the foundry of Mr. Grey, the celebrated Scotch implement maker. The wooden Scotch plough so much in favour in this part of Upper Canada was not well represented; we observed but one good specimen, which was made, as we have since been told, by Mr. McTavish of Darlington. A double-mould board plough and cultivator combined, by Mr. Newton of Cobourg, was an object of considerable curiosity to the farmers. These manifold implements, however, are not in our opinion the most desirable or convenient. Fanning mills, stone cutters, cultivators, reaping machines, horse powers for various purposes, cheese presses, churns, seed drills, root cutters, and dozens of smaller contrivances for facilitating the many operations of the farmer, were all there in their most approved forms, inviting the inspection of thousands of visitors. A portable grist mill, known in the States as "Fitzgerald's patent portable Burr stone mill," was exhibited by Mr. Ross of Syracuse, New York. The mill, without the bolting apparatus, cost \$100, and is capable of grinding ten bushels of wheat in one hour. The proprietor had several medals awarded by the American Institute, New York city. He showed some flour ground by this mill, which took the premium at Syracuse; it was certainly of a very fine quality. For new settlements, this invention will supply a desideratum. Mr. Ross, indeed, asserts, that when its merits become known, every farmer will be his own miller. He says it is about being put up in one of the large flouring establishments at Rochester, in the place of the common flat Burr stones, after which, if it proves its superiority, we have no doubt it will come into general use. We may hereafter give a cut, and a more full description of this interesting machine. Messrs. Rapalge & Briggs, of Rochester, exhibited the best assortment of agricultural implements on the ground. Their ploughs were well made, but the pattern will not go down with Canadian ploughmen; they are only adapted for cross-ploughing. Palmer's and Pennock's grain drills (price \$60) will be more sought after as they are better known. Mr. Vale, of Toronto, exhibited a number of tools and implements of excellent construction, and greatly admired for their beautiful finish. We have not space to particularize in this department, but refer the reader to the prize list, on another page, for the names of the successful competitors.

DOMESTIC MANUFACTURES.—This department was admitted by all to be deficient in the variety and number of articles. The quality of those exhibited was highly creditable. The blankets, counterpanes and cloth, from the manufactory of Mr. Gamble, were all that could be desired; but we were much disappointed to see so little competition. Mr. Drummond, of Toronto, showed some beautiful furniture, as also did Mr. Botta of Kingston. An excellent assortment of stoves, scales, and other articles, was exhibited by Mr. Spencer of this city. Forks, axes, and other tools, were quite numerous and of excellent quality. Mr. Spencer's hot-air apparatus, and the model of a threshing machine, attracted a good deal of attention. We trust our woollen manufacturers will not be so backward next year.

HUSBANDRY.—In this department the display was good, but not extra. We saw two or three very fine samples of wheat, and some very poor ones—we heard several farmers say that they had much better in their barns. The Canada Company's liberal prize of £25, ought certainly to excite more general competition: Mr. Freeman was very near taking off the prize for the *third* time. Butter and cheese—the former especially—were first-rate in quality. We missed the famous Stilton of our friend Mr. Parsons. Two bottles of mustard, of home growth and home manufacture, attracted some notice. We have tried this mustard—made by Messrs. Crawford & Inlach, Niagara district—and pronounce it excellent. We hope they will be able to supply the Canada market, as no one can wish a better article. The hops exhibited were said to be of good quality and well cured. The corn, pease, &c., were not worthy of particular notice.

Of the contents of Floral Hall, we can hardly trust ourselves to speak in this number; we shall need two or three pages, to do them anything like justice. This was the great centre of attraction for the old and the young—the resident of the city and the farmer from his plough. The ladies' handiwork was beyond all praise, and exceeded all former exhibitions. The paintings, drawings, and other works of art, were highly spoken of by those who professed their ability to judge. The fruits and vegetables, to which we chiefly directed our attention, as we were crowded along by the immense mass of human beings constantly moving round the stands, were all so good, that the judges must have had considerable difficulty to decide respecting them. Amongst the articles exhibited in the Horticultural department which did not obtain prizes, we noticed some very fine speci-

mens of black Hamburg and black St. Peter grapes, from the hot-houses of W. B. Jarvis, Esq., Rosedale, Toronto; some very fine long blood beets, from Messrs. Leslie & Gordon, Toronto; a dish of very large white egg plums, from Edwin Baldwin, Esq., Toronto; some excellent winter cabbages, from William Daniel, and Mr. Sherwood, Toronto; and a few specimens of choice apples, from James Fleming, Toronto. There were also some very fine roots of the new yellow globe mangel wurtzel. The season was early for showing Swedish turnips, still the samples shown did credit to the growers. The prize parsnips were the largest and best grown we have ever seen; and the two large pumpkins—one 260 lbs., the other 202 lbs.—grown by Captain H. Snaw, Oakhill, Toronto, were much admired. We would also notice a very fine bunch of white grapes—over 2½ lbs.—grown in the open air, by Mr. Thompson, near Bytown; they were awarded the second prize, and well deserved it. There were no flowers worth looking at, the season being late and unfavourable for such productions: in fact, the only flowers exhibited were a few faded specimens of cut flowers, from the nurseries of Ellwanger & Barry, Rochester. We find it impossible to mention the names of all the competitors, and must again refer to the premium list. There were several miscellaneous articles, that contributed greatly to the interest of the show, of which we should like to speak; but our printer already complains that he has got too much matter. We may allude to these things in a future number.

The next Show is to be held in the Niagara district—probably in the neighbourhood of the Falls. A tremendous turn-out may be expected. Let the farmers of Canada show what they have done, and what they can do, on that occasion.

The Officers of the Association for 1850, are the following:—

JOHN WETENHALL, Esq., M.P., Nelson, *President*.
J. B. MARKS, Esq., Kingston, 1st. *Vice-President*.
T. CLARK STREET, Esq., Niagara Falls, 2nd *V. P.*
T. G. RINDOUT, Esq., Cashier B. U. C., *Treasurer*.
GEO. BUCKLAND, Esq., Toronto, *Secretary*.

A SUBLIME TRUTH.—Let a man have all the world can give him, he is still miserable, if he has a grovelling, fettered mind.

Let him have his gardens, his fields, his woods, his lawns, for grandeur, plenty, ornament and gratification; while at the same time God is not in all his thoughts.—And let another have neither field nor garden; let him look at nature with an enlightened mind—a mind which can see and adore the creator in his works, can consider them as demonstrations of his power, his wisdom, his goodness, and in his poverty, he is far happier than the other in his riches. The one is but little higher than a beast, the other but little lower than an angel.

At a meeting of the officers and delegates of the Provincial Association held in the Committee Room, on the Show-ground, at Kingston, on Friday, September 21, the president, Henry Ruttan, Esq., in the chair, when the following resolutions were adopted:—

1. Moved by Mr. E. W. Thomson, and seconded by the Hon. Adam Fergusson, that John Wetenhall, Esq., M.P.P., of Nelson, be President for the ensuing year.

2. Moved by Mr. Asa A. Burnham, and seconded by Mr. D. Matthews, that J. B. Marks, Esq., of Kingston, be first Vice-President.

Moved by the Hon. Adam Fergusson, and seconded by Mr. Wm. McMicking, that Thomas Clark Street, Esq., of Niagara Falls, be second Vice-President.

4. Moved by Mr. Robert Watson, and seconded by Mr. John Wair, that T. G. Ridout, Esq., be Treasurer for the ensuing year.

5. Moved by Mr. Marks, and seconded by Mr. R. L. Denison, that Geo. Buckland, Esq., be Secretary for the ensuing year.

6. Moved by Mr. E. W. Thomson, and seconded by the Hon. Adam Fergusson, that the next Show of the Provincial Association be held in the Niagara District; the place to be determined by the Directors, at the annual meeting in February.

7. Moved by Mr. Clapp, and seconded by Mr. Saylor, that the next Exhibition be held during the third week of September, 1850.

8. Moved by the Hon. Adam Fergusson, and seconded by Mr. Angus Cameron, that the thanks of the Association be given to the President for the excellent address delivered by him yesterday, and that he be requested to furnish a copy to the Editors of the Agriculturist for publication.*

9. Moved by the Hon. Adam Ferguson, and seconded by Mr. Thomson, that the best thanks of this meeting be given to the Executive Committee for their zealous and valuable services.

10. Moved by Mr. Thomson, and seconded by Mr. John Wetenhall, that the best thanks of this association be given to Mr. March, of Scarborough, for presenting the Canadian Coffee Plant at this Exhibition.

11. Moved by Mr. Marks, and seconded by Mr. Wheatfield, that the best thanks of the Agricultural Association be given to the Canada Company for the continuance of their liberal subscription of £25, for the best 25 bushels of Fall Wheat, the produce of Canada West.

12. Moved by Mr. John Wetenhall, and seconded by Mr. E. W. Thomson, that the Secretary of the Executive Committee be directed to distribute the Canada Company's prize wheat, among the Districts represented at this meeting.

13. Moved by Mr. Briggs, and seconded by Mr. J. W. Rose, that the Secretary be empowered to prepare reports of the proceedings of the Association, and that a committee be appointed, with whom the Secretary shall confer, such Committee to consist of Messrs. Sheriff Ruttan, John Wet-

enhall, and E. W. Thomson, with power to add to their number.

11. Moved by the Hon. Adam Fergusson, and seconded by Mr. E. W. Thomson, that His Royal Highness, Prince Albert, be elected an honorary member of the Agricultural Association of Upper Canada.

15. Moved by Mr. Marks, and seconded by Mr. Thomson, that the following By-Law be submitted for adoption by the Board of Directors at their annual meeting in February next:—

BY-LAW.

Whereas by Act 10 & 11 Vic. cap. 61, sundry persons therein named were incorporated under the style and title of "The Agricultural Association of Upper Canada," for the purpose of the improvement of agriculture, and the encouragement of domestic manufactures; and it is provided by the second clause of the above named Act, that the Constitution may be amended under certain regulations therein mentioned; and whereas it will facilitate the business of said Agricultural Association by making the following regulations:

1st. Be it enacted, &c., That from and after the passing of this By-Law, there shall be an Executive Committee chosen, to consist of not more than fifteen nor less than eleven members, five of whom shall constitute a quorum for the transaction of business; and that the office bearers of the Association, and ex-presidents shall at all times be members thereof.

2nd. Be it, &c., That the Executive Committee appointed in any district for the purpose of managing the business of the annual Exhibition, shall have full power for that year, of providing and making all the necessary arrangements connected therewith, in the same manner and with the same authority as can be done by the original Board of Directors.

3rd. Be it, &c., That so soon as any committee of management shall be appointed for making arrangements for the annual Exhibition in any district, they may commence their meetings and choose a chairman, secretary and treasurer. A minute book, recording the proceedings of each meeting, to be kept by the secretary of said Committee, and after every annual Show, to be delivered to the Secretary of the Association, to be kept among the records in his charge.

4th. Be it, &c., That said Committee shall have power to enclose such ground and erect such buildings, either by contract or otherwise, as they or a majority of them shall agree upon, for the purpose of holding the annual Show; and they shall be empowered to collect money, and receive subscriptions in aid of the funds of the Association, and pay premiums, and do all manner of things that may be required for effectually carrying on the business of the Association; and no member of the Executive Committee of Management shall be concerned in any contract or work of profit, directly or indirectly, as surety or otherwise, ordered to be performed for the use of the Association.

5th. Be it, &c., That the treasurer of the said Committee shall be required to give security for

* The address reached us too late, and is too long for the present number; it shall appear in our next.

the safe-keeping of all monies in his hands, and shall keep a correct account, under specific heads, of all monies received by him either from the Secretary or Treasurer of the Association, her Majesty's government, other districts, private subscriptions, and every other source, as well as of all disbursements made and premiums paid, the erection of buildings, hiring and renting of houses if required, and all other necessary expenses, and the balance of money in his hands remaining (if any) to be paid over to the Treasurer of the Association, or to the treasurer of the next Executive Committee, as shall be directed by the next General Board—the said account to be made up in the shape of an account current, and transmitted to the Secretary of the Association, to be kept among the records in charge of that officer.

6th. Be it, &c., That whenever the annual Exhibition shall have been voted to be held in any district in the province, the Executive Committee shall call to their assistance the Secretary of the Association, who will furnish from the records such information as the Committee may desire for the purpose of making the necessary arrangements for the forthcoming Show; and the said Secretary of the Association shall, if required, attend in person at the place appointed for the annual exhibition, as often as the Executive Committee shall require.

7th. Be it, &c., That the subscribers and members of the agricultural societies of the district wherein the annual Exhibition may be held, shall be also members of the Association for that year, and have badges accordingly provided; the agricultural societies of the district shall devote their whole funds for the year, including the government grant in aid of the Association. And the office-bearers of other district societies that shall have made donations, or contributed towards the provincial show not less than 25l. for that year, shall also be furnished with badges of membership for free entry into the grounds of the Exhibition.

8th. Be it, &c., That after every annual Exhibition, the Executive Committee shall prepare and transmit a report to the Secretary of the Association, detailing the particulars of their proceedings and arrangement, the said report to point out from time to time any defect in the by-laws, and recommending such alterations and amendments as they may deem expedient for conducting the business of the annual Exhibition.

9th. Be it &c., That the premium list, as well as rules and regulations for conducting the show, shall be prepared for the current year by the general board, at their annual meeting in the city of Toronto, in the month of February, and circulated through the province as early as possible.

INFLUENCE OF MANURE ON ROOTS.—Hoar, in his Treatise on the Vine, states that a bone was placed in a vine border, surrounded by dry clay. The vine sent a root directly through the clay to the bone. In its passage it threw out no fibres, but when it reached the bone, which was rich in fertilizing material, it sent out minute ramifications, and by degrees entirely covered it.

PROFESSOR JOHNSTON'S LECTURE.

On Wednesday evening, the second day of the Fair, Professor Johnston delivered a very interesting Lecture in the City Hall. Owing to some oversight no suitable preparation had been made for the occasion—even seats, except a few which were in the room, had not been provided, and until within a few minutes before the hour appointed for the lecture, the persons about the premises did not seem to know that such an occurrence was to take place. Thirty or forty persons, among whom was the writer, strayed into an adjoining room, used as a place of worship, where they remained for half an hour, expecting every moment to see the Professor, until the ladies began to assemble for prayers, and thus made them aware of their mistake. We mention these circumstances, not merely by way of complaint but to account for the thinness of the audience, and in the hope that such things will be better managed hereafter.

The audience, though small compared with the number of persons in the city who were anxious to hear Professor Johnston, was composed of some of the most intelligent of the citizens, and many of the best farmers in the country. The President, Mr. Ruttan, occupied the chair. The Hon. Adam Ferguson, E. Thomson, Esq., Ex-President of the Association, J. B. Marks, Esq., and several other gentlemen, had seats on the platform.

Professor Johnston was introduced by the President, and began by an allusion to the difficulty under which he laboured in attempting to address an assemblage of Canadian farmers in a practical or profitable manner, with but a slight knowledge of their situation or the peculiarities of their soil and climate. He had but just come from the New York State Fair at Syracuse, and consequently had seen but little of Canada.

The Professor then referred to the variety of subjects on which from his past pursuits, he might be expected to address them, but as it would be impossible in the short space of a single lecture, to communicate much scientific information to those who had not already devoted considerable attention to the subject, he would confine himself to a few points of a practical character, applicable to the situation and wants of Canadian farmers. [We must here state, that the learned Professor's lecture was chiefly extempore, and being unable to obtain a table or a candle, the writer was obliged to scratch down a few notes on the top of his hat. We can, therefore, give but a very meagre outline of the lecture, and do not pretend to give precisely his language.]

The learned lecturer said, there were three considerations of great importance to the farmer in this country. The causes which had, in many places, produced a sterile condition of the soil; the means to be used to prevent exhaustion of the soil; and the means to restore it. Most of the early settlers were but little acquainted with the proper means of either preventing exhaustion or restoring to the soil its exhausted elements. The earth yielded abundantly, and they thought it would continue to do so. Their sons grew up in the same belief, and from their situation were not apt to know more than their fathers. Another reason for neglecting to study the means of preventing the exhaustion of the soil was, the well known fact that the farmers were in the habit of selling their worn-out farms and moving off to new land. This was the character of the early farmers in the Eastern States, who seemed to have no attachment to the soil. Again, the farmer probably thought he was not called upon to do any thing for posterity, as posterity would do nothing for him. It was very evident that the produce of wheat in New Brunswick, New England, and western New York was falling off; and though this failure is often attributed to natural causes, exhaustive culture is the main cause. If he were to enter upon a consideration of all the causes

which produce exhaustion, it would occupy the whole evening; he would, therefore, briefly consider the means by which the productive powers of the soil may be maintained.

The use of lime had in many cases restored land.—He had often, at home, seen the best results from the use of lime. The use of bones, in various ways, restored land that had become incapable of producing corn—by which he meant all kinds of grain. In some parts of Canada he believed bones had been used, and had been found to improve the land for the production of wheat and other grain. He would take the opportunity to make the matter plainer by briefly explaining the principles of the action of bones, &c. If, for instance, you take a lucifer match and strike it, white fumes will arise forming phosphoric acid. Now, one bushel of wheat contains a pound of this substance—phosphoric acid. The growing of grain for a long series of years on the same soil, exhausts this substance. Bones contain phosphoric acid in large quantity, and actually restore to the soil this substance—the very thing, the absence of which makes it fail to produce. Another mode by which exhaustion may be prevented, and is commonly restored, is the application of manure. In the course of his journey to attend the Fair at Syracuse, he had seen land on which crops of corn had been grown, with nothing beyond the occasional application of manure, for 50 years. In the neighbourhood of Pictou, N. S., and Prince Edward's Island, he had also seen land on which successive crops of corn (wheat, oats, &c.) had been raised for 50 years and upwards. However such a system may be carried on, it is like taking money out of your purse, and if you go on will certainly exhaust it. The way to prevent this result, and to make your land produce good crops, is to adopt a proper rotation and a better system of manuring. Gentlemen would know better than he could tell them, the extent to which this system had been carried on here. In this country, so favourable for the growth of wheat, the average yield was not, as he had been informed, 15 bushels per acre. In parts of the neighbouring State of New York, the average was not 10 bushels; and taking the whole State the average was not 15 bushels. In England it was not uncommon to raise 50 bushels on an acre. He believed in many parts of Canada the land would grow 40 bushels to the acre; and he could see no reason to doubt that the soil of Canada, adapted to growing wheat, might be made to produce an average of 30 bushels.

Another method of repairing the effects of exhaustion is, the adoption of a better system of husbandry generally. This, among other things, includes a proper system of rotation, selection of the best varieties of wheat and other grain, and giving proper attention to the other points to be attended to in the general details of farming, such as ploughing, drilling, hoeing, procuring suitable implements, &c., &c. Now, how is this improved system of agriculture to be introduced, and its general adoption by the farmers of the country to be brought about? By diffusing information, by spreading knowledge among them. One of the sources of this knowledge is your primary schools. But knowledge may be diffused by other methods also. For example, by means of societies such as this. Agricultural Societies, both great and small, do good by diffusing some kind of knowledge. When the average amount of knowledge possessed by these societies is considerable, every man finds his own stock greatly increased. Another means is, the establishment of societies for discussion, like our Farmers' Clubs at home and in the United States. Questions of practical importance are discussed—the information elicited becomes common property, and advances the general good. Individual emulation is excited; each tries to outdo his neighbour; their land is cultivated better, and improvement spread over a

wider field. Larger Societies like this are also useful, in exciting emulation between townships and districts. The man who thinks himself the largest cock on the dunghill at home, when he comes here finds himself very small. By meeting together in large numbers you obtain a great amount of intellectual and moral power, through the united labours of the most industrious and the most intelligent of your class.

Another mode is, the diffusion of agricultural literature, by the general circulation of such useful periodicals as the *Canadian Agriculturist*. Indeed, this is one of the very best modes of diffusing knowledge among farmers.

Gentlemen, said Mr. Johnston, permit me to make one observation in reference to your own society. All large societies like this, should have some memorial of its transactions and progress from year to year. The Agricultural Society of Scotland, the Royal Agricultural Society of England, the German Agricultural Societies, the French, and even the Russian Societies keep journals of their transactions, which are printed and extensively circulated. But he would rather draw their attention to the transactions of the New York State Agricultural Society. [The learned Professor here exhibited a copy of the work, which had been presented to him.] This volume contains 979 pages, and though in so large an amount of matter there may be some nonsense, there must necessarily be a great amount of valuable information connected with the State of New York. Many of the papers are drawn up with judgment and skill. Every State has something special which needs to be ascertained and recorded. Whenever your funds permit, you should by all means publish your transactions, which would stimulate members to make experiments in order that they should be known. Your Legislature might be induced to publish your proceedings, properly prepared, as in the State of New York, gratuitously, or at the public expense, and no doubt a large amount of good would result from their circulation. These are some of the modes of repairing the effects of exhausted soils, and to find out and adopt means to prevent your new lands from becoming exhausted. Another practical point he would mention,—considerable benefit might be derived from drainage. There are two kinds generally adopted. The first and most simple kind is surface drainage, resorted to for the purpose of carrying off the water of springs, bogs, &c. This kind of drainage, he was told, would in Canada answer for most purposes, such as draining swamps and low grounds. The second kind was called thorough drainage, and was much practised in England and Scotland. It had been found very profitable. He would not, however, recommend its general adoption in this country. The money value of land is much less here, and labour being high, the cost of thorough drainage would buy new land. But the time will come when new land will become old, and then thorough drainage will become necessary. The second epoch in drainage, viz., thorough draining, has not yet made much way in continental Europe. The first system has been introduced very widely. All of you have probably read something of the nature and principles of draining.—When land is covered with water it is cold. If he should pour water from the glass before him upon his hand, it would become cold—the heat being carried off by evaporation. The same thing happens to land saturated with water. The heat which the plant requires is taken off by the evaporation of the water. Now, it is important that grass, &c., should grow rapidly, which it cannot do if the soil is kept too cold. Besides, on dry land a ton of grass will go much further as food for cattle. If you were placed in a bog you would find yourself grow cold, and you would become warm on a hot soil. It is the same with your cattle.. Animals will eat more on cold soils than on those which are dry and warm,

and yet not thrive so well. On cold, wet land the animal becomes cold also, and a large portion of what he eats goes to supply the warmth of which he has been deprived. Upon dry lands also, the farmer can get in his seed earlier. A great deal of the failure in growing wheat was owing to rust, which was more destructive in moist situations. The Genesee Valley, though celebrated for the production of wheat, was in many parts subject to the attack of rust; while upon the uplands no fear of rust was entertained. Thus one of the most formidable enemies of the wheat grower would no doubt ultimately be overcome by proper draining.

There was another thing which occurred to him might be introduced more extensively with advantage, in all the Provinces, viz., the growing of green crops, such as mangel wurtzel, carrots, &c. In your Province, if you keep much stock through the winter, they eat up the produce of the summer. The hay crop had failed this year in New Brunswick, in some of the States of the Union, and he believed it had also failed to a considerable extent here. Farmers must, therefore, see the importance of providing more food for their stock. Experiments at home had proved that the same extent of land would produce a far greater amount of food in the shape of green crops. It was more profitable to keep stock over winter, if sufficient food could be raised on the farm, than to sell at a sacrifice in the fall. He did not intend to lay down rules or dictate to his hearers, in a matter of this kind. He threw out the hint, and their own judgment and experience would guide them. In Scotland agriculture is now in a highly advanced state. But fifty years ago, the farmers there were in the same state as to green crops, that you are now. They were obliged, for want of food, to kill their cattle in the fall, and in the spring of the year no good beef was to be seen in the markets. Since the cultivation of green crops, every farmer keeps his stock during winter. Why may not you, by adopting a similar practice, do the same, with profit and success?

Another point not unworthy of consideration is the want of good markets, so universally complained of, not only here but also in the State of New York. In many parts of the country the only thing wanted to obtain a market is to give your produce legs, by which it could get to market of itself. He referred to the beef and pork of the Western States, which were driven to a convenient point on its legs at a little cost. Thus you see how all these different points are connected one with another, in the improvement of your agriculture.

There was another point to which he would direct their attention—improvement in agricultural implements. He was much interested with the implements he had that day seen in the show yard. Many of your implements have been defective; but it was evident a great improvement is taking place. If you set a mechanic to work with a bad tool, he not only does his work worse, but he takes a longer time to do it. The employer in such a case pays far more than is necessary. He would save money by improving the implement. And so it is with the farmer.

He had thus, he said, selected a few practical points for their consideration; but he would also like to address them on one or two of the moral points of agriculture. They were such as applied to every country. He referred to the low position which the agricultural body occupy in intelligence. The remark was equally applicable to the farmers as a body at home. The great distinction was to be found in the training of the intellect. The opinion prevailed, he believed, over a great part of North America, that the agricultural body was less intelligent than other classes. Now it was not because they were naturally less capable of intellectual improvement. He had been much among agriculturists in other

countries, and he had found as much intellect among them as among any other class. But the real difference is, that their intellects are less cultivated, especially in regard to school learning. The Professor remarked, that he might tell them something of the condition and mode of conducting schools at home; but they knew better than he how far their schools here were adapted to the improvement and elevation of farmers. One difficulty in the way of intellectual and social improvement is, that farmers are scattered over a wide space and have less opportunity to study. Another great evil is, that the education of the agricultural classes has been neglected, because it has been supposed that agriculturists do not require education. This is a great mistake. This false notion had long existed at home; and if one boy of the farmer's family showed more cleverness than the rest, he was made a minister or a lawyer, while the most stupid was thought quite smart enough for a farmer. He found the same opinion prevailed in America. If such an opinion generally prevails in any country, that is sufficient to explain why farmers are inferior to other classes in intelligence. But the time is come when farmers must be convinced that they need education. Those who came early to this country knew but little of agriculture, or the modern improvements which science had brought about; and having got on very well with their rude systems, they think it unnecessary that their sons should know more than themselves. But when land has been some time cultivated, it will be impossible, unless farmers are educated, to farm profitably, or to follow out modern systems of agriculture. Under such circumstances the farmer, to be successful, must have a knowledge of principles. The farmer is like the physician; he must understand the nature of the disease, in order to prescribe the remedy. He must compound his own prescriptions—be both physician and apothecary; to do which properly will require education. Did time permit, he might use many illustrations to show how much is required in the successful prosecution of agriculture. For instance, a bushel of wheat required one pound of phosphoric acid; but this is only one of twelve substances that must be present in the soil to produce it. These dozen substances also exist in the animal, which could not live unless the food supplied to it contained these substances. When the animal dies, these dozen things go back to the soil; the soil gives them to the living plant; the plant gives them to the living animal, and the animal returns them again to the soil. Thus the great wheel of nature revolves, which shows you how much mind is required to understand and properly to regulate its motions. You may make a boy of ten years old understand these elementary principles, but it requires a matured mind to apply them. The great importance of agricultural institutions is, to give instruction in those branches of knowledge which enable the farmers, when difficulties present themselves, to farm skillfully, and to overcome them. A skilful system is that which makes a farm produce large crops at less cost than it would otherwise do.

It thus becomes apparent that in order to improve agriculture, and to raise the position of the farmer in the social scale, you must educate him. If you cannot go to school yourselves, it is your duty to provide suitable education for your children. This may be obtained in properly-organized schools. He did not sufficiently understand the condition of this province, to offer any opinion as to how this instruction may be given in the parish or primary schools. He had no doubt but a sufficient amount of instruction in the elementary principles of agriculture could be introduced through the agency of the common school. A small catechism like this [the Professor exhibited a copy of his own little catechism, which has been introduced with so much success into the schools in Ireland and Scotland], contains all the

principles that are necessary. A very little time is required to master them; one hour a day would be sufficient. Higher schools might after some time be established. Model farms would also be productive of great good. He had thus dwelt upon a few material facts, which he had ventured to recommend to their notice, hoping that some good might result from his observations. [The lecture was warmly received by frequent expressions of applause.]

It was moved by the Hon. Adam Fergusson, and seconded by E. W. Thomson, Esq., that the best thanks of this meeting be given to Professor Johnston for his highly interesting and instructive lecture.—Carried by acclamation.

We think it due to Professor Johnston to state, that his services were perfectly gratuitous, and that the best wishes of his Canadian fellow subjects will accompany him wherever he may go. And we earnestly hope that so valuable a life may long be spared to aid the great work of advancing the agriculture, not only of our own Empire, but of the whole civilized world.

THE DINNER,

We regret to say, was pecuniarily a loss to the society. Preparations were made on quite too large a scale. The fair being held so early in the season, many farmers had not yet got through their fall work. Thousands did not in consequence attend the fair at all, and of those who did, hundreds left for their homes during Wednesday and Thursday; which, together with the absence of the Governor General, very well, account for the large expectations of the dinner committee being disappointed. We copy the following report of the toasts, speeches, &c., from our contemporary the *Examiner*, the assistant editor of which was on the spot. On comparing our notes with his, we find them so nearly alike that we spare ourselves the trouble of writing them out.

The dinner, on Thursday night, at Mr. McPherson's warehouse, a room of extraordinary dimensions, was a partial failure in point of numbers. Seven or eight hundred were expected, but about one-third of the tables were without occupants. The failure was probably owing in part to the price of the ticket being placed at a dollar; but in making the arrangements, the committee no doubt had an eye to the somewhat remote probability of the Governor General being present.

The President was supported on his right by E. W. Thomson, Esq., and on the left by Professor Johnston.

The following toasts were given from the chair:

"The Queen."

Song—"The Queen, God bless her," by Mr. Hill, Mayor of Kingston.

"The Queen Dowager, Prince Albert, and the Royal Family."

"The Governor General."

The announcement of this toast at first elicited a couple of faint "no, no's," which were instantly drowned in the tremendous burst of enthusiasm with which it was drunk.

"The Army and Navy."

Captain Dec. of the Rifles, on the part of the military, and Mr. Marks, on the part of the navy, returned thanks.

Mr. Wetenhall, M. P. P., regretted that some one better acquainted with Lower Canada had not been entrusted with the toast he had risen to propose. He had had little opportunity of seeing the agriculture of Lower Canada, as it had always been in the winter when he had visited that part of the province, and he

had found the ground either covered with snow, or knee deep in mud. We are in the habit of looking down on the farmers of Lower Canada as inferior to us. He could only say that, around Montreal, he had seen some farms remarkably well cultivated. There was one especially, farmed by an Englishman, Mr. Penner, better than any he had seen in Upper Canada. He (Mr. W.) was very well acquainted with the officers of the Lower Canada Agricultural Society, and he could testify that they had done all in their power to improve the agriculture of that part of the country. He spoke in terms of eulogy of the efforts of Major Campbell to improve farming in Lower Canada. It would give great satisfaction to the Agricultural Society of Lower Canada, when they hear that this is the first toast drunk, after the usual toasts. There should be a good feeling between the farmers of Upper and Lower Canada. He begged to propose

"The Lower Canada Agricultural Society."

Mr. Penner replied. He observed that there is one branch in which almost every young farmer who is brought up in Lower Canada learns to excel, and that is ploughing. A straight furrow is much better in every respect than a crooked one. Improvement has taken place in Lower Canada, not only in the cultivation, but also in the stock. There was much truth in the old saying, that "much of the breeding goes in at the mouth." He paid a high compliment to Major Campbell, for the interest that gentleman has taken in improving the agriculture of Lower Canada.

Hon. Adam Ferguson bore testimony to the correctness of what had been stated by Mr. Wetenhall. Mr. Penner's farm is a garden. He had gone over it, examined the many attractions it presented, and concluded the walk with a glass of the best cider he ever drank in his life. If any man could go over Mr. Penner's farm, take a glass of his cider, and forget all about it, he must be an ungrateful dog. He would propose

"The Agricultural Association of Upper Canada."

Mr. E. W. Thomson replied. He was President of the Association the two first years of its existence. The first exhibition was got up under very adverse circumstances, and after a notice of only seven weeks. Next year the exhibition was held at Hamilton, and, notwithstanding the rainy weather, more than three times the number of things were exhibited. Last year, at Cobourg, there was a great improvement in the arrangements. This time the stock was good, if there had been a falling off in number. The ladies of Kingston had certainly produced as good articles as we have had exhibited on any previous occasion.

Mr. Wetenhall, M. P. P., feared that the toast he was about to propose was so similar to that he proposed before, that it would be difficult to add any thing to his previous remarks; but if we were to drink it in silence, it might be said we were ungrateful for kindness received. When he had been at the State fair of the New York Agricultural Society, the greatest attention had been paid to himself and his fellow Canadians. The Secretary had at once supplied them with badges and tickets; the Americans showed them every attention, and in fact sought out a Canadian wherever he was to be found for the purpose of making him the lion of the day. The President in his address said we were indebted to them for a thoroughfare, but we were indebted to them for a great deal more, for a market for our wheat, but confound them they charge us one-fifth of its value in duty. He would not give the President a rap, or attempt to combat his protectionist ideas, for if he did he should infringe one of the fundamental rules of the Society—that not a word on politics should be breathed. The next exhibition would probably be West, near the Falls, where the Americans would have a good opportunity to come over, and he hoped they would come not as

to-day by twos and threes, but by hundreds and thousands (cheers). He begged to propose,

"The Agricultural Society of the State of New York."

Hon. Adam Ferguson said, if there were no Americans there to reply, he would play the Yankee for once. Mr. F. then replied to the toast.

Mr. Marks proposed
"The Press."

He spoke of the press as exercising an immense influence over opinion, and he desired to see it conducted by able men, free from scurrility and abuse, and giving a proper direction to public opinion.

Dr. Barker, as the oldest member of the press present, replied. It was not fair to complain of the scurrility of the press. The people are to blame in the matter; they can at any time check the scurrility of the press; but in all new countries there is a love of personality, and so long as any considerable number of persons can be found who are fond of personality and abuse, the press will never be wholly free from these faults. He begged to return thanks on behalf of his professional friends.

Mr. E. W. Thomson gave
"The Mayor and the Corporation of Kingston."

The Mayor returned thanks. He begged to propose,
"The President."

The President returned thanks, and gave
"The Executive Committee of the Association."

Mr. Marks replied. He thought the Legislative grant to the Association ought to be increased to £500 a year, and the District where the exhibition was held might raise £500 more. The amount of the Legislative grant, £250, had not been received. If the Committee did not receive it in time to pay the premiums, they would borrow the money, for it would not do to give a due bill to any man who had earned money here faithfully by competing.

The Chairman gave,
"The Health of Professor Johnston."

Professor Johnston returned thanks. No person, he remarked, who knows much about the agriculture of Europe would have expected such an exhibition in Canada as we have witnessed these two days. It would be quite unfair to compare your shows with those in England, Scotland or Ireland; yet I have seen in some respects a much inferior exhibition of the Highland Agricultural Association. That is a true statement, and I am entitled to draw the conclusion that, in an agricultural point of view, Canada is progressing. I hear complaints, and well-founded complaints. But can you expect to control the elements, or the minute fungus that comes we know not whence, and goes we know not where? It is to be hoped that these causes of complaint are passing away, and that in two or three years, the insect and the fungus will be seen no more. The agriculture of any country depends on the rising generation. Within a few years agriculture has taken a step in advance; and this imposes a duty on the young of acquiring what their fathers did not. I was told that the natives of New Brunswick were not so industrious as their fathers were. I do not allude to the Europeans, but to the "blue noses." I know not how it is with you in Canada; but there is a restlessness in the young men of America, which ought to be guarded against. The speaker then recounted some of the advantages that would result from the establishment of an agricultural institution, the necessity and utility of encouraging such works as the *Canadian Agriculturist*; model farms might be established, and a knowledge of the elements of agriculture might be diffused through the medium of the primary schools. You have several colleges in the country, and some of them might have professors of agriculture, who could also superintend the model farms. I mention these as matters which you would do well to

consider, and if you do consider them, I feel convinced you will come to a right conclusion.

Mr. E. W. Thompson proposed the health of the judges, many of whom were ladies, and had most arduous duties to perform.

Mr. G. A. Barber of Toronto, returned thanks.

From the Chair—

"The Highland Agricultural Society of Scotland, the Royal Agricultural Society of England, and the Royal Society of Ireland."

Hon. Adam Ferguson returned thanks. He had sat for four or five years at the Board of the Highland Society of Scotland. About fifty years ago, some half dozen persons were dining together and taking claret, all of them proprietors, and one of them his father, began to think if they could not do something more for agriculture than drink success to the Highlanders. That was the origin of a society that now counts its thousands of members and distributes its thousands. The farmers ought to be well educated; they should know something of the laws of the country, should be acquainted with chemical science and botany; know all the points of cattle and their organic structure. He had a toast to propose, and he did not know how they came to put it into the hands of an old grey-headed fellow like him; but he was always willing to do his duty towards the ladies. Hoping they would get their heart's desire in getting good husbands, he begged to propose,
"The Ladies."

Mr. Mackenzie, of Kingston, a year-worn bachelor, replied in a jocular speech, altogether very funny, and a little lengthy. He gave

"The Ploughmen of Whitby."

Mr. Peter Perry replied. He explained the advantages of good ploughing. The farmers he considered the first class of the community, the mechanics next, and the merchants third. The farmers must become their own legislators, and no longer entrust their most important interests to a lot of pettifogging lawyers. He dwelt at considerable length upon the commercial position of the Province. We ought to ask England to endeavour to obtain for us reciprocal free trade with the United States; and, in the event of the Americans refusing, to impose upon their produce admitted into England, the same rate of duty which they imposed upon Canadian, when imported into the United States. If England refused to act upon our petition, we ought then to take the matter into our own hands, abolish our customs, admit English goods free of duty by the St. Lawrence, and he would defy the devil to prevent the States bordering on Canada, from being filled with smuggled goods. (Laughter and cheers.) He concluded by giving,

"The Ploughmen of Canada."

The assembly then broke up. The whole proceedings of the dinner passed off with enthusiasm and the best possible feeling.

WELLAND CANAL.

We insert below the amount of Tolls received, from this important Canal, during each of the first four months after the opening of navigation, for the years 1848-49. The increase of the present year amounting to 53 per cent. over the last, is a result full of promise and encouragement. Our public works are now bidding fair for yielding a large revenue to the country; and the amount must be annually increasing as the resources of the great west become opened up. We hope the liberal prize offered by His Excellency the Governor-General will induce several competent hands to enter into honourable competition, that the connection between our improved water communica-

tions and the great interests of trade and agriculture, may be fully and truthfully set forth.

1849.		1848.	
April	£2010 14 4	April	£1745 17 9
May	5916 4 4	May	4650 4 1 1/2
June	5570 7 9	June	2761 4 6
July	4496 14 2 1/2	July	2566 11 9 1/2
	£17,994 0 0 1/2		£11,723 18 2
	11,723 18 2		

Increase in 1849. £5,270 1 10 1/2

(CIRCULAR.)

To the Editors of the *Agriculturist*.

Cobourg, Sept. 22, 1849.

GENTLEMEN.—I beg leave through you and all the public newspapers of the Province, to apologise to the Delegates of the New York State Agricultural Society, who honoured us with their presence during part of our exhibition, for having neglected to read their gratifying letter at the dinner. The bustle and confusion, at the moment this letter was handed me, entirely prevented my recollection from calling it up at the proper time.

I trust, however, that all the papers who may notice our proceedings, will be good enough to copy the enclosed, as also this apology; by which means, I trust, some reparation to the New York State Agricultural Society who honoured us with this delegation, as well as the distinguished gentlemen who composed it, will be made.

I am, sir,

Your obed^t servant,

H. RUTTAN,
President *Ag. As. U. C.*

(COPY.)

Kingston, Sept. 20, 1849.

H. RUTTAN, ESQ.,

President *Provincial Agricultural Association*.

DEAR SIR,—It is with great regret that we are obliged, by imperative engagements, to leave this city without partaking of your hospitalities at the Agricultural Dinner, to which we have been favoured with your invitation.

Permit us to express to yourself and to the officers of your Association, our most heart felt thanks for the attentions which have been shewn us, and the facilities we have enjoyed of examining your Exhibition, so creditable to your Association and to the Province. We trust that the interchange of delegates between your Association and our Society will be continued, and prove, as we trust it has heretofore, most salutary.

We ask you, Sir, to offer on our behalf to your Association at your dinner, the following sentiments:—"The Provincial Agricultural Association of the Province of Canada; its exhibition has been most gratifying to the Delegates from the New York State Agricultural Society, and they desire, and trust, that its future history will be one of continued increase, and result in great good to the agricultural interests of Canada."

We have the honour to be,

Most respectfully, your obed^t servants,

B. P. JOHNSON,	} Delegates.
Cor'g Sec'y N. Y. State Ag'l Society.	
J. M. SHERWOOD,	
Ex-President.	
HENRY WAGER,	} Delegates.
Member of Ex-Committee.	

It is calculated that the prime cost of the materials used in England and Wales to produce artificial light, viz., coal, oil, tallow, camphine, &c., cannot be less than £11,336,000 per annum.

NEW YORK STATE AGRICULTURAL EXHIBITION.

This important affair came off during the second week of September, at Syracuse; and from all we can learn, it has been eminently successful. In point of numbers, both as regards stock, implements and visitors, it far outstripped any of its predecessors, which is saying a good deal, as such of our readers know who attended last year's show at Buffalo. The weather was delightfully fine; and the show grounds were conveniently situated on high ground, about a mile from the city, commanding on all sides extensive and picturesque views. It would be difficult to find a prettier spot for such a purpose. The countless numbers of well dressed, and, what is better, well behaved people, both on foot and in carriages, pouring in and out the extensive show grounds in one unbroken file, with enjoyment and good will depicted on their countenances, presented a grand and imposing spectacle. We have neither space nor time at present to go into any particulars, and as yet have seen no authenticated reports of the show, which will doubtless appear in the American Agricultural papers. We can only say, in general terms, that such an immense display of live stock and farm produce, with an endless variety of mechanical, horticultural, manufacturing and artistic productions; a large portion of which, being of a high order of merit, are most honourable to the empire state, indicating, in a manner not to be mistaken, the intelligence, enterprise, and rapid progress of its people. Only think that some forty years ago the whole country surrounding this flourishing city was an unbroken wilderness! We must not omit to mention that Professor Johnston's address was received with loud applause by listening thousands; it was a production worthy the high standing of its author, and we hope to transfer it to our pages the earliest opportunity.

AGRICULTURAL DISCUSSIONS.

These form an important feature in the proceedings at the annual fairs of the State of New York, which we should like to see adopted at our own. We have now had four annual meetings of the Provincial Association; and though many of the best and most intelligent farmers in Canada have been assembled on these occasions, no public discussions have taken place upon any of the important subjects that invite the attention of the Canadian farmer. The amendment of the present defective statute relating to agricultural societies, and the government grant; the means that should be adopted for collecting information and statistics upon the agriculture of Canada, and the publication of reports and transactions; the establishment of model farms, and the introduction of agricultural studies into the common schools; the establishment of a chair of agriculture in the University—these and similar matters, besides the thousand and one moot points that arise in practical farming, should engage the attention of the enterprising and intelligent farmers that assemble from all parts of the country at these annual gatherings. Information would be elicited, false notions dispelled, enterprise stimulated, united action secured,

and well-considered plans determined upon and set in motion—all these and many other beneficial results would be speedily brought about by meetings and discussions, properly managed, on these occasions. We hope that the Directors of the Association will see to it, that proper arrangements are made for holding such discussions at the next fair, in the Niagara District: suitable subjects should be selected, and some person assigned to introduce them beforehand.

The following report of a discussion at Syracuse, is a sample of those which are held at the New York State fairs. We copy from a Syracuse paper. The report is of course greatly condensed, but the outline will give a tolerable idea of the debate. The subject, we need not say, is a very important one, and, as our readers are aware, has been brought under public notice here by the editors of this journal on former occasions.

MEETING ON THE SUBJECT OF THE AGRICULTURAL SCHOOL.

A conversational meeting, for the discussion of the above subject, was held at the 1st Presbyterian church, last evening.

Mr. DeLafield, of Seneca county, on taking the chair, after having stated the object of the meeting, proceeded to remark that if he was not mistaken, about seven-eighths of the population of this state were agriculturalists, and hence the necessity of such an institution as the one proposed. The subject had already attracted the attention of the legislators of this state, and a movement had been made in reference to this important matter. He had often asked himself the question, how it was that the practical farmers had paid so little regard to this subject? It struck him that they, of all others, needed education—an elementary education in the various branches of knowledge. The farmer needed a knowledge of law to enable him to act in a judicial capacity; a knowledge of medicines, in order to encounter the diseases to which he is subjected while far away from the places where medical skill can be obtained. In short, he needed a general knowledge of the various branches of science. He hoped if there were lawyers in the house, they would not be offended when he said that the farmers could settle their disputes without their aid, and there was no actual necessity for their services. Farmers were too content to let their children receive only the common rudiments of education; they needed something more; they needed a direct knowledge of the matters with which they had to deal. Our schools and colleges instruct their sons in the more abstruse departments of education, but unfortunately led away their minds from the cultivation of the earth, and hence were of little use to the farmer's son. The farmer's son needed such an education as would enable him to cultivate the earth intelligently—to know what he does and why he does it—to know from facts derived from research, that what he does is right, and not because his father or his neighbors did so before him.

Hon. Samuel Chever, of Saratoga, apologized for not coming prepared to speak, by saying that his friends had taken the liberty of posting him up as one who was to open the discussion in the absence of Mr. Blunt, of N. Y. and this was the first notice he had of the part he was expected to take. He proceeded to remark that education upon any subject presupposed the want of it. He found that this subject of an Agricultural School met with more opposition from farmers than from any other class. Professional and educated men readily yielded assent to it. But, says the farmer "what do we want to know about your chemistry and your geology, in order to raise our corn and potatoes? We know it all

now." The fact was, the farmer needed education in his profession just as much as the lawyer and the physician, who were obliged to spend years of time to qualify them for success in their pursuits. The farmer had a mistaken notion that his was a subordinate pursuit. Was it so? What progress would the merchant, the manufacturer, and the mechanic make, with as little knowledge of their respective occupations, as the farmer has ordinarily of his? Such a question might startle those who can raise such good crops; but might not the fact of their raising fine crops be perchance because they had hit upon the course which science indicated? What did they know of the nature of the soils they cultivated? What could they tell of the composition of clay, sand or muck? Science told us that a fertile soil possessed certain elements, and that the observance of one or more of them produced sterility. The farmer in order to remedy the defect in his soil, tries one after another of the catalogue of ingredients, and perhaps at length gives up his farm, and goes to the west. Another takes the same soil, and by ascertaining what is wanted in it, brings it back to fertility. This was the result of science, which the former occupant did not possess.

It was important to know what elements were contained in the manures applied to the soil. Farmers ought not to expect "to gather grapes of thorns, or figs of thistles."

The subject of draining was another on which the farmer should be enlightened. Draining, to be sure, was not of so much importance in this country as in England and Scotland, and many parts of Germany. With them scarcely a farm but contained some marshy spot where it was needed.

In regard to fencing, the material for the purpose was becoming exhausted, and it was becoming necessary to resort to economy, and to other modes, such as ditching and hedging.

Then in relation to farm stock, who could point out the defects in animals, tell what signs indicated power, endurance, or sprightliness? How often were farmers made a prey to the acts of the horse-dealer? who made them believe that there was something defective in an animal which he was anxious to purchase. How little did they know of the diseases of the horse, and of the remedies to be administered.

In regard to the soil, chemistry was beginning to teach what materials they had to deal with, and how they were to mix them up. What would we think of a man who should go into a laboratory and mix up promiscuously the various chemical ingredients, in order to see produced certain results? So in regard to farming, it was necessary to go to work intelligently.

Geology was pointing out the spots where they could expect a good soil; mineralogy was lending its aid. The results of the naturalist were becoming of immense value in ascertaining the habits of the insects that infested vegetation, with a view to arrest their ravages. Farmers needed to know that theirs was not a subordinate calling of the second or third rank. This idea was inherited from their ancestors across the water, where the men who cultivated the soil were hirelings and subordinate to the land owners. The farmer's occupation was first of all others, and it was impossible for it to become by education anything else than the highest and most noble of all.

It may be said that it would cost a great deal of money, some \$50,000, to build and endow an institution such as was desired. Was there any reason why farmers, as well as all other classes, should not ask for a pecuniary bounty from the State? The revenues were principally derived from the canal tolls, three-fourths of which came from the transportation of the agricultural products of the farmer, and the merchandise received by him in return. The amount of canal tolls was about \$3,000,000 annually

All they asked was, to set apart one month's tolls to found this school. Was that too much? Could legislators refuse this sum to the farmers who were not in the habit of asking much for themselves?

Prof. Johnston, of England, was invited to take part in the discussion, but excused himself on account of fatigue.

Prof. Norton, of Yale College, being called upon, said, that for two or three years, he had been engaged in giving instruction in scientific agriculture, and he had found the great obstacle in the way of improvement in farming, from the fact that the farmers thought they knew as much as was necessary. In the State of Connecticut, three-fourths of the legislators were farmers; yet it was with the greatest difficulty that a small appropriation could be procured for the diffusion of this branch of knowledge. The fallacy of the argument that farmers knew enough, was shown by the deterioration of farms in many parts of the country. As to any plans, he was not prepared, nor did he think it proper for him to recommend any particular one, only he was strongly in favor of the general subject of education among farmers.

Mr. Buckland, of Canada, being invited to give his views, said, he concurred in most of the views which had been presented in relation to the connection of science with agriculture; but thought that the tendency of the high scientific attainments recommended were scarcely compatible with ordinary habits of farm business. What was wanted in his opinion, was a sufficient encouragement to really scientific men to induce them to give their time and services to the subject. An education in the science of agriculture might be given in the common schools and higher institutions of learning, sufficient for all practical purposes, provided such instruction be practically illustrated by the operations of the farm.

The Chairman submitted a few remarks, stating what progress had been made in the district where he resided, mainly through the influence of a small society that was formed some years ago. One man, who at first derided the idea of science being applied to agriculture, at last came to one of the members for information on a particular subject, and generously tendered the individual \$3.

Mr. Allen, of Buffalo, followed with some remarks, which we have not space to give, and offered the following resolution:

Resolved.—That this meeting recommend to the next Legislature to pass a law making an appropriation for an Agricultural School.

Mr. Evans, of Madison County, desired to say a word or two, for the purpose of showing that a knowledge of agricultural science did not tend to create a distaste for manual labor in farming, but on the contrary, he had found upon introducing this branch of study into the institution with which he was connected, that the pupils became more and more anxious, as they pursued their studies, to follow the occupation of farming.

The meeting was further addressed by Messrs Chever, Buckland and others, and then adjourned to meet on the following evening at the same place, when Professor Mapes of New York, would be present, and submit some remarks upon the subject.

MANAGEMENT OF THE PROVINCIAL ASSOCIATION.

To the Editors of the Agriculturist.

Nelson, October 6, 1849.

GENTLEMEN,—I take the earliest opportunity, since my appointment as president of the Agricultural Association of Upper Canada, of addressing you on the system of management adopted by that association.

The working of this system has now had a fair

trial on four different occasions, and I believe no individual will be found bold enough to assert that on any one of these occasions it has worked well, or that we can reasonably hope for the introduction of an *uniform* system of management, until our present system has been entirely changed.

Hitherto the local committees have exercised power which, so far as I know, was never delegated to them by the Board of Directors; and as each local committee is of necessity composed of inexperienced men (so far as transacting the business of the society is concerned), it is no wonder that at every succeeding exhibition we have had the blunders of the preceding ones repeated; and so long as the local committees are allowed to assume the legitimate functions of the Board of Directors, instead of giving their valuable assistance in managing those parts alone of the business which are of a purely local nature, just so long will we have a repetition of blunders, which have already nearly destroyed the Association.

I was glad to see that Mr. Marks had proposed a resolution for the purpose of affecting some change in our management. I should be glad to have a copy of it; as, in case it should not contemplate as great a change as is necessary, I would take the opportunity of corresponding with Mr. Marks.

I am preparing a letter on the subject, for your valuable paper, and will have it ready for the November number.

I remain, gentlemen, yours, truly,
JOHN WETENHALL.

SUGGESTIONS FOR ANALYZING, &c.

Chatham, Western District,

August 14, 1849.

To the Editors of the Canadian Agriculturist:

GENTLEMEN,—As I believe you feel an interest in the well-being and welfare of mankind generally, I would beg to submit to your consideration the propriety of making analyses of the following articles, and publish the results in the *Canadian Agriculturist*, for the information of all whom it may concern, viz.:—To ascertain the potatoe disease, analyze equal given quantities of sound, and also partially decomposed or rotten potatoes; set the constituents down, in both cases, and see the difference; this will show what is absent in the rotten potato to make it sound, and also the constituent to prevent the rot when applied. Rust on wheat, sound and unsound straw; smut, sound and unsound grain; different kinds of weeds, mustard, red-root, melons, &c., giving their vulgar name as well as botanical, that farmers may know them at a glance—the latter particularly, with a view of supplying minerals in certain proportions to the soil, so as to promote the growth of large, plump grain, &c., and be too strong for weeds, or a great part of them, thus lessening the labour of hoeing and weeding, &c. You have observed that in land containing considerable marl, and being well drained, weeds are not near so numerous as they are where there is a predominance of vegetable mould and moisture. Also, as a matter of still greater importance, analyze human blood,

say at 5 years old, 10, 15, 20 and 25, then 50 or 60, setting down the age and proportions of principles found, opposite the age in each case—that is, of persons in good sound health, and first-rate joyous spirits, at the different ages mentioned; then again at the same periods—5, 10, 15, 20, 25, 50 and 60—the blood of weakly individuals, say labouring under fever, ague, rheumatism, cholera, and other fearful and distressing complaints; set them also down opposite their respective ages—*this must be quite true and correct*—and then, by comparing the proportions of principles found in the blood of sick and healthy persons, you will see what is wanted in the debilitated, unsound or weak blood, to make it good and sound; for just according to the state of the blood, so will the health be: if pure, the health will be good, vigorous and wholesome also. Let the terms used in the explanation of the principles be as plain as possible, so as to be easily understood; and also the grain, vegetables, meat, milk, fruit, &c., containing the greatest amount of good and wholesome principles, and the state in which it ought to be used—as, should flour be bolted very fine, or should not the greater part or whole of the shorts be mixed with the flour, to make the most wholesome or best blood. The blood of different animals deserves enquiry: indeed all grains, flesh, vegetables, fruits—every thing that is used by man and his domestic animals, horses, cattle, sheep, &c.—should be analyzed, to see which is the best adapted to the blood of each; of course the best blood of each must be analyzed also, so that the constituents in the blood of each animal may receive suitable nourishment—for instance, the blood that contains much carbon, will require grain that contains this carbon in the greatest abundance, and the animal will thrive and flourish, or grow better and smarter, the more he gets of it—not too much, however. It would be a treasure for the farmer to know and avail himself of all this!!! and the position which you hold at present points you out as the good instrument. Even your own interest depends on the truth and intelligence of your periodical; for a work of this nature, being cheap and new, and enjoying also as yours does a very wide circulation, will be more eagerly sought after and read with more avidity than books. Do not be afraid of giving the people too much knowledge, for it tends to their virtue and prosperity; knowledge and virtue, joined hand in hand, will make the people happy, or in other words, love each other. I hope you will be able to have it out in the September number, or at least the most important part of it. I have written to the editor of the *Genesee Farmer* also, to publish an analysis in his paper as above. Which will be the most correct? I enclose you a dollar, for which you will please send me a copy of your journal from the commencement of the year, and oblige

Your humble and obedient servant,
MALCOLM WEIR.

[We insert our correspondent's inquiries, and shall be glad to receive any replies from our scientific readers. In case we do not, we will consult the best authorities, and give our correspon-

dent the results of trust-worthy analyses. As to our going into original investigations of some of the most difficult branches of physiology and organic chemistry, we profess ourselves utterly incompetent. Such matters involve considerations belonging to the highest departments of experimental science; even the analysis of a soil (qualitative, and quantitative) requires much readiness at manipulation, considerable time, and more patience than many people seem to imagine. The analysis of vegetable and animal products is far more delicate and difficult. We have known from five to ten guineas given to competent chemists in England for a single analysis of inorganic substances. Unless experiments are conducted upon correct principles, and the greatest care used at every stage of the process, the result can only mislead.]

DURHAM CATTLE.

To the Editors of the *Agriculturist*.

Woodhill, Canada West, Sep., 1849.

GENTLEMEN,—I take the liberty of soliciting a corner of your journal, to correct (what I conceive to be) an erroneous impression lately made by the publication of an article relating to *Improved Short Horn Stock*. It appears that Mr. Sherwood of Auburn, N. Y., has lately added to his well known valuable herd, a bull, imported from Mr. Bates of Kirk-leavington, county of York, England. I entirely agree with Mr. Stevens, who purchased this bull for Mr. Sherwood, that, taking into due consideration *all the qualities* which render cattle profitable, there is probably no herd in England which will bear a fair comparison with that of Mr. Bates. This I most readily concede, but I consider the estimate made of Mr. Sherwood's bull as being rather "*broad-cast*" sowing, when it is asserted, that "*breeders will nowhere else in North America find Mr. Bates's blood in like perfection*". If Mr. Stevens means only to express his personal opinion upon Mr. Sherwood's bull, as a means of obtaining the *Duchess blood* through an animal which he considers to be the finest of that tribe in North America, then his opinion will go for its own value, and no more.—If he means to go further than that, I, for one, demur. I knew Mr. Bates for more than 35 years; I have been acquainted with his stock since 1812. We were ever on terms of the most intimate friendship and correspondence, and I take upon me to assert, without hesitation, that the *great and precious feature of his stock*, what he always considered his special boast and treasure, was, his possession of the *old, pure, Duchess blood*. To obtain this, he neither spared money nor pains, and I well remember the pride with which he exhibited to me, at Halton Castle, Northumberland, where he then farmed, "*Young Duchess*," a heifer of a year old, for which he had paid Mr. Colling *one hundred and eighty guineas*. Now, sir, there is no doubt whatever that this highly prized "*Duchess blood*" has been for

years in the possession of Mr. Vail of Troy, and many valuable animals have been imported by that gentleman *direct from Mr. Bates*. Mr. Vail knew Mr. Bates well, and I am confident he will readily confirm my assertion, that it was upon the *Duchess* blood Mr. Bates always piqued himself, and that the introduction of *Belvidere* (a very noble bull) by Mr. Bates into his herd, was more to escape the evils of *in and in*, too long continued, than for any new qualities which he expected that bull to impart. Old *Ketton*, by *Favourite* (see B. Herd Book), was the animal which gave value to Mr. Bates's herd, along with the *Duchess* blood; and that same tribe of improved short horns may now be had, in the greatest purity and perfection, from Mr. Vail. I hope, sir, that no one will misunderstand me, or suppose that I desire for a moment to depreciate Mr. Sherwood's importation. Mr. Sherwood has been long distinguished for his zeal, skill and success as a breeder of short horns, and (I may add) not more so, than for all the qualities which characterize an honourable and an excellent man. I know that he has long been satisfied of the superior qualities of Mr. Bates's blood, and has introduced it into his own herd. I have myself a heifer purchased from him, got by *Symmetry*, of Mr. Bates's blood, for which I would not accept any ordinary price; and I am well convinced, that the bull which Mr. Bates has now sent to him, will prove an animal of the highest value. All this may be quite true, and yet it may be unfair, and may mislead the public to assert, that from Mr. Sherwood, and from *him alone*, the *Duchess* blood can be procured.

I am aware that these remarks will, by some *candid friends*, be ascribed to a source not altogether disinterested, and it will be announced, as a sufficient reason for laying them aside, that the writer is known to have partly derived the blood of his own herd from Mr. Vail. Let this go for what it is worth, and I shall content myself with expressing a hope that every man striving to improve his stock, may have the like satisfaction, as my friend, Mr. Weitenhall, and I both enjoy, in the bull which we have been so fortunate as to procure from Mr. Vail, got by *Meteor* out of *Lady Barrington*.

I have the honour to remain,
Gentlemen,
Yours very truly,
ADAM FERGUSSON.

INSECTS DESTRUCTIVE TO HOPS.

To the Editors of the Agriculturist.

GENTLEMEN,—The valuable hints I have received from your paper, and the zeal you have evinced in the cause of agriculture, induce me to address you upon a subject of the utmost importance to the "hop growers" of this part of Canada, for I feel assured it will meet at your hands with that attention which the graveness of the case requires.

A few years since, an animal, called here "the measuring caterpillar" (from its striding mode of progress) made its appearance in the early part of July, upon the hops. By close observation, I have been able to trace this destructive little ani-

mal to the egg, which is deposited upon the under part of the leaf by the miller moth; in the latter part of June: at a quarter of an inch long it commences its destructive peregrinations, and in the course of a few days arrives at its full length of one inch,—of a pea green colour, with the power common to the tribe, of forming a web. For the first year or two it did not affect the crop much, but their numbers have lately increased to such a degree, that a hop grower, with whom I was speaking on the subject, told me he would not have 12 cwt. off five acres; and I have heard of one grower whose crop is totally destroyed.

Burning sulphur to windward of the hop-yard, and casting lime amongst the vines when wet, have been tried, but without effect.

Shaking them off, by jarring the poles, and killing them upon the ground, is the only plan now adopted in order to save what is left of the crop,—400 have dropt at a shaking from one pole.

Even this expensive and tedious proceeding is not attended with success, three generations having appeared in one season. If means are not discovered of destroying this insect, hop culture must be given up in this part of the country.

Hoping you will excuse the liberty a stranger takes in trespassing on your time by requesting an answer to this,

I have the honour to remain,
Gentlemen, your ob'dt servant,
WM. MAGRATH.
Credit P. O., C. W.

[We shall be obliged if such of our hop growers as have had practical experience in the matter contained in our correspondent's letter, would favour us with the result of their observations.—The caterpillar referred to we have seen on the hop plant in England, but never heard of its doing any serious injury—perhaps from the fact of its being unfrequent. The *aphis*, or "fly," is the great pest, and it is often destructive to the plantations in England. We will keep this subject in mind.]

MARKS OF A GOOD WORKING OX.—Mr. Asa G. Sheldon, of Wilmington, who has great experience in cattle, particularly in working oxen, and is regarded as the best authority, gives the following:—

Long head, broad and oval between the eyes; the eye full, keen and pleasant. Such marks denote ability to receive instruction and a readiness to obey. The short-faced ox starts quick at the whip, and soon forgets it. The black-eyed ox is inclined to run away. An ox with very large horns near the head is apt to be lazy, and he cannot endure heat well.

Forward legs straight; toes straight forward; hoof broad, not picked; the distance short between the ankle and knee. These properties enable an ox to travel on pavement and hard ground. If the ox toes out, the strain comes on the inside claw, and when travelling on a hard road, he will be lame at the joint between the hoof and the hair. When the toes turn out the knees bend in. An ox with crooked knees is apt to become lame by holding heavy loads down hill.

Breast full; straight on the back; round ribs, projecting out as wide as the hip bones. These are indications of strength and a good constitution.

Horticulture.

SELECTION OF GOOD FRUITS.

We extract the following interesting remarks on fruit culture and selection of varieties, by that experienced New-England cultivator, Samuel Walker, Esq., of Roxbury, now President of the Massachusetts Horticultural Society, from the Report of the American Institute.—*Horticulturist*.

In submitting the following list of the best American varieties of apples, pears and plums, in juxtaposition with the best European varieties, it is not my intention to make any invidious comparison; on trial—the truth, the whole truth, will be amply sufficient for any purpose. I shall therefore leave the result to the hands of the best judges—the cultivators—simply stating that I shall select the best varieties from the catalogues of the New and the Old World.

APPLES.

American Varieties.

1. Early Harvest,
2. Williams' Apple,
3. Benoni,
4. Porter,
5. Pomme de Neige,
6. Baldwin,
7. Yellow Belle Fleur,
8. Newtown Pippin (green),
9. Rhode Island Greening,
10. American Golden Russet.

European Varieties.

1. Early Red Margaret,
2. Red Astrachan,
3. Sops of Wine,
4. Gravenstein,
5. Ross Nonpareil,
6. Dutch Mignonne,
7. Ribston Pippin,
8. Cornish Gillyflower,
9. Herefordshire Pearmain,
10. English Golden Russet.

I will not carry out the comparisons further, but submit a list of American varieties, all of which are deserving of extensive cultivation, viz. :—

Large Yellow Bough, Chandler, Fall Harvey, Jonathan, Minister, Hubbardston, Nonsuch, Rambo, River, St. Lawrence (Corse's), Northern Spy, Esopus Spitzenburgh, Summer Queen, and Ladies' Sweeting.

PEARS.

American Varieties.

1. Broadwood,
2. Dearborn's Seedling,
3. Pratt,
4. Knight's Seedling,
5. Tyson,
6. Seckel,
7. Cushing,
8. Heathcot,
9. Andrews,
10. Buffum,
11. Dix,
12. Lawrence,
13. Columbia,

European Varieties.

1. Citrou des Carmes,
2. Passaus du Portugal,
3. Williams' Nonchretien,
4. Flemish Beauty,
5. Rostizer,
6. Fondante d'Automne,
7. Bezi de la Motte,
8. Doyenne Blanc,
9. Louise Bonne de Jersey,
10. Doyenne Gris,
11. Beurre Diel,
12. Duchesse d'Angouleme,
13. Glout Morceau.

In addition to the above, I will add a list of European varieties of great merit, viz. :—

Beurre d'Arenberg, Beurre d'Anjou, Beurre Bose, Eyewood, Henry IV., Van Mons Leon Le Clerc, Marie Louise, Winter Nelis, Paradise d'Automne, Passe Colmar, St. C. islain, Vicar of Winkfield, Urbaniste, and Echasserie. For baking—Belmont, Black Worcester, Catillac, and Uvedale's St. Germain.

PLUMS.

American Varieties.

1. Jefferson,
2. Columbia,
3. Washington.

European Varieties.

1. Green Gage,
2. Purple Gage,
3. Coe's Golden Drop.

To this lot of plums, I will add the following American varieties, as worthy of a place in every good collection, viz. :—

Purple Favorite, Huling's Superb, Imperial Gage, Lawrence Favorite, Bleeker's Gage, and Bingham.

CHERRIES.—The best varieties of American and European cherries are very dissimilar. I shall therefore submit a list of such varieties as I consider of the best quality, viz. :—

American varieties.—Sparhawk's Honey, Downer's Late, Sweet Montmorency, Manning's Mottled, Downing's Red Cheek.

European varieties.—Black Eagle, Black Heart, Black Tartarian, Downton, Knight's Early Black, Bigarreau,

Bigarreau Holland, Elton, Florence, Belle de Choisy, May Duke, and the Late Duke.

By the foregoing statement, it will be perceived that among the well established apples and plums in this country, a majority are the products of America. Of pears and cherries, the greater number have been imported from Europe.

I will now proceed to the second part of my subject, and notwithstanding my esteemed friend, Thomas Bridgman, Esq., has with ability and good judgment, brought the subject of seedlings under the notice of the managers, yet I shall not refrain to state all I intended to do before I received Mr. Bridgman's able report.

I am aware when a word of caution is to be spoken, or an error pointed out, that it should be done with candor and kindness; in that spirit the following remarks are submitted :

SEEDLING FRUITS.—My object is to point out an error, may I not rather say, a weakness, on the part of some cultivators of fruits, to overrate their own productions, more especially so when they raise a seedling apple, pear, plum, peach or cherry, having any pretension to merit. If their production is of the best quality, and possesses but a slight point of superiority, say only a shade of color, or a single increase of size, in addition to the good qualities of the most choice variety of that class of fruit in the present catalogues, that alone will commend it to other persons, and they will mete out its praise in due season.

No seedling should be recommended for extensive cultivation until it shall have been proved to be superior in some respects to the variety it most resembles. For instance, if any person should raise a seedling plum one-fourth larger, and equal or superior in flavor, more beautiful in its appearance, and more productive than the Green Gage, then the new variety would soon find its way into every good collection of plums. The same remarks will apply to the Newtown Pippin apple. The person who shall be so fortunate as to raise a seedling apple of equal flavor, better color, and a tree more thrifty and productive than the Green Newtown Pippin, will have accomplished something worthy of record and a name. But cultivators, like young fond mothers, are apt to consider their production to be a "non-such;" time, alas! often convinces them of their mistake; and when too late, they find they have only deceived themselves.—*Albany Cultivator*.

PLANTING STRAWBERRIES.—As a general rule, the spring of the year has been found much the best season for planting out beds of the strawberry. But it often becomes necessary to perform the operation during summer, or early in autumn. If, at this season, the weather should prove quite dry, a regular and abundant watering for several days does not always prevent the loss of a considerable portion of the plants. To obviate this difficulty, the writer has adopted the following very simple treatment, which has been quite successful even at midsummer, and in the midst of the recent extraordinary drouth. Nearly all the leaves are pinched off from the plants, except the central and half developed ones; the roots are dipped in a vessel of soft mud, giving them a thick coating; when set out, the earth is well settled about them by means of a copious watering; and then about two inches of rotted manure spread upon the surface. This will keep the soil sufficiently moist with one daily watering, if the weather be very dry, and much less frequently if it be moist.

DIFFUSION OF SEEDS.—In boring for water at a spot near Kingston-on-Thames, some earth was brought up from a depth of three hundred and sixty feet. This was carefully covered with a hand-glass, to prevent the possibility of the seeds being deposited on it, yet in a short time plants vegetated from it.

SIGNS OF THE VIGOR, MATURITY, AND DECAY IN TREES.

Signs announcing the Vigor of a Tree.—The branches, especially towards the top, are vigorous; the annual shoots strong and long; the leaves green, vigorous, and thick, principally at the summit, and falling late in autumn; the bark is clear, fine, united, and nearly of the same color from the foot to the large branches. If at the bottom of the veins, or divisions of the thick bark, there appear smaller divisions, which follow from below upwards, in the direction of the fibres, and live bark be observed at the bottom of these divisions, it is an indication that the tree is very vigorous, and rapidly increasing in size. If some of the lower branches, killed by others, are yellow, languishing, and even dead, this is an accidental effect, and is no proof of the languor of the tree. Finally, it is a sign of vigor when branches are seen at the summit of the tree, rising above the others, and being much longer; but it is to be observed, that all trees with round heads do not throw out branches with equal force.

Signs which indicate that the tree is mature.—Generally the head of the tree is rounded; the shoots diminish in length each year, and the farthest shoots add to the length of the branches only by the length of the bud; and the leaves are put forth only in the spring, and become yellow in the autumn before those of vigorous trees, and at this time the lower leaves are greener than the upper. The branches incline towards the horizon, and form angles sometimes of sixty or seventy degrees. These apparent signs, and the thinness of the layer deposited by the sap, indicate that the tree makes but small additions to itself, and now it should be cut down. The nature of the soil should be examined, as well as the kind of tree, to enable a judgment whether the tree should be left to increase still further, or whether it will be more proper to fell it. An exact age cannot be assigned for each species; but it has been observed that an elm, situated in an insulated plantation, may be felled with advantage, when between seventy and eighty years of age.

Signs of decay in a Tree.—When a tree becomes crowned (that is, when the upper branches die), it infallibly indicates, especially for isolated trees, that the central wood is undergoing alteration, and the tree passing to decay. When the bark separates from the wood, or when it is divided by separations which pass across it, the tree is in a considerable state of degradation. When the bark is loaded with moss, lichens, or fungi, or is marked with black or red spots, these signs of alteration in the bark justify the suspicions of alteration in the wood within. When sap is seen to flow from clefts in the bark, it is a sign that the tree will soon die. As to wounds or gutterings, these defects may arise from local causes, and are not necessarily the results of old age.—*Loudon's Magazine.*

HARDINESS OF SWEET APPLE TREES.—In Wisconsin, where the thermometer not unfrequently sinks to 15° or 20° below zero, and where the fertility of the soil induces a very rapid growth in summer, the tenderer fruit trees are often severely injured in winter. A correspondent of the *Prairie Farmer* states that sweet apples are, for the most part, more hardy than acid ones, and better adapted to very severe climates. Out of one hundred and fifty varieties, twenty-two were sweet apples; of the latter, eleven proved themselves more hardy than any other eleven in the whole list, and only three of the sweet apples appeared to be tender.

THE POISON PLANTS.—“Ah, well may a shudder go through the frame as we hear the name of the next, the *Tanghin*, or Poison-tree of Madagascar! ‘Can such a fair young tree,’ we are tempted to exclaim, ‘be

charged with the horrible murders related of that poison? Surely no tale of death is told by these green leaves and not unattractive aspect? Go to the benighted island, and, pointing to its glossy foliage, listen to the recital of the accused use to which this tree is turned which he will tremblingly pour into the ear. In the ordeal of the *tanghin* a great assembly is summoned to witness the trial of an unfortunate wretch, accused, justly or unjustly, of crime. The accused heard, the mock trial concluded, the proof of innocence or guilt is to make the accused swallow a nut of the *tanghin* tree, which is managed by the direction and under the superintendence of the priests. If his stomach is in a condition to reject this frightful poison, he is pronounced innocent, and is instantly released to receive the congratulation of his friends on his fortunate escape. But if he be a man of stronger digestion, his stomach retaining the deadly substance, the demonstration of his guilt is complete, and the convulsive death-struggles of the miserable man conclude the evidence, to the satisfaction of the assembled multitude. It is a mournful truth, that the issue of the *tanghin* ordeal is rather an inclination of the feeling of the priests towards the accused than of his innocence or guilt. It is easy to conjecture how this is managed. Well known to the wandering Indian is the shrub, whose light green bark and delicate foliage make it conspicuous in attractiveness even here—the *Mulioe*-plant. The specimen is from four to five feet high, the natural stature being eight feet; and little could the ignorant spectator imagine, from the innocence and luxuriance of its aspect, that in its vessels run a deadly poison, and in its cells lay locked at the same time the wholesome and excellent food we call cassava!”—*Wanderings through the Conservatories at Kew.*

FLOATING BEE-HOUSES.—In Lower Egypt, where the flower harvest is not so early by several weeks as in the upper districts of that country, the practice of transportation is carried on to a considerable extent. About the end of October, the hives, after being collected together from the different villages, and conveyed up the Nile, marked and numbered by the individuals to whom they belong, are heaped pyramidally upon the boats prepared to receive them, which, floating down the river, and stopping at certain stages of their passage, remain there a longer or shorter time, according to the produce which is afforded by the surrounding country. After travelling three months in this manner, the bees having culled the perfumes of the orange flowers of the Said, the essence of roses of the *Faciium*, the treasures of the Arabian jessamine, and a variety of flowers, are brought back, about the beginning of February, to the places from which they have been carried. The productiveness of the flowers at each respective stage is ascertained by the gradual descent of the boats in the water, and which is probably noted by a scale of measurement. This industry produces for the Egyptians delicious honey and abundance of beeswax.—*Dr. Beven.*

THE BULLFINCH'S WEEDS.—The bullfinch, when caged and fed much on hemp-seed, is particularly liable to become black. Many years ago, at Ederder y, near Belfast, where a pair of bullfinches had been for some time kept, the male died, and the female, whose grief for his loss was very evident, soon afterwards moulted, and assumed a full garb of black. Such being considered equivalent to the widow's “weeds,” was looked upon as almost supernatural; and more particularly so when, after a year of mourning, she, at moulting time, threw them partially off, and exhibited some white feathers in her wings.—*Thompson's Natural History of Ireland.*

It is more difficult to prevent being governed, than to govern others,

Mechanics and General Science.

IMPORTANCE OF SCIENTIFIC KNOWLEDGE TO PRACTICAL MEN, AND OF PRACTICAL KNOWLEDGE TO SCIENTIFIC MEN.

Continued.

Again—scientific knowledge amongst the labouring classes would elevate their calling, and induce many mistaken parents to educate their sons for mechanics, instead of thrusting them into the over crowded professions.

That the legal and medical professions are too much crowded needs no demonstration; the proof is before every body's face. Too many practitioners in both law and medicine, are without *practice*. A few the more fortunate, perhaps the older, or more learned, or best known, enjoy most of the business, and leave the others without even a competence unless derived from some other source. It is estimated that in New York there are some 700 or 800 lawyers and nearly as many Doctors. Of those there are 150 whose annual receipts are not more than £100; another 150 whose receipts are about £60; another 150 with receipts of £30; and still another 150 whose receipts average not more than £8 per annum. This estimate may be drawn in too dark colours, but I have taken it from a work published in New York. The remaining members of these professions are, of course, in the receipt of very large incomes. This may be regarded as a fair picture of the reality in all overgrown cities; in smaller towns and country places, there would not be so great a disproportion of professional men.

A change, however, is taking place in public opinion. On this subject the *New York Spectator* says:—"In the United States, a revolution is proceeding with respect to this matter, which will quietly, but surely tend to beneficial results. The Bar is no longer the resort of the ambitious youth of our country. The mechanical departments are preferred; there are now thirty young gentlemen in this city, who are serving their "time" as ship-wrights, architects, carpenters, &c. In a few years the United States will have the most accomplished mechanics in the world. A new class is springing up who will put the present men in the shade. The union of a substantial education with mechanical skill, will effect this. Indeed already we could name some mechanics who are excellent mathematicians, acquainted with French and German, and able to study books in those languages connected with their vocations. Heretofore fond fathers were wont to educate their sons as doctors or lawyers, to insure their respectability and success. That day is passed. Mechanics will take the lead, and in a few years will supply a large portion of the State and Federal Legislature."

Such is the language of one of the first papers of New York. Similar sentiments have been expressed in other and influential parts—and fortunate would it be for hundreds of young men of the present day, if they would follow such advice.

I would most earnestly recommend the sons of farmers who intend to follow the pursuits of their fathers, to study Chemistry and Natural

Philosophy. Farmer's sons in Canada generally devote the winter to study either at the Common School in their own neighbourhood, or at some public Seminary. No subject would open such a field for useful or interesting observation to the farmer as Chemistry and Natural Philosophy; none certainly would call for so frequent application as the principles of these Sciences. The whole process of vegetation, the germination of the seed, the growth of the plant, the composition of the seed and the plant, the soil and manures, are all appropriate subjects for Chemical investigation. Hence would follow the inquiries: What kinds of soils are adapted for the growth of particular plants? what manures? what culture? what rotation in crops, if any? A few facts will show the importance of a better knowledge of the science of agriculture. The object of agriculture is, of course, to obtain the greatest quantity of grain from a given plot of ground. How does it happen that often there is a luxuriant growth of straw and but little grain? As, for example, in the culture of fine pliable straw for Florentine hats. That kind of culture which will produce particular kind of straw, is very different from that which will produce the greatest amount of grain. Rotation of crops is found in all countries to be absolutely necessary; but in many of the new colonies of America wheat has been grown for a century on the same fields. Why this? Again, crops are not always abundant in proportion to the quantity of manure, even though it be of the best kind and the culture the most careful, during a season the most favourable. Fields which have become unfitted for one kind of grain are not unsuited for another.

Circumstances are constantly occurring to the farmer, which thwart his best calculations. But they are all subject to fixed and irrevocable laws; and were the practical agriculturists familiar with the principles of chemistry, many of these difficulties would be solved. Very little progress can, however, be made in the application of science to agriculture, while so powerful prejudices exist among the farmers. Perhaps another generation must arise, carefully educated in all the principles of science applicable to the growth and culture of plants, ere any important change can be expected.

The principles of natural philosophy are of vast importance to farmers, in the erection of buildings, the construction of roads, bridges, mills, mill-dams, &c., all of which are done, in whole or in part, by the farmers of a new country. The wheel and axle, the screw, the lever, and all the mechanical forces, are brought into constant requisition. I have often been exceedingly pained in observing young men, farmers' sons, wasting their time over the dead languages, or some other pursuits equally useless to them, instead of studying chemistry and natural philosophy, the principles of which would be required every day of their lives. Human life is a journey; and men should carry with them just what they will require, and not burden themselves with a Latin dictionary and Horace, when they need the axe, the lever, or the chemistry.

In every department of life, even the most humble, such knowledge would be of incalculable

benefit to society, for upon their skilful services depend the lives and happiness of the rest of mankind. "The farm servant, or daily labourer," says Lord Brougham, "whether in his master's employ, or tending the concerns of his own cottage, must derive great practical benefit, must be both a better servant and a more thrifty and therefore comfortable cottager, for knowing something of the nature of soils and manures, which chemistry teaches,—and something of the habits of animals and the qualities and growth of plants, which he learns from natural history and chemistry together. In truth, though a man is neither a mechanic nor a peasant, but only having a pot to boil, he is sure to learn from science lessons which will enable him to cook his morsel better, save his fuel, and both vary his dish and improve it. The art of good and cheap cooking is intimately connected with the principles of chemical philosophy, and has received much, and will receive more, improvement from their application." The art of making and stirring a fire, of washing and bleaching, of eradicating stains from cloth, are all conducted on philosophical principles; and those engaged in them would be more expeditious, safer and wiser operators, by such scientific knowledge as would be applicable to their operations.

How greatly has such knowledge elevated the condition of man, and how much higher might it elevate him. Compare the savage, as he roams in his native state through the interminable forests of our vast continent, with the descendants of the European living by his side; and behold what art and science have wrought, even in the ordinary avocations of life. The one lives upon the fruits of the chase, obtained by physical force; the other, confident in his knowledge of the laws of nature, in seed time and harvest, sows and reaps in abundance. The one lodges in his rude wigwam, or cave, or crawls into a hollow log; the other resides "the proud lord of his gorgeous mansion" or neat cottage, erected and furnished by the handy workmanship of a hundred artists, his table spread with the productions of all climes, borne across the mighty deep, and over continents, by the power of wind and steam. The bow and arrow and stone tomahawk are the rude implements of the chase and of warfare of the one; the other, skilful in the arts of peace as in those of war, has converted one portion of the earth, upon which he treads, into the musket, the cannon, and the glittering steel, and another into a combustible elastic powder, which, lighted by a spark, hurls the destructive thunderbolt. The one moves timidly along the beach in his bark canoe, propelled by his own feeble hand; the other launches fearlessly upon the broad ocean, in his proud man-of-war, driven by the winds of heaven, or the vapour of the very element through which he moves, neither tide nor tempest impeding his course. Guided by his faithful magnet, which neither slumbers nor sleeps, he safely traverses the trackless deep, through storms and midnight darkness. If he meets a homeward bound vessel upon the ocean, he tells with unerring accuracy his position on the globe, by a small glass formed of the sand which we carelessly tread beneath our

feet, and, with a few scratches of a pen, informs his distant wife and children and friends of the very spot upon which at that hour he floats. The one moves snail-like over the land, drawn by his dogs; the other flies with the velocity of the tempest, in his steam-driven car. The one strips the covering from the wild beast, and sews it with the thorn and the thong, to his own lumb; the other is clothed with the most exquisite skill, the workmanship of many artists. The one records and transmits his thoughts by the knots of the wampum; the other converts the dirty rag into beautiful paper, and stamps his thoughts imperishably and with lightning speed upon it, and hands them down to coming ages.

But why multiply instances. There is not more difference between the savage and civilized, than between the savage and the beast; and there is not more difference between the savage and civilized, than there might and *may* be between the civilized of the present and no distant day. Can any one suppose that we have attained perfection in the arts of life? Are there no more improvements to be made? Can we add nothing to what our ancestors have left us? Have they ascended all heights, descended all depths, and explored all space? Cannot we, by standing on the heads of our forefathers, see farther than they? If they have applied steam to the car, why may we not apply it to the plough? why may we not sow, and reap and thrash, by steam; nay, and clear away the forest by the same power? If they have applied steam to saw and plane, and fit the board for the building, why may we not apply it to quarry and cut the stone, to make and lay the brick, and plaster the wall? If they have applied steam to spinning and weaving the delicate fibre, why cannot we cut and sew the coat and shoe, the cloak and the gown, by the same process? Who can doubt vast improvements in all the arts of life, when he sees the success of machinery in forming the delicate pin and watch, the exquisite thread of the silk, the cotton, the linen, and the wool; and the weaving of every pattern, performed with more skill than by the mechanism of the hand? Who can suppose that we have reached the goal of human perfection, and crowded all the powers of nature into the service of man, when he sees him commanding the sun-beam to delineate the "human countenance divine," the lightnings of heaven to record his thoughts, the invisible galvanism to illumine his dwellings, the opaque flinty rock and drifting sand turned into transparent glass, calling down the stars of heaven and magnifying the teaming millions of a drop of water.

(To be continued.)

USEFUL AND INGENIOUS IMPLEMENT FOR MANUAL LABOUR.—It must have struck many of our practical readers, witnessing the rapidity with which mechanical operations are performed upon the soil by means of the horse hoe, the moulding plough, and other machinery, that hand labour, armed with few implements, anything, if at all, in advance of the old Dutch hoe, has been left far behind: Within the last few days, however, our attention has been called by the inventor, C. K. Sive-wright, Esq., of Cargilfield, Trinity, near this city, to a working model of an implement, manufactured under his direction, by our able agricultural engineer, Mr. Slight,

of Leith Walk, whereby, *ceteris paribus*, manual labour has at length been placed upon a par with horse power when employed in field labour. The implement thus devised by Mr. Sivewright was originally a grubber of five flat hoes, arranged triangularly in the ordinary manner, and in this state it was found to perform with the greatest facility all the labour usually effected by means of the Dutch hoe in cleaning the ground, stirring the earth between rows and drills, extirpating weeds, and working and pulverizing the soil to the depth of four inches; the flat hoes being so arranged, as, at each entrance, to work a breadth of 17 inches, which, however, might, by means of a contracting and expanding transverse bar at the base of the triangle, be reduced to thirteen inches for going between drills. Mr. Sivewright found, that with this implement he could completely prepare his garden ground at Gargilield, extending two acres, for crops, in many instances, without resorting to the use of any other means whatever; and that, too, with the greatest saving of labour, as it simply required one man to draw it through the ground, and he could do so with great rapidity. We ought to mention, however, that Mr. Sivewright's is a fine light sandy soil, in a beautiful state of pulverization, and presenting less than usual obstruction to the working of machinery. But we have no doubt that in any garden soil whatever, very little more difficulty would be presented to the action of this particular hand machine. Being composed entirely of iron, its great lightness, acuteness and strength, cause it to be very easily worked; and being, moreover, supported by a fore-wheel, as in some of Ransomes' celebrated ploughs, figured in this day's Journal, the shifting of this wheel regulates the depth to which the hoes and tines may be entered in the soil; and once entered, they would undoubtedly cut and loosen the stiffest soil, pulled by a single labourer. The inventor having accomplished this object, was not satisfied, however, until he had succeeded in converting his hand-grubber, by the simple addition of double mould boards (removing four of the hind tines), into an effective drill-plough, both for raising ridges and earthing or mounding up potatoes, turnips, all and plants growing in drills. The fore-tine being left attached to the machine as a cutter, the double mould-boards are joined on to the sides by a hinge passing in front, and the earth thrown up is moulded gently down upon the ridge by means of a comparatively trifling weight hooked on to the back bar of the implement, at the centre. As the implement is drawn along the drill, the turned-up earth, therefore, passes under the curves of the mould boards, and is beautifully, smoothly, but lightly pressed down upon the sides of the opposite drills, without choking up the lower leaves of the growing plant, as is too frequently the case with the drill plough. The weight at first attached to the implement, in order to mould down the earth upon the drills, had been twenty-one pounds; but this was found to be unnecessarily large, and to offer considerable impediment to the labour; though still, a good workman could effect a great deal in a light soil, even with this. A weight of seven pounds, however, has been found by Mr. Sivewright perfectly adequate; and we never saw better or more systematically formed drills than he has thrown up in a half-acre plot of potatoes by means of this implement. The saving of labour is such, that a piece of garden ground, which a man was formerly five days in hoeing, has been worked by one man, with the machine, in one day. For instance, the half-acre plot in question could be earthen up at the rate of ordinary labour of which this machine admits, in six hours, by an able-bodied labourer, or indeed a lad, could therefore accomplish, single-handed, a whole acre in a day of twelve hours. The simplicity of construction, and necessary cheapness of these machines (for we have no doubt Mr. Slight could turn them out at a most reasonable price), commend them very strongly to market-gardeners, cottagers, small farmers, nursery grounds,

gentlemen's and family gardens—in short, in all situations where it is inconvenient, inexpedient, or even impossible to introduce horse labour. Mr. Sivewright, with the utmost liberality, has authorised us to state that he is anxious only for the adoption of it, wherever it may be found useful, and, in fact, makes a present of the invention to the public; nay, in order to facilitate this purpose, he will be happy to send round his gardener with any one desirous of witnessing the work which the implement has performed; and the implement itself is on view at Mr. Slight's, where its advantages we are sure, may be ascertained by any practical person at a single glance.—*Scottish Agricultural Journal.*

ANALYSES OF MANURES.—At a late meeting of the Highland Agricultural Society, Mr. Finne spoke of the great advantage which had been derived by farmers in Scotland from the analyses of portable manures, upon which, he estimated, nearly one-half of the green crop of that country is dependent. The amount of guano, for instance, imported in 1837, was upwards of 220,000 tons. Great adulteration had been practised with guano; and bone-dust had been mixed with ground oyster-shells. Various manufactured manures, of the constituents of which the farmer could not be acquainted, were offered for sale. In illustration he related the following:—Some years ago I joined with two or three farmers in the purchase of some tons of nitrate of soda. None of us derived any benefit from the application of it. Most fortunately I had some left—got it analysed by Mr. Kemp at the College; and when the secret was explained, it was to a great extent mixed with common salt.—I heard of a cargo shipped to a party in London; a chemist was ordered to examine it before taking it from the ship. The adulteration was detected, and immediately the shipload was ordered off to Scotland, and sold amongst the farmers. I once purchased a quantity of guano from a party in Leith. Professor Johnston had given an analysis of it, but the sample sent to him had been very different from the stock. I found upon taking delivery that all was not right. I then had a sample from the stock analysed, and had no difficulty in procuring an abatement of 10 per cent. from difference of value. I cannot conceive how any agriculturist who expends his hundreds a-year upon portable manures is justified in applying them before being tested, and would grudge a few shillings per annum to obtain a chemist of skill who could satisfy him as to the purity of the article upon which he is not only expending a large sum of money, but upon the genuineness of which his green crop, and every succeeding crop in the rotation, is dependent; for, without a knowledge of the nature and properties of the materials employed by the agriculturist, it is evident that the result of many of the laborious and extensive processes incident to his daily occupation must be a matter of mere chance—thus contributing more than any thing else to the precariousness of the profits upon which his prosperity depends. I may be told this is a tenant's question, and let him look after his own interest and he will fare the better; but I hold whatever is necessary for the tenant cannot be dispensed with by the landlord; and if from not having a ready and cheap way of having his manures analysed, the loss of a crop is the consequence, is not the landlord's rent endangered? But I would respectfully submit that these portable manures, now so important an element in good farming, and for which I would say a chemist's services are required, leaving every other consideration, have done much already for the proprietors of land."

LANGUAGES.—There are 3,664 known languages now used in the world. Of these 937 are Asiatic, 587 European, 276 African, and 1,624 American, languages and dialects.

Domestic and Miscellaneous.

FEVER MAKING AND GOLD WASTING.—As nearly as we can calculate, we produce in London, by our present arrangement, 5,000 cases of malignant fever annually, at an average cost of 10*l.* per case, though the figures might be run up considerably higher by including in the estimate certain collateral results. It is difficult, of course, to be precise in this item of the account, but almost every conclusion tends to prove that the Thames is the chief delinquent in all serious infringements of sanitary rules. When we come to the other side of the question, the results are more exactly ascertainable. The unnatural uses of the river are indistinctly recorded, but its natural uses are computable to a fraction. As a general rule, it may be said that the annual value of the sewerage water of a large town is equivalent to a poll-tax of 1*l.* per head. This estimate has been even run up to 1*l.* 1*s.*, but the more moderate figures would be abundantly large for our purpose. Dr. Arnott, in his *Report upon popular Fevers in Edinburgh and Glasgow*, says that the drainage now poured into the Thames, estimated by the effects actually produced in the neighbourhood of Edinburgh, would exceed in value 500,000*l.* a-year; and he sagaciously proceeds to inquire why, if clean water can be pumped into London from twenty miles distance, foul water may not be pumped out of it by similar machinery? We never, it is said, know the value of a blessing till we lose it, but here are we losing daily one of the most precious treasures of an agricultural community with no idea of its value at all. If we are to believe half the figures now before us, "fluid town manure" is a commodity infinitely more valuable than lapis lazuli or platinum; in fact, if the true philosopher's stone exists at all, it must be in some concentrated form of this neglected substance. Its collection and preservation would render us wholly independent of all foreign manures or guano, and would disengage ships enough to have influenced the debate on the navigation laws. It would "clothe the whole Island with verdure, and endue it with inexhaustible fertility. When we come to details, the allegations are still more astounding. Carrots a foot in diameter, cucumbers two feet in length, pines of an "unusually deep and healthy complexion," and peaches as large as cauliflower, are among the ready creations of this powerful agent. As to pasture lands, the results are miraculous. On Sir Robert Peel's own model manor at Drayton, it was plainly and credibly shown to the assembled agriculturists that they might, by the aid of this manure raise tons upon tons of milk-giving, fat-producing, muscle-making grass, six times a-year!"—*Times*.

ECONOMY OF FARMING.—In every department of industry, except that of the farmer, special efforts are made to cheapen the expense of producing articles of manufacture. This has resulted in diminishing also the price at which articles are sold, though the profits to the manufacturer, from the extensive sale of his articles, are larger than formerly. Why, then, may it not with propriety be asked, does the farmer in most instances continue in the beaten track of olden time, instead of availing himself of the facilities which have been furnished him for cheapening the cultivation of his farm? How many farmers content themselves with a preparation for a single crop, instead of adopting a system of manuring that will, by a proper rotation, be available for a succession of crops. How little attention is given, after all, to systems which have been adopted, by which the products of many farmers have been largely increased, and the expenses of cultivation, by the use of improved implements and the right use of manures, have been very materially lessened.

Now it must be evident that any farmer who does

not avail himself of the means within his reach, and thus economize the expenses of his farm, is pursuing a course that must result in great loss, and in permanent injury. It may be said, and doubtless truly, that this deficiency arises from want of information. But are not agricultural journals published at such rates as to bring not only one, but several within the means of every farmer? and can it be excusable in a farmer to make his ignorance his apology, when the necessary means of information are placed within his reach? Our farmers read far too little of what is going on in the world around them. In the pages of our agricultural journals, in the proceedings of our agricultural societies, information is afforded that would enable one of these farmers greatly to increase his income, whilst at the same time his farm would be rising in value and increasing in fertility. Let me then urge upon the farmers of our country to patronize liberally the agricultural press. Give to their columns the results of experience on their every farm—add to the usefulness of these works by contributing the results of their observations—and thus make these papers what the editors desire them to be, the repository of the experience of practical farmers. Were this done, I doubt not economy in the management of the farm would prevail every where, as it now does in comparatively few localities.

Much might be accomplished toward attaining the object suggested, *economy*, if the farmer should become as systematic in his accounts with his farm as he is with individuals. I am pleased to learn that many of our farmers are adopting this system in their operation. Not long since I was permitted to look at a farmer's account for the year; and I found a statement, with all the necessary facts to substantiate it, of the expense of all his crops—that is, what each had cost him per bushel. Thus, wheat 3*s.* 6*d.*, oats 1*s.* 3*d.*, barley 2*s.* 9*d.*, beans 3*s.* 6*d.* Now who cannot see that this farmer can at once determine whether the course he is pursuing is the one best for his interest, or whether a change is necessary? and, if so, he knows where to make it.—*Genesee Farmer*.

DISTRIBUTOR FOR LIQUID MANURE.—While examining the above implement and its performances at the residence of the above gentleman, we noticed an extremely neat distributor for liquid manure, which merits general adoption, as being comprised in an ordinary wheelbarrow, in which is placed a cylinder, apparently of sheet-iron, with a strainer at top, through which the liquid manure is passed, and a pipe and valve at bottom, communicating with a perforated copper tube, hooked up transversely to the stults of the barrow. The barrow being pushed along, the person in charge of it, by means of the valve, may thus distribute the liquid manure in such quantities, and at such times and places, as he deems proper, without stopping the barrow, as an iron rod attached to the handle, and connected with the valve, enables him to open and shut it at pleasure.—*ll.*

TRANQUILITY.—Tranquility is the wish of all;—the good, while pursuing the track of virtue;—the great, while pursuing the star of glory;—and the little, while creeping in the sties of dissipation, sigh for tranquility, and make it the great object which they ultimately hope to attain.

How anxiously does the sailor, on the high and giddy mast, when on tempestuous seas, cast his eyes over the foaming billows and anticipate the calm security he hopes to enjoy when he reaches the long wished-for shore! Even kings grow weary of their splendid slavery, and nobles sicken under increasing dignities. All in fact, feel less delight in the actual enjoyment of worldly pursuits, however great and honourable they may be, than in the idea of their being able to relinquish them and retire to

"—Some calm, sequestered spot,
The world forgetting—by the world forgot!"

TIME FOR CUTTING BUSHES.—Much has been written on this subject, the sprouting being a great annoyance. The same laws govern all timber, but some are more susceptible than others. Where tenacity of life is feeble, a comparative slight cause will produce death. The leaves are the respiratory organs, or breathing apparatus, of plants, and hence, deprive a plant of these, and the health will be greatly impaired; if the plant be tender and the deprivation be persevered in, death will follow. Several years since I selected the red raspberry to make experiments on. This is a very hardy plant. I selected healthy stems. When the leaves had reached their maturity, before the petioles, or leaf stalks, became woody, I carefully picked them without inflicting any further injury on the plants. Part of the plants never sent out another crop of leaves, and those that did, only furnished a scanty crop of an indifferent quality. These were removed as before, and another fraction, larger than before, failed me. The rest gave a miserable crop of straggling leaves; these were plucked and all the plants died. The roots were left undisturbed, the naked stems uncut till another season, to see if resurrection awaited them; but the work of death was complete. The same experiment, with equal success, has been tried on shrubs and trees. Hence, the utility of sheep in the destruction of briars and bushes. In cutting, cut them when the leaf is mature; a few may sprout, cut these when full leaved. The repetition will be seldom.

THE CANADA GOOSE.—The Canadian, or American wild goose, (*Anser canadensis*), and the Chinese goose, (*A. cygnoides*), occupy, as a writer observes, "a sort of debateable ground," so that naturalists have been in doubt as to which family they should be referred; and hence some have applied to them the name of swan-geese.

The Canadian goose is extensively known. It is a migratory bird, and in its semi-annual journeys, traverses the northern part of the continent almost from the equator to the pole; and there are but few of the inhabitants of this country that are not familiar with its shrill and animating cry. Its autumnal flight lasts from the middle of August to the middle of October, and the vernal flight from the middle of April to the middle of May. Various stops are made, however, at convenient points, between the winter and summer localities.

It breeds in its wild state only at the north. Its favorite resort is the coast of Labrador, and the region about Hudson's Bay; though Hearne speaks of having seen great numbers within the Arctic circle, pushing their way still northward.

To the inhabitants of the regions where it breeds, the bird is regarded as an important source of subsistence. Its arrival in spring is anxiously looked for, and the Indians denominate the month the goose moon. It is said that the carcasses of these birds are dealt out as rations to the men employed by the Hudson's Bay Company. "One goose, which when fat weighs about nine pounds, is the daily ration to one of the Company's servants during the season, and is reckoned equivalent to two snow-geese. (*A. hyperborea*), or three ducks, or eight pounds of buffalo and moose meat, or two pounds of pemmican, or a pint of maize and four ounces of suet." [Richardson.] Those which are killed after the weather becomes cool in the fall, are frozen and kept in the feathers for a winter stock of provisions.

Richardson describes the habits of these geese in his *Fauna Boreali-Americana*, as follows:

"About three weeks after their first appearance, the Canada geese disperse in pairs through the country, between the 50th and 67th parallels, to breed, retiring at the same time from the shores of Hudson's Bay. In July, after the young birds are hatched, the parents moult, and vast numbers are killed in the rivers and

lakes, when from the loss of their quill-feathers, they are unable to fly. When chased by a canoe, and obliged to dive frequently, they soon become fatigued, and make for the shore with the intention of hiding themselves, but as they are not fleet, they fall an easy prey to their pursuers. In autumn they again assemble in flocks on the shores of Hudson's Bay, for three weeks or a month previous to their departure southwards."

The Canada goose has been domesticated and is not an uncommon inhabitant of the poultry-yard, either in this country or in England. It does not breed till it is three years old. It is somewhat larger than the common goose, and its flesh is better; it has also more feathers and of better quality. It is very hardy, and rears its young with much certainty. It is believed to be quite as profitable as the common kind; and considering its beauty and usefulness, it would seem desirable that it should be multiplied in a domestic state.

The Canada goose will breed with the common and also with the Chinese goose,—but the hybrid offspring are in all cases, incapable of procreation. Some poultrymen, however, make it an object to breed mongrels, as they are called. They grow rapidly, and acquire a larger size than either of their parents, and their flesh is of so fine a flavor, and so highly prized, that it readily commands a higher price in the market. The finest mongrels are produced between the wild and the Bremen, and the wild and the Chinese geese.

It is stated on the authority of Buffon, that the Canadian goose, kept in a domestic state in France, was found to interbreed familiarly with the swans. Have any attempts been made to cause this goose to breed with the American swan, and with what success?

It may be remarked that the wild goose (*A. palustris*) of Europe, is the parent of our common domestic goose, and of course a distinct species from the Canadian goose. —*Albany Cult.*

ASHES AS MANURE FOR GRASS LANDS.—There is scarcely any part of this country where leached ashes cannot be obtained in greater or less quantity: and in the vicinity of asheries, abundance may generally be had. If the following remarks by Count Chaptal are applicable to soils, of whatever materials they may be composed, a knowledge of this property of leached ashes would, in many instances, be of great value. At all events, the experiment is easily performed on a moderate scale.

"The ashes, produced by the combustion of wood in our common domestic fires, give rise to some very remarkable results. Without being leached, these ashes are much too active; but after having been deprived by the action of water, of nearly all their salts, and employed in this state, under the name of *buck-ashes*, they still produce great effect.

"The action of the buck ashes is most powerful upon moist lands and meadows, in which they not only facilitate the growth of useful plants, but if employed constantly for several years, they will free the soil from weeds. By the use of them, land constantly drenched with water may be freed from rushes, and prepared for yielding clover and other plants of good kinds."

It has been frequently supposed that ashes applied to wet, heavy soils, is injurious. This is probably owing to the application being too uneven, and in too large quantities, and to the want of mixing them intimately with the soil. Chaptal says, "Wood ashes possess the double property of amending a wet and clayey soil, by dividing and drying it, and of promoting vegetation by the salts they contain."

It is well known, that the evenly spread and intimately intermixed layer of ashes which soils receive by burning the turf, produces extraordinary effects upon grass lands.—*Genesee Farmer.*

WRITING DESK.		2. John Hawkins, Wolfe Island	1	5	0
1. Drummond and Thompson, Toronto, H. D.	0 10 0	3. Jonathan Ferris, Kingston	1	0	0
CLASS O.—APPLES, VARIETY OF.		CANADA COMPANY'S PRIZE FALL WHEAT.			
1. Thos. Kirkpatrick, Kingston M. D.	0 15 0	1. James Lafferty, West Flamboro, G. D.	25	0	0
2. Reuben Spooner, Kingston Tp., M.D.	0 10 0	BARLEY.			
APPLES, TABLE (12).		1. Capt. Shaw, Toronto, H. D.	0	15	0
1. R. Jackson, Kingston, M. D.	0 10 0	2. P. Davy, Bath, M. D.	0	10	0
2. Charles Vernon	0 7 6	SPRING RYE.			
3. Thos. Kirkpatrick, Kingston, M.D.	0 5 0	1. Capt. Shaw, Toronto, H. D.	1	0	0
APPLES, WINTER (12).		OATS.			
1. R. Jackson, Kingston, M.D.	0 10 0	1. Thomas Richmond, Gananoque, J. D.	0	10	0
2. Henry Turner, Toronto, H. D.	0 7 6	2. P. Davy, Bath, M. D.	0	5	0
3. Mr. Fleming, " "	0 5 0	PEAS.			
PEARS, TABLE (12).		1. Mr. Wellburn, Kingston	0	10	0
1. None awarded.		2. Capt. Shaw, Toronto, H. D.	0	5	0
2. Mr. Fleming, Toronto	0 7 6	INDIAN CORN.			
3. T. Stinson, Prince Edward D.	0 5 0	1. N. A. Briscoe, Ernestown	0	10	0
PEARS, WINTER (12).		TIMOTHY SEED.			
1. Hon. R. Baldwin, Toronto, H. D.	0 10 0	1. Rob. Collins, Camden, M. D.	0	15	0
2. The Baron de Longueil, Kingston, M. D.	0 7 6	2. Mr. Millroy, " "	0	10	0
GRAPES.		CLOVER SEED.			
1. Henry Turner, Toronto, H. D.	0 10 0	1. Mr. C. Davy, Ernestown	1	0	0
2. William Thompson, Nepean, D. D.	0 7 6	2. J. C. Davy, " "	0	15	0
3. Henry Turner, Toronto, H. D.	0 5 0	FLAX SEED.			
BROCCOLI (4 HEADS).		1. Capt. Shaw, Toronto, H. D.	0	10	0
1. Henry Turner, Toronto, H. D.	0 10 0	2. John Ferris, Kingston, M. D.	0	5	0
CAULIFLOWER (4 HEADS).		HOPS.			
1. Henry Turner, Toronto, H. D.	0 10 0	1. T. Nightingale, Toronto, H. D.	2	10	0
2. " " " "	0 5 0	2. Joseph Scott, Augusta, J. D.	1	10	0
CABBAGE (4 HEADS).		POTATOES.			
1. Henry Turner, Toronto, H. D.	0 10 0	1. Robt. Collins, Camden	0	10	0
2. " " " "	0 5 0	2. S. Washburn, Picton, P. E. D.	0	7	6
CARROTS (12 FOR TABLE).		SWEDISH TURNIPS.			
1. Rev. W. Allen, Wolfe Island, M.D.	0 10 0	1. George Stanton, St. George, G. D.	0	10	0
2. H. Sherwood, Toronto, H. D.	0 5 0	2. Charles Young, Camden, M. D.	0	7	6
WHITE CELERY.		FIELD CARROTS.			
1. Mr. Fleming, Toronto, H. D.	0 10 0	1. Gardener of the Baroness de Longueil, Kingston, M.D.	0	10	0
RED CELERY.		2. Rev. Mr. Allen, Wolfe Island.	0	7	6
1. Mr. Fleming, Toronto, H. D.	0 10 0	MANGEL WURTZEL.			
EGG PLANTS.		1. John Bush, Wolfe Island	0	10	0
1. Mr. Fleming, Toronto, H. D.	0 10 0	2. Charles Young, Camden	0	7	6
2. " " " "	0 5 0	SUGAR BEET.			
BLOOD BEETS.		1. Gardener of the Baroness de Longueil, Kingston, M. D.	0	10	0
1. Gardener of the Baroness de Longueil, Kingston, M. D.	0 10 0	2. Rev. J. Allen, Wolfe Island	0	7	6
2. Mr. Fleming, Toronto, H. D.	0 5 0	PARSNIPS.			
WHITE ONIONS.		1. Gardener of the Baroness de Longueil, Kingston, M. D.	0	10	0
1. Mr. Fleming, Toronto, H. D.	0 10 0	2. Henry Sherwood, Toronto	0	7	6
2. Gardener of the Baroness de Longueil, Kingston, M. D.	0 5 0	W. Daniel, " (Dis.)			
YELLOW ONIONS.		DISCRETIONARY.			
1. H. Sherwood, Toronto, H. D.	0 10 0	Ellwanger & Barry, Rochester—Variety of Fruits.			
2. Wm. Daniel " "	0 5 0	W. March, Scarborough—Coffee.			
RED ONIONS.		Sam. D. Clark, Camden—Madder.			
1. H. Sherwood, Toronto, H. D.	0 10 0	Capt. Shaw, Toronto—Pumpkins.			
2. H. Turner " "	0 5 0	Wm. Gordon, Toronto—Squash.			
SALSIFY.		H. Sherwood, Toronto—Peaches.			
1. Captain Shaw, Toronto, H. D.	0 10 0	R. Baldwin, Toronto—Peaches.			
2. " " " "	0 5 0	J. Wadsworth, Kingston—Melons.			
WHITE BEANS.		R. Jackson, " "			
1. Mr. Glassford, Glenburnie	0 10 0	E. A. Harper " Plums.			
2. John Gilbert, Cobourg	0 5 0	S. D. Taylor, Camden—Jerusalem Cherry.			
WINTER WHEAT.		Wm. Gordon, Toronto—Tomatoes.			
1. J. Lafferty, West Flamboro, G. D.	2 0 0	J. Wadsworth, Kingston—Tomatoes.			
2. Paul Clapp, Hillier, P. E. D.	1 5 0	" " Peppers.			
3. C. Hinds, Haldimand	1 0 0	H. Sherwood, Toronto—Nectarines.			
SPRING WHEAT.					
1. R. M. Huffman, Ernestown	2 0 0				

CLASS P.

COOKING STOVES.

- 1. G.-B. Spencer, Toronto 1 0 0
- 2. Chowns and Hamilton, Kingston 0 10 0

PARLOUR STOVE.

- 1. Chowns & Hamilton, Kingston 1 0 0

BALANCE SCALES.

- 1. B. Spencer, Toronto 1 0 0
- 2. " " 0 15 0
- 3. M. Parsee, Cobourg 0 5 0

HOT AIR APPARATUS.

- 1. G. B. Spencer, Toronto 1 10 0

BENCH PLANES.

- 1. Wallis & Son, Montreal 0 15 0

CORN BROOMS.

- 1. M. Rose, Kingston 0 7 6
- 2. " " 0 5 0
- 3. P. Davy, Bath 0 5 0

WOODEN PAIL.

- 1. J. Rooklidge 0 5 0
- 2. " " 0 3 9

WASH TUBS.

- 2. Thomas Funnell, Kingston, M. D. 0 7 6

HAMES.

- 1. Male & Toogood, Haldimand, N. D. 0 10 0
- 2. Skinner & McCullagh, Brockville. 0 5 0

SADDLE-TREE.

- 1. Skinner & McCullagh, Brockville 0 10 0
- 2. " " " 0 5 0

BOARD RULE.

- 1. S. Clinch, Cobourg, N. D. 0 10 0
- 2. " " 0 5 0

SPINNING WHEEL.

- 1. Isaac Lake, Ernestown 0 10 0

CHURN.

- 1. Thomas Funnell, Kingston 0 10 0
- 2. The Baroness de Longueuil, Wolfe Island. ... 0 5 0

EARTH AUGER.

- 1. Charles Vale, Toronto 0 10 0

RIFLE.

- 1. Angus McLeod (manufactured by Thomas Costen), Montreal 0 15 0

DISCRETIONARY.

- H. Stone, Kingston—*Gluc.*

CLASS Q.—LADIES' DEPARTMENT.

WOOLLEN OR COTTON NETTING.

- 1. Mrs. H. Macdonald, Kingston 0 15 0
- 2. " " 0 10 0

WOOLLEN OR COTTEN KNITTING.

- 1. Miss S. J. Gilbert, Cobourg 0 15 0
- 2. Mrs. Sharpe, Yonge Street, H. D. 0 10 0

EMBROIDERY.

- 1. Margaret Robb, Kingston 1 0 0
- 2. Sarah McQueeny, " 0 15 0

RAISED WORSTED WORK.

- 1. Miss E. Clench, Cobourg 1 0 0
- 2. Mrs. F. Harper, Kingston 0 15 0

WORSTED WORK.

- 1. Miss Clay, Nelson, G. D. 0 15 0
- 2. W. P. Wilson, Kingston 0 10 0

DISCRETIONARY.

- 1. Miss Thibodo, Kingston.

CROCHET WORK.

- 1. Miss Gornall, Kingston.
- 2. Mrs. Forbes, Spring Grove, M. D.

WAX FLOWERS.

- 1. Miss C. Currie, Niagara 0 15 0
- 2. Miss Clench, Cobourg 0 10 0

WOOLLEN SOCKS.

- 1. Mrs. Brewer, Kingston, M. D. 0 10 0
- 2. William Tubbs, Picton, P. E. D. 0 5 0

WOOLLEN STOCKINGS.

- 1. T. Stinson, Picton 0 10 0
- 2. William Tubbs, Picton 0 5 0

WOOLLEN MITS.

- 1. William Tubbs, Picton 0 10 0
- 2. Samuel D. Purdy, Earnestown 0 5 0

WOOLLEN GLOVES.

- 1. Mrs. Welburne, Kingston 0 10 0

GENTLEMEN'S SHIRTS.

- 1. Mrs. Mulligan, Kingston 0 15 0
- 2. " " 0 10 0
- 3. William Tubbs, Picton, P. E. D. 0 5 0

QUILTS.

- 1. Miss Ann Skinner, Kingston 1 5 0
- 2. Samuel D. Taylor, Camden 1 0 0
- 3. Margaret Robbs, Kingston 0 15 0

CLASS R.

FINE ARTS.—OIL PAINTING—LANDSCAPE.

- 1. Miss Clench, Cobourg 2 10 0
- 2. J. Gillespie, Toronto 1 10 0

WATER COLOURS—PORTRAIT.

- 1. Mrs. Hurlburt, Toronto 2 0 0
- 2. " " 1 5 0

WATER COLOURS—FIGURED.

- 1. Miss Clench, Cobourg 2 0 0

WATER COLOURS—LANDSCAPE.

- 1. Mr. Bull, Toronto 2 0 0
- 2. " " 1 5 0

CRAYON PORTRAIT.

- 1. S. Fleming, Toronto 2 10 0
- 2. Mrs. McGibbon, Kingston 1 10 0

CRAYON FIGURE.

- 1. John Willkie, Toronto 2 0 0
- 2. Mr. Bull, " 1 5 0

CRAYON LANDSCAPE.

- 1. Mr. Bull, Toronto 2 0 0

PENCIL PORTRAIT.

- 1. Mr. Bull, Toronto 2 0 0
- 2. John Wetenhall, Nelson, G. D. 1 5 0

PENCIL FIGURE.

- 1. Mr. Bull, Toronto 2 0 0
- 2. John Wetenhall, Nelson, G. D. 1 5 0

WOOD ENGRAVING.

- 1. John Allanson, Toronto 2 0 0

STUFFED BIRDS.

- R. Perkins, sergeant 20th Regiment, Kingston 1 0 0

STAINED GLASS.

- 1. Mr. Bull, Toronto 1 0 0

DISCRETIONARY.

- William Smith, Kingston—*1 Clock.*
- S. Stacey, Toronto—*Penmanship.*
- J. Ramage, Kingston—*Silver Work.*
- Messrs. Willard & Houlay, Syracuse—*Silver Work.*
- Benedict & Barney, Syracuse—*Gold Pens.*
- S. Fleming, Toronto—*Design for Diploma.*
- Norton & Seymour, Syracuse—*Silver Work.*
- D. Macdonell, Buffalo—*Daguerreotype.*
- Mr. Morrison, Toronto—*Silver Work.*

CLASS S.

POTTERY—BEST SPECIMEN.

- 1. Jonathan Peel, Brockville 0 15 0
- 2. " " 0 10 0

DRAINING TILL.

- 1. John Wade, Hope, N. D. 0 15 0

