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THE
CANADIAN AGRICULTURIST

AND

Transactions

OF THE

BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, APRIL, 1853.

NO. 4.

REPORT OF THE COUNTY OF LAMBTON
AGRICULTURAL SOCIETY FOR 1852.

The Directors of the Lambton Agricultural Society for the past year beg to submit the following Report:—

The County of Lambton contains ten Townships—viz.: Bosaquet, Warwick, Plympton, Emiskillen, Brooke, Sarnia, Moore, Sombra, Euphemia, and Dawn—and contains about 11,000 inhabitants. It is bounded on the north by Lake Huron, and on the west by the River St. Clair. Both branches of the River Sydenham run through it. The River Aux Sables forms its north-eastern boundary for a considerable distance. On these rivers and their tributaries a number of both grist and saw-mills have been erected, and many important sites remain yet unimproved. However, it must be owned, that in mill privileges this County, as a whole, is very deficient. This deficiency, however, is being supplied by the erection of steam mills. At Port Sarnia, there is an excellent grist and saw mill propelled by steam; and in the Township of Moore a steam grist mill is in course of erection, and nearly completed.

This County is well situated in a commercial point of view—Bosaquet and Plympton are both bounded by Lake Huron; Sarnia is bounded on the north by the Lake, and on the west by the River St. Clair. Moore and Sombra are both bounded on the west by the St. Clair. Dawn has the River Sydenham running through it, which is navigable for a considerable distance. The route of the *Great Western Railroad* passes or touches the corner of Euphemia. The Railroad from London to Port Sarnia will pass through Warwick, Plympton, and Sarnia; and the *Toronto, Guelph, and Port Sarnia Railroad* will pass through Bosaquet, Warwick, Plympton, and Sarnia.

When these roads are completed, every part of the County will be within a reasonable distance of a railroad or navigable water, or both.

The River St. Clair, on the western border of this County, is one of the most majestic streams on the globe. Though, from some unknown causes, some seasons it is a few feet higher than others, it is not affected by the greatest freshets, and those living on its banks are thus free from one of the greatest annoyances to which persons who live on the banks of great rivers are usually exposed. Both the River and Lake are abundantly supplied with the finest varieties of fish, large quantities of which are annually caught and exported. The season of navigation usually commences in March, and frequently lasts till the end of December. All kinds of craft, from the Indian canoe to the magnificent steamboat, abound on the River, and a vast amount of business is usually done on its waters. The land on its margin, from Lake Huron to Lake St. Clair, is mostly of excellent quality, and for beauty of situation and convenience cannot probably be surpassed in the Province.

Port Sarnia, the capital of the County of Lambton, is a thriving village, containing nearly one thousand inhabitants. It is beautifully situated on the banks of the St. Clair, about two miles from its egress from Lake Huron. It has a spacious and excellent harbor, in which vessels can lie in perfect safety at all seasons of the year. Port Sarnia is not surpassed by any place west of Hamilton, either as a market for farmers' produce or a place at which imported goods can be purchased to advantage. A vast and continually increasing amount of business is annually done by its enterprising merchants.

The greater part of this County has been but recently settled. In some Townships more than one half of the land is still unoccupied. Almost, probably, every Township in this County has been greatly retarded in its progress by those curses to Canada—*land speculators*. Large blocks of land are obtained at a merely nominal price, and after being held till the labor of the industrious settler makes them valuable, they

are either sold at an extravagant rate, or still retained as a barrier in the way of improvement.

Our forests abound with useful and valuable timber. On the banks of the River *Aux Sables* pine of the best quality is abundant; and though the entire County oak of excellent quality is found in large quantities. In some places, especially on the River Sydenham and its tributaries, there is abundance of the most beautiful walnut. Large quantities of square timber, staves, and walnut lumber are annually exported. Some time since a vessel some distance up the River Sydenham was loaded with walnut lumber, and took her cargo direct to Boston without transhipment.

The timber of the County, being mostly hardwood, is well adapted for the manufacture of potash, large quantities of which are annually made. During the year 1852, there were shipped from Port Sarnia alone about 830 barrels. The average value of this would be at least \$20 per barrel, which on 830 amounts to \$16,000.

The *Substratum* on which the County rests is probably one continuous bed of clay. The soil on the surface varies from sharp sand (in the Plains of Sarnia) to the most compact clay; clay and clayey loam predominating. The soil in general is well adapted for cultivation. The flats of the River Sydenham are probably not exceeded in richness by any land in Canada. The surface of the County, as a whole, is level, though there are considerable tracts beautifully undulated.

The crops raised in the County are wheat, oats, peas, Indian corn, buckwheat, rye and barley,—potatoes, turnips, ruta бага, mangel wurtzel, &c.,—timothy and clover hay. Wheat hitherto has been an uncertain crop. Winter wheat has been mostly sown on new land. Some years the crops are excellent, averaging from 20 to 30 bushels per acre. Other years the wheat on new land is greatly injured by spring frosts and rust. On ploughed land, however, well prepared, it generally does well, averaging from 20 to 25 bus. per acre. Several varieties of spring wheat, such as *Siberian*, *China*, *Black Sea*, and lately *Fife Wheat*, have been sown. *Black Sea* has been mostly used these few years past, and on good ground purposely prepared, yields from 15 to 25 bus. per acre. The past season *Fife Wheat* was sown by several individuals, and is said to be superior to any spring wheat hitherto introduced into the county. Oats grow well, yielding, according to circumstances, from 20 to 40 or 45 bus. per acre. Peas also do well, average crop from 20 to 30 bus. per acre. Indian corn also yields a fair return, varying from 20 to 50 bus. per acre. There is little doubt that, with first-rate cultivation, from 60 to

80 bus. might be raised. Buckwheat, rye, and barley, have been raised only to a very limited extent. Buckwheat and rye grow well. Barley, except when very early sown, seems subject to blight. Potatoes, till within the last few years, grew well in every part of the County, and were largely cultivated. After their general failure, the quantity planted diminished to probably less than one-fourth. The last two years they have done better, and are now more cultivated. The average crop for the past season is from 90 to 100 bus. per acre. White turnips grow well, particularly on new land. Ruta-baga, mangel-wurtzel, carrots, &c., have not been very extensively cultivated. But whenever they have been properly managed, large crops have been raised. Timothy and clover grow well, and produce abundance of excellent hay.

Except in a few localities, gardening has not been much attended to, but in these the most satisfactory results have been obtained. *Orchards* have been pretty generally planted, mostly grafted trees of approved kinds. The quantity of fruit hitherto raised has been but trifling, as the orchards are only recently planted out.

The inhabitants of the County are *mixed* in almost every respect. On the banks of the St. Clair, there are several French settlers, whose fathers took up their abode there 25 or 30 years before such persons as *surveyors* were heard of in this locality. Then we have English, Scotch, Irish and Americans. The modes of cultivating the land are as diversified as the origin of the people. The method, however, perhaps more generally practised is something like the following. A large portion of the *new land* is sown with wheat or oats, and seeded down with timothy and clover. The remainder is used for potatoes, turnips and Indian corn. Next crop this latter is sown with spring wheat or oats, and at the same time is seeded down with grass seed. The land is then generally allowed to remain for hay and pasture for from 6 to 9 years according to circumstances, till the stumps are sufficiently rotted to permit of its being ploughed to advantage. In some cases it is then summer-fallowed, but more frequently sown with pease. After the pease are harvested, it is usually cross-ploughed and harrowed, then ridged up, and sown with wheat. When properly managed in this way, the crop is generally very satisfactory. When this wheat has been harvested, the plan adopted by some farmers—and what is probably the best—is to take as much of the wheat stubble as can be conveniently managed, turn it over in the fall, work it again in the spring and manure it heavily, then put in potatoes, Indian corn, ruta бага, mangel wurtzel, &c. When these crops are kept in proper order with the

plough, cultivator, and hoe, the land is left in the very best condition for spring wheat, barley, or oats.

The manure employed for these crops is wholly from the barn yard. Composts have not yet been adopted, even the barn-yard manure has hitherto been much neglected, and the liquid portion of it almost wholly lost. In some cases, the manure before being spread upon the land is properly fermented, which is a great advantage, inasmuch as this process destroys the seeds of weeds, and facilitates vegetation; in many cases, however, it is taken out without any such process. Different modes of applying the manure have also been adopted. Some haul it out, spread it over the surface, and then plough it in. Others carefully prepare the ground, then run it into drills—for corn 3 to 3½ feet apart, for potatoes about 3 feet, for ruta бага and mangel wurtzel about 30 inches. The manure is then placed in the furrows, and the drills reversed. For Indian corn and ruta бага, &c., a light roller is then drawn up and down the drills. Indian corn is planted in straight rows across the drills, and about 4 feet apart. Ruta бага and potatoes are put in in the usual way. By this method these crops can be mostly cleaned without the use of the hoe, and when properly done the land is in first-rate condition for the succeeding crop.

In a County like this, a great part of which is rather flat, proper draining is a matter of the greatest importance. Some of our best farmers are fully aware of this, and are turning their attention both to the cutting of open ditches, and the making of covered drains. These latter wherever tried have proved of singular advantage. Portions of fields which, before their use, were utterly valueless, have by means of them become far the most profitable. There is one thing, however, which operates as a great drawback to extensive agricultural improvements—and that is the high price of labor. Wages in this County are from 20 to 40 per cent. higher than in the Home District. In no part of the Province have able-bodied labourers a better opportunity of securing a competence for themselves than in the County of Lambton. Even in winter, an active man will easily obtain from \$12 to \$15 per month, and board.

The price of land in this County varies so much in different localities that it is almost impossible to mention an average rate. In some of the back Townships, wild land may be obtained for \$1½ to \$2 per acre. In Sarnia, Plympton, and Moore, the average for wild land is from \$2 to \$4 per acre. On the St. Clair, however, even wild land sells from \$12 to \$16 per acre. Improved farms vary in price \$8 to \$20 per acre.

The "St. Clair Agricultural Society" was

organized in December, 1843, and continued in operation till superseded by the "Lambton Agricultural Society," in 1852. Much benefit to the County has resulted from the operations of these Societies. Stock has been greatly improved. Cattle and sheep in this County will compare favourably with the general stock of the Province. Our horses, as a whole, are inferior. During the past season the Directors of the "Lambton Agricultural Society" have expended a large sum, about \$180, in order to obtain the use of a superior stallion for agricultural purposes. Though this sum appears large to be spent in such a way, and many may be inclined to doubt the expediency of such an expenditure, the Directors are fully persuaded that the County will be amply repaid for the outlay. Besides the animal whose services the Directors secured, other excellent horses were brought in to compete for the premium, so that during the past season farmers in this County had a better opportunity of choosing a stallion than they ever had before.

The members of the "Lambton Agricultural Society" now number 134. (For their names and the sums paid by each, see Appendix A, annexed to this Report.) The Directors would respectfully suggest to their successors in office the importance of employing active agents in order to collect the subscriptions for 1853, and increase as much as possible our subscription list.

The Directors have great pleasure in being able to congratulate the members of the Lambton Agricultural Society on the steady improvement of the County, and on its future prospects. This is manifested in a variety of ways. They would mention only a few. A great improvement has taken place in farm buildings; comfortable dwelling houses, commodious barns and stables are getting by no means uncommon. Within the last few years roads have been much improved, and the means of communication greatly facilitated. From Port Sarnia a plank road has been laid down, extending through the Township, and is likely to be followed by others in different parts of the County. The spirit of improvement was also evinced at our last Annual Show. Though the day was exceedingly unfavourable, the show of live stock, grain, dairy produce, &c., would have done credit to a much older County. The number of articles entered for competition was 219. The number of premiums awarded was 96. The sum of money thus awarded amounted to \$147 75. (For names of persons to whom premiums were awarded, and the amount of each premium, see Appendix B, annexed to this Report.)

In reference to the *Acts of Parliament* recently passed for the regulation of Agricultural

Societies, the Directors are persuaded that a change has been made which is disadvantageous to these Societies, viz.: being obliged to hold our annual meetings in February. Formerly, our general meeting was held on the day of the annual show, and consequently a much larger attendance was secured than can be obtained at almost any other time, and of course a better opportunity was thus afforded for choosing officers for the different Societies, as under the present system only a small attendance can be obtained.

In conclusion, the Directors of the Lambton Agricultural Society return their thanks to the members of said Society for the confidence reposed in them. They have no pretensions to

infallibility; they have no idea that they have done everything in the best possible manner; but they have the testimony of their consciences that they have sought the good of the Society, and have done what they could to further its interests. They now, in giving up their trusts, hope that their successors may be able to carry on the operations of the Society still more successfully; and that peace and prosperity, and that *blessing which maketh rich and addeth no sorrow with it*, may rest upon the members of the "Lambton Agricultural Society."

EBENEZER WATSON,

Secretary.

Port Sarnia, Feb. 1, 1853.

APPENDIX C.—COPY OF TREASURER'S ACCOUNT.

| LAMBTON AGRICULTURAL SOCIETY | | IN ACCOUNT WITH ARCHIBALD YOUNG, TREASURER. CR. | |
|------------------------------|---|---|----|
| DR. | | | |
| 1852. | | \$ | c. |
| Jan. 15 | To Postage on J. Dougall's communications | 25 | |
| Feb. 9 | " " " Government Money | 16 | |
| " 10 | " Printing | 2 00 | |
| " 18 | " Postage on Bessy's Paper | 14 | |
| " 27 | " Order for Printing | 90 | |
| " " | " 5 Copies last year's Cultivator | 2 50 | |
| " " | " Cash for Agriculturist, 1852 | 64 50 | |
| March 10 | " Postage on Agricultural Papers | 60 | |
| " 15 | " Advertising in "Free Press" | 2 20 | |
| " 31 | " Postage on Askew's and Dougall's Letters | 10 | |
| April 5 | " Postage on Askew's Letter | 105 | |
| " " | " Order to Gibb \$1, to Ferguson \$7 | 8 00 | |
| May 12 | " Cash paid for Printing | 4 75 | |
| " 14 | " Postage to Warwick and Toronto | 20 | |
| June 30 | " Order to John Donaldson | 14 00 | |
| July 3 | " Order to John Donaldson | 286 00 | |
| " " | " Cash paid to E. Watson for advertising | 3 50 | |
| Aug. 6 | " Postage to Moore | 05 | |
| " 13 | " Paid Printing | 4 84 | |
| Sept. 13 | " 1851 Premiums paid to date | 115 85 | |
| " 23 | " 1851 " paid to T.G. Vidal | 2 00 | |
| Oct. 18 | " 1851 " paid to Joseph Lang | 1 00 | |
| Sept. 28 | " 5 Books for E. Watson | 45 | |
| " " | " Order to Jenkins \$1, to Wilcox \$5 | 6 00 | |
| Nov. 5 | " Paid H. Scobie's Bill | 3 07 | |
| " " | " Paid Warwick Agricul. Society | 217 32 | |
| " " | " " Moore | 123 68 | |
| Dec. 27 | " Postage on Canadian Journal | 50 | |
| " " | " Balance | 501 47 | |
| | | 1366 08 | |
| 1853. | | \$ | c. |
| Jan. 1 | To 1852 Premiums | 147 75 | |
| | Balance | 359 72 | |
| | | 507 47 | |
| 1852. | | \$ | c. |
| Jan. 1 | By Balance due Society | 363 46 | |
| Feb. 9 | " Government Grant, 1851 | 150 62 | |
| " 12 | " Cash from Warwick for Stock | 44 00 | |
| April 29 | " Amount of 1852 Subscriptions to this date | 142 00 | |
| " " | " Cash from Warwick Society | 123 00 | |
| " " | " Cash from Moore Society | 70 00 | |
| July 1 | " Cash for Cultivator Teeth from Jan., 1852 | 3 00 | |
| Oct. 2 | " Government Grant for 1852 | 398 00 | |
| Dec. 10 | " Amt. for use of Horse up to date | 72 00 | |
| | | 1366 08 | |
| 1853 | | \$ | c. |
| naJ. 1 | By Amount due Society | 501 47 | |
| " " | " Amount for use of Horse | 6 00 | |
| | | 507 47 | |

By amount due Society..... 359 72

The above is a true Copy of the Treasurer's Account, as presented at the Annual Meeting, Feb. 1st, 1853.

E. WATSON, Sec. L. A. Society.

TOWNSHIP SOCIETIES IN THE COUNTY OF OXFORD.

Three Township, or Branch Societies were in operation in this County, during the year 1852, and a new one, making a fourth, has been established the present year. Space will only admit of the following brief notices of a few principal facts, selected from the Reports of these Societies:

NORWICH AGRICULTURAL SOCIETY.

This Society was organized in January, 1852, in accordance with the provisions of the late Agricultural Statute,—and it appears to have made an encouraging commencement. Its income, inclusive of its proportion of the Government Grant, for the past year was £79 15s 10½d; the Expenditures £52 5s 9½d; having in hand a balance of £27 10s 1d.

Officers for 1853:

- Gilbert Moore *President.*
 Andrew Wilson *Vice-President.*
 D. S. Butterfield..... *Secretary & Treasurer.*

Directors:

- W. S. Moore, J. Hunt, W. Crawford, G. DeLong, C. Triffy, R. Addison, T. Wilcox, J. H. Connell, and J. McLees.

EAST ZORRA AGRICULTURAL SOCIETY.

Amount of Subscriptions, 1852, £27 2s 6d; Government Grant £21, making the total income £48 2s 6d; Expenditure, inclusive of £28 2s 6d for Premiums, £40 12s 8d; having in hand a balance of £7 9s 10d.

Officers for 1853:

- A. H. Farmer *President.*
 J. Turner..... *Vice-President.*
 J. Thwaites..... *Secretary & Treasurer.*

Directors:

- J. Jackson, J. Cook, J. Scott, H. Stewart, A. Wilson, T. Thomson, J. Smith, and Robert McDonald.

INGERSOLL BRANCH AGRICULTURAL SOCIETY.

† Cash on hand from previous year £267 8s 9d; Members' Subscriptions £76 7s 6d; Government Grant, £80 3s 10d; total income for 1852 £424 0s 1d; Expenditure £173 0s 6d; having a balance in the hands of Treasurer of £250 19s 7d.

Officers for 1853:

- Jas. Henderson..... *President.*
 Jas. Bodwell..... *Vice-President.*
 D. Phelan..... *Treasurer.*
 J. M. Chapman..... *Secretary.*

Directors:

- J. Adams, E. Matthews, G. Galloway, J. Bennett, T. Brown, J. Choat, J. Matthews, C. E. Chadwick and Thos. Young.

WEST ZORRA AGRICULTURAL SOCIETY.

This Society was organized at a Public Meeting held in Embro, January 11th, 1853, Mr. Angus Munro in the Chair. After an interesting lecture from Mr. Alexander of Woodstock, who takes a most praiseworthy interest in diffusing a knowledge of the science and practice of Agriculture, ninety-seven persons entered their names as

Members. A vote of thanks was passed by acclamation to Mr. Alexander, for the trouble he had taken in assisting to form the Society.

Officers for 1853:

- Angus Munro..... *President.*
 Wm. Olive..... *Vice-President.*
 W. Sutherland..... *Treasurer.*
 J. Frazer..... *Secretary.*

Directors:

- J. Matheson, D. Youngs, J. Richardson, A. M. Corquodale, Jr.: J. Glendening, W. McKayhonscome, J. B. Wilkinson, W. Tate and D. Sutherland.

COUNTY AGRICULTURAL SOCIETY.

The following gentlemen were appointed Officers at the Annual Meeting of the County of Oxford Agricultural Society on Tuesday last:—

- John Barwick, Esq.... *President.*
 Mr. Sutton Fitzell.... *Vice-President.*
 Mr. Fred. Welford.... *Do.*
 Mr. Joseph Peers.... *Secretary & Treasurer.*

Directors:

- Messrs. William Paulin, Richard Adams, William Chambers, Archibald Thomson, John G. Vansittart, William Peers, and Thomas Allen.

REPORT OF THE AGRICULTURAL SOCIETY OF THE COUNTY OF OXFORD FOR 1852.

Report of the Directors of the Agricultural Society of the County of Oxford presented at the annual meeting, held at Woodstock, on the 22nd February, 1853.

The Directors of the County of Oxford Agricultural Society in preparing their report of the proceedings of the past year (which is required by statute to be presented at the annual meeting) desire to congratulate their brother farmers on the abundant harvest of the past season, bestowed upon us by the bountiful Author of all good.

The improving prospects in the value of our productions is also a subject for congratulation.

The Directors feel justified in expressing the opinion that the Society is steadily improving, which was satisfactorily shewn in the large exhibition and attendance at our annual show, which compared favorably with those of past years. And the Directors on this occasion desire to record their opinion of the very liberal grant made by the County Council and Corporation of Woodstock, to the funds for fencing, (in a substantial manner,) the five acres on which the last Exhibition was held.

The show of all descriptions of stock on that occasion proved, that the County of Oxford has many farmers whose judgment of Stock is of the first class.

The Directors refer with pride to the Agricultural Census lately taken, which shews that our County stands fourth in the scale of "wheat growing," in Upper Canada. This is the more satisfactory when it is borne in mind that a large portion of the County has only lately been re-

claimed from the Forest, at the same time, we believe, that the County of Oxford has dairy productions and stock equal to any other County in the Province.

The Directors consider that it comes within the scope of their duty, to express their opinion of the vast advantages that will arise to this Colony, from the Exhibition of all Nations held in London, from the fact that many of our resources and productions were there made known.

Holding this opinion, the Directors earnestly hope that Canada may be as well represented at the Exhibition of all Nations to be held at New York, in May 1853, as she was in London in 1851, which must produce incalculable benefits to this hitherto comparatively unknown country, and would give substantial evidence to our "calculating neighbors," that Canada is not wanting in valuable productions, and that Canadian intercourse is worth cultivating.

The Directors observe from a circular issued by the authorities in New York, engaged in

managing the arrangements of the Exhibition. "that His Royal Highness the Prince Albert has intimated his willingness to exhibit produce from the Royal farms."

The Directors look forward to the early completion of the Great Western Railway, when without a doubt the position of the farmers in the County of Oxford will be equal to that of any of their brethren in Canada West.

The County Society furnish a copy of the "Canadian Agriculturist" to each of their members. The Directors regard this paper as well entitled to, and worthy of, the support of every farmer in Canada, from the very able and practical manner in which it is Edited, and every farmer would find at the year's end that pounds were put into his pocket by the investment.

The Directors consider it worthy of notice to furnish a statement of the sums of money expended by this Society, (since its formation in 1836) in furnishing improved stock for the benefit of its members.

| Year | Horses | Cattle | Sheep | Pigs | £ | s | d |
|------|---|-----------------------------------|--|---------------------------------|----------|----|---|
| 1841 | Services of "Predictor," a thoroughbred horse..... | ..... | ..... | ..... | 20 | | |
| 1841 | ..... | Purchased 2 Short Horn Bulls..... | ..... | ..... | 65 | | |
| 1846 | Services of "Cullpepper," a thoroughbred horse..... | ..... | ..... | ..... | 50 | | |
| 1847 | Services of "Cullpepper"..... | ..... | ..... | ..... | 30 | | |
| 1848 | Purchased "Sida Hamet," an Agricultural Stallion..... | ..... | ..... | ..... | 137 | 5 | |
| 1848 | ..... | ..... | Purchased 10 Leicester Rams..... | ..... | 12 | 10 | |
| 1849 | ..... | Purchased 2 Ayrshire Bulls..... | ..... | ..... | 18 | 15 | |
| 1849 | ..... | Purchased 2 Short Horn Bulls..... | ..... | ..... | 30 | | |
| 1849 | ..... | ..... | Purchased 5 Leicesters Rams and 3 South Down Rams..... | ..... | 16 | 10 | |
| 1850 | ..... | ..... | Purchased 5 South Down Rams..... | ..... | 10 | | |
| 1850 | ..... | ..... | ..... | Purchased a Yorkshire Boar..... | 5 | | |
| 1851 | Services of "Transfer," a thoroughbred horse..... | ..... | ..... | ..... | 150 | | |
| 1852 | ..... | Purchased a Hereford Bull..... | ..... | ..... | 26 | 5 | |
| | | | | | £571 5 0 | | |

JOHN BARWICK, *President.*
JOSEPH PEERS, *Treasurer.*

The sum of £829 5s. was also expended in awarding premiums. Total amount expended in the purchase of Stock, £571 5s.; in awarding premiums, £829 10s. In all, £1,400 10s.

THE BLUE BIRD.—Before our next week's paper is issued, our readers may expect to see again amongst them this little winged harbinger of spring. Of all the feathered migratory tribe, the Blue Bird is one of the first to brave the lingering frost and snow of our inclement winter.—We are informed by a friend, an ardent naturalist, that, from close observation for many years, he has noted the fact of its return to these regions occurring, uniformly, between the 10th and 15th days of this month. The subject of the migration of birds has for some time been a study with the naturalists of Europe; though we are not aware of the same attention having been paid to it in this country. It forms an interesting feature in natural history, and one easily attained to a certain extent. These few remarks may perhaps be the means of gaining for it some notice.—*British American, Woodstock, March 11th.*

The Agriculturist.

TORONTO, APRIL, 1853.

BUREAU OF AGRICULTURE.

It is with much satisfaction we observe that the Hon. MALCOLM CAMERON has already put into operation the new and important Department over which he presides. To mature, however, the numerous arrangements belonging to a Governmental Department of Agriculture and Statistics, will necessarily require much patient study and investigation, and cannot therefore be completed in a day, or a year. The value and permanency of the Agricultural Bureau, will, in our estimation, greatly depend on a cautious manner of arranging its details of operation; slow but sure development, rather than mere speed, will be the proper measure of its success. If conducted—as we hope and believe it will—in a cautious and persevering spirit, in connection with our Agricultural Boards and Societies, it cannot fail of becoming powerfully instrumental in promoting the most important interests of the country.

The Minister of Agriculture, we observe, has appointed Mr. Turner, formerly connected with the *Montreal Courier*, to visit the Ottawa District, with a view to collect information relative to that interesting and important section of the country. This is a good beginning. We have not the pleasure of Mr. Turner's acquaintance, but from all sources, we learn, that he is eminently qualified for the task he has undertaken, and that the appointment will give entire satisfaction.

The flax question—as we intimated in a previous number—has engaged the attention of the

Minister. Mr. A. Kirkwood, is now on his way to the United Kingdom, for the express purpose of ascertaining on the spot, the best modes of cultivating, preparing, and manufacturing flax, as practised in Ireland and other countries. Mr. Kirkwood is a young man possessing a general knowledge of the theory and practice of Agriculture, and has had some previous acquaintance with the growth and manufacture of flax in Ireland; and from his correct, observant habits of mind, and general intelligence, we shall look forward with no ordinary expectation to his report, on his return. It is now quite time that the Flax question, which has of late engaged much attention in Canada, should be put to a sufficient practical test, to satisfy the enquiries and reasonable expectations of the country. The right means are now being taken for the solution of this important question.

BOARD OF AGRICULTURE OF LOWER CANADA.

It is gratifying to see so early the fruits of the new Agricultural Statute, passed so recently as November last. A Board has been organized for the Lower Province: and as both sections are now placed on a similar footing under the present law, it is much to be desired that a spirit of mutual co-operation should henceforth be more generally cultivated between the two great sections of the United Province, for the promotion of Agriculture, than has hitherto obtained. That such will be the result, we will not permit ourselves to doubt.

SECRETARY'S OFFICE,

Quebec, February 18, 1853.

His Excellency the Governor General in Council has been pleased to appoint the undermentioned Gentlemen to compose the Lower Canada Board of Agriculture under the Act 16 Vict. Chap. 11, viz.:

Thomas E. Campbell, of St. Hilaire de Rouville;
 Alfred Pinsonneault, of Montreal;
 John Dods, of Montreal;
 Joseph C. Tache, of Kamouraska;
 Pierre B. Dumoulin, of Three Rivers;
 Robert N. Watts, of Drummondville;
 James Thomson, of Shefford; and
 Edward J. De Blois, of Quebec, Esquires.

FRONTENAC AGRICULTURAL SOCIETY.—THE RIGHT SPIRIT.

We observe that at the annual meeting of the above society recently held in Kingston, the proposition for presenting some tangible token of gratitude and esteem to their late respected and indefatigable President, ANGUS CAMERON, ESQ., met with a most cordial reception. Another illustration is thus afforded of the benefits of Agricultural Societies, apart from their ma-

terial or mere pecuniary advantages: they tend to call out individual talent and exertion, and to promote a kind neighborly feeling. Mr. Cameron is richly deserving the respect and confidence of the Society, over whose proceedings he has so faithfully and advantageously presided. A Kingston cotemporary observes:—

“The generous views entertained by Mr. Cameron, and his anxiety to avoid the appearance of monopolizing the Office of President, which he has so long filled with honor to himself, and to the great benefit of the Society, has induced him to resign, contrary to the expressed wishes of the meeting. This self negation on the part of the late President, when he considered the interests of the Society, and consequently of Agriculture at stake, is only consistent with the course which he has invariably followed during all his connection with the Society, and it gives us the most sincere pleasure to perceive that the County Agricultural Society intend to show their appreciation thereof, having taken initiative steps for presenting him with a token of esteem on the part of its members and of the public generally.”

The *Argus* further remarks in reference to his successor, in which, those of our readers that have the honor of his acquaintance, will perfectly agree:

“The only thing that can reconcile us to the retirement of Colonel Cameron is the appointment of Baron de Longuiel to succeed him; appointed unanimously on the nomination of Colonel Cameron. Since the Baron has begun to interest himself in agriculture, no man in the counties, and very few in Canada, has done as much for the advancement of those branches, of which he has taken hold, as was evinced last year at the Provincial Fair, at Toronto, where he took more prizes than any one single exhibitor. The Baron is an enthusiastic Stock improver, and a scientific and practical horticulturist; he has introduced all the modern improvements, and has made use of all the enlightenment of modern science to advance the progress of his favorite pursuits. No gentleman could have been found more suitable to succeed the late President of the County Agricultural Society than the Baron de Longuiel; and, in nominating him as his successor, Col. Cameron has added one more to the many claims which he has to the gratitude of the agriculturists of the United Counties of Frontenac, Lennox and Addington.”

GARDEN, AGRICULTURAL, AND FLOWER SEEDS.

The season for commencing Agricultural and Horticultural operations having arrived, we embrace the present opportunity of calling the atten-

tion of our readers to the extensive and carefully selected stock of seeds of Mr. JAMES FLEMING, of this city, Seedsman, by appointment, to the Provincial Association and Board of Agriculture of Upper Canada, whose advertisement will be found on our last page. His large stock of seeds, just imported direct from England, has arrived in excellent condition, and, after a personal inspection, we can safely recommend our readers, who may be in want of such articles, to pay Mr. Fleming a visit; of whom they may also obtain British and American garden tools, of the best workmanship.

In arranging material for his catalogue, Mr. Fleming has been careful to select only such kinds of vegetable and flower seeds as he can with confidence recommend—the vitality of each sort being fully tested before offered to the public. New varieties, and such as are raised in greater perfection in Europe, are annually imported from sources that can be relied on; and those that grow to perfection in this country are raised under his own inspection.

The following plain, practical hints on the cultivation of ordinary garden vegetables, are taken from Mr. Fleming's printed catalogue, and will be found useful to many of our readers:

Most kind of seeds grow more freely if soaked in soft water from 12 to 48 hours before sowing. Seeds of a hard nature, such as blood beet, mang-el wanzel, nasturtium, &c., often fail from want of attention to this circumstance. Rolling the ground, after sowing, is very beneficial, and will assist in making the seeds vegetate more freely. When a roller is not at hand, it may be done with the back of a spade.

Kidney or French Beans may be planted any time in May, in drills two inches deep, the beans two inches from each other; the drills about 18 inches apart. If a regular succession is required, sow a few every few weeks, from the 1st of May to the 1st of July.

Broad, or Windsor Beans, do not succeed well in this climate, the summer heat coming on them before they are podded, which causes the blossoms to drop off. The best soil to grow them in is a rich, stiff clay, and on a northern border, shaded from the mid-day sun; sow in drills two feet apart, the drills two inches deep, and the seed 3 inches asunder.

Blood Beet, Long and Turnip, may be sown in a good, rich, deep soil, about the first week of May. Draw drills about a foot apart and one inch deep; sow moderately thick; when the plants are up strong, thin them out the distance of six inches from each other in the rows.

Broccoli and Cauliflower require a deep, rich soil, of a clayey nature, and highly manured. To produce early Cauliflower or Broccoli the seed ought to be sown in a hot-bed, early in March. When the plants are quite strong and hardy, they

may be planted out in the garden, about the middle of May. Plant in rows two feet square. The kinds that will do well in this climate are the Early London and French Cauliflower, Purple Cape and Walcheren Broccoli.

Cabbage, both early and late, may be sown any time in May. The best situation for raising the plants is a rich, damp piece of ground, partially shaded. Seed sown in a situation of this kind is not so subject to be destroyed by the black flea. When the plants are strong, they may be planted out in rows, and managed the same as directed for cauliflower. The best kinds for summer use are the Early York, Battersea, and Vauxhall; for winter use the Drumhead, Large Bergen, and Flat Dutch.

Cucumbers may be sown in the open ground any time in May. They require a good rich soil. Sow in hills, four feet apart, leaving only three plants on each hill. The cucumber and melon vines are liable to be attacked by a yellow fly or bug. Soot, charcoal dust, or soap suds, applied to the plants, will assist in keeping them off.

Musk and Water Melons may also be sown at the same time, taking care to sow the different kinds a good distance apart from each other, as they are apt to mix. Plant in hills six feet square, leaving only three plants on each hill. When the plants have grown about six inches, stop or pinch out the top of the leading shoot; which will make the plants throw out lateral shoots, on which you may expect to have fruit.

Carrots.—The most suitable ground for growing Carrots, is a deep, rich soil, that has been well manured the previous year. Sow any time in May, in drills one foot apart, and one inch deep. When the Carrots are up, thin them out, four inches apart, and keep the ground free from weeds. The kinds that are generally sown in the garden are, the Early Horn, Long Orange, and Red Surrey; for field culture the White Belgian and Akringham. The produce of one acre of field Carrots, when properly cultivated, may be rated at from 500 to 800 bushels. In cultivating them on the field system, the drills ought to be two feet apart, and the Carrots thinned out, at least, twelve inches asunder.

Celery.—This vegetable is much esteemed as a salad. To have early Celery the seed requires to be sown in a hot-bed, in the month of March; for winter Celery the seed may be sown in the open ground, any time before the middle of May. Sow on a small bed of fine, rich earth; beat the bed down with the back of the spade; sift a little fine earth over the seed; shade the bed with a mat or board until the plants begin to appear. Celery plants ought to be picked out into a nursery-bed as soon as they are two or three inches high. Cut their roots and tops a little, before planting; water them well, and shade them from the sun until they begin to grow. Let them remain in the nursery-bed about one month, after which they will be fit to transplant into the trenches. The best sort of soil to grow Celery in is a deep, rich loam, and in an open part of the garden. Mark out the trenches a foot wide, and three feet between each trench. Dig the trenches one foot deep, laying the earth equally on each side. Put three or

four inches deep of well rotted manure into the bottom of each trench; put a little of the surface soil over the manure; dig it well up, incorporating the soil well with the manure; dress the plants by cutting off the long leaves and the ends of the roots. Plant in single rows, along the centre of each trench, allowing six inches between each plant. Water them well, and shade them from the sun until the plants begin to grow. In earthing up Celery great care should be taken not to cover the heart of the plant.

Lettuce is easily raised from seed, which may be sown from the 1st of April to the end of June. If good headed Lettuce is wanted, the plants should be transplanted out on a rich piece of ground, in drills, 12 inches apart, and six inches in the drill. The Malta, Green Coss, and Victoria Cabbage are the most suitable kinds to sow, as they head without tying up.

Onions.—The yellow and large red are the best for a general crop. The ground for Onions should be well prepared, by digging in plenty of well-rotted manure. The seed may be sown from the middle of April to the middle May. Sow in drills, one inch deep and 12 inches apart. When the young Onions are up, thin them out to the distance of three inches apart.

Parsnips require a deep, rich soil. Sow in drills, one inch deep, and the drills 15 inches apart. Cultivate the same as directed for Carrots.

Radishes should not be sown in the open air sooner than the middle of May. They require a deep, sandy soil, that has been well cultivated and manured the previous year.

Rhubarb is a perennial plant, and may be raised from seed. Sow about the middle of May. When the plants are one year old, they should be transplanted into a very deep, rich soil, in rows three feet apart. The foot-stalks of the leaves should not be cut until the plants are two years old.

Salsify is an excellent vegetable. The roots, when properly cooked, resemble oysters in flavour. The seed may be sown from the 1st of April to the middle of May. They require the same kind of soil and cultivation as directed for Carrots.

Spinach is a useful vegetable, and very hardy. Seed sown in the month of September will stand over the winter, and come in for early greens in the spring. For summer use; seed of round Spinach may be sown from May to July. It requires a rich soil. Sow in drills, one foot apart.

Tomatos are much cultivated for their fruit.—To have them early, the seed should be sown in a hot-bed, early in March. When the plants are a good size, and spring frosts are over, plant them out in the garden; let the plants be four feet apart. Plant on a south border near a fence, and they will produce abundance of fruit.

Turnips.—One of the best sort for the garden is the Early White Stone, which may be sown from the middle of May to the end of August.—Sow in drills, fifteen inches apart, and thin out the plants to eight inches asunder. Field Turnips, such as Swedish, Aberdeen, Yellow, &c., may be sown in drills to feet apart, about the middle of May. White Globe, and Flat Norfolk,

will do to set about the middle of July. Turnips are very subject to be eaten by the black flea. A good remedy to steep the seed one night in train oil. This will greatly promote germination, and the growth of the young plants.

EAST OXFORD FARMERS' ASSOCIATION.

To the Editor of the *Canadian Agriculturist*.

Sir,—It affords me much pleasure to transmit to you the report of our last meeting, which gave great satisfaction. It must ever be deeply interesting to the farmer to investigate the results of different systems of cropping, to ascertain how the largest amount of valuable produce may be raised, without deteriorating the soil. The proceedings were opened with the following observations from our President, Mr. Alexander.

I am, Sir,

Your obedt. servt.,

L. C. TEEPLE,
Secretary.

Woodstock, East Oxford,
March 8th, 1853.

The natural fertility of the soil throughout this county is so great—particularly those lands which have been recently reclaimed from the forest, as shown by the great abundance of every kind of farm produce, and by the rapidly improving circumstances of the population—that many have never yet thought of the importance of the subject named for discussion at this meeting. They have not yet felt the necessity for adopting improved systems of rotation, with a view to the permanent productiveness of their land. Some are necessitated to crop heavily for immediate wants; perfectly conscious, perhaps, that they are drawing on their capital. Others are not, to the full extent, aware of the results of severe and indiscriminate cropping; not having yet exhausted those rich elements which it has been the work of ages to accumulate. However that may be, a very slight reference to the statistical returns of older districts in this Province, but especially in the Northern States, will show that good husbandry is indispensable everywhere. The complaints in those quarters of diminishing scales of produce have been very general, according to Mr. Hind, while in some of the Eastern States, where wheat was once largely grown, its culture has greatly decreased. It is vastly important that such matters should be dwelt upon publicly, involving, as they do deeply, the consideration of the means whereby we may hope, as an agricultural people, to attain to a position of solid and permanent prosperity. We have all witnessed within our own limited experience the extraordinary difference in the results of good and bad farming. Every one knows the disadvantages attending the cultivation of impoverished lands. The same tillage is required,

the same expenses for seed, harvesting and thrashing are incurred, while the crops will hardly pay for labour expended. The soil is, in fact, the *treasury* of the farmer's wealth—the stores which are found therein may be husbanded with care, to minister abundantly to all the wants of man with the return of the seasons, or they may be greatly wasted and dispersed in a short period of time. It is for the purpose of investigating this important matter that we are now assembled. I have been requested to make a few introductory observations, illustrating some of the facts which science has disclosed to us, but I must be permitted to say that I feel deeply my inability to do justice to a subject so comprehensive in its range; and that I will only venture to touch upon one or two of the most prominent points bearing upon the question at issue.

It will first be necessary that I should bring before your notice what has long been established by chemical investigation: that the constituent parts of all matter, whether of the soil which we cultivate, of all animals and soils existing, or of the atmosphere by which we are surrounded, (for all these stand in immediate relation to each other), may be divided into two classes of substances or bodies. We find, for instance, with regard to wood, that it is combustible, and that under the action of fire nine-tenths of it, as of all vegetable substances, will go off in the form of smoke, and become part of the atmosphere; but a certain part is indestructible, and remains. A grand division has thus been established. That part which burns away is termed the *organic* part of the plant; the part which remains, or the ash, the *inorganic*. But to give a more correct and definite meaning of the terms, the organic may be said to embrace all that part of the plant which is the product of life and living organs. The atmosphere may be considered the great *reservoir* of organic food, acting upon and combining with the inorganic elements to produce fertility of soil; while it is constituted to nourish and sustain all vegetable growth and development. But we come to consider the nature of those *inorganic* substances in the soil which are indestructible, but which we find wonderfully interwoven with the organic in the works of creation. The *inorganic* elements are sulphur, phosphorus, potash, soda, lime, magnesia, iron, silica, chlorine and iodine. Their presence in the soil is indispensable to the growth of the grains and every kind of crop. What we term fertility is the existence of *organic* and *inorganic* matter in such relative proportions as produce the most perfect vegetable growth, the most perfect grain and roots. Those elements constitute the food of plants—they enter into and become the constituent parts of whatever is

grown, and thus they may, to a greater extent, be extracted from the soil by immoderate and indiscriminate cropping. One marked peculiarity has been discovered, to which it is important I should call your attention, viz: that the *inorganic* parts of one plant are very different from those of another. The relative and absolute quantities, even of mineral food, taken from the soil by the various crops, have been ascertained by a careful analysis of the ash. We find that the chief ingredient in the ash of the grains wheat, barley, and oats, is phosphoric acid; of straw, silica or flint; of turnips, corn and potatoes, potash and soda; of peas, beans and clover, magnesia and lime; from which we can only draw one deduction—that without the presence of such mineral substances in the soil, our grain, roots and clover could not grow.

The discovery of these facts will be found to have a marked bearing on many practical points now to be considered. We observe that a great variety is necessary for the sustenance of man and the domesticated animals. Nature has provided all the elements to produce this variety. Free power has been given to man to draw upon these, while he is endowed with understanding to husband them, so that they shall be preserved to minister to his abundance. We are thus enabled to understand why it belongs to good husbandry to raise such a succession of crops, in rotation, as will bring out the full capabilities of the soil. But there is one point requiring further illustration, which is the restorative power of the atmosphere, in furnishing fresh supplies of inorganic food by the disintegration and decomposition of mineral substances. Nature is always silently at work, reproducing all the elements which have been extracted by the husbandman. But it is a gradual process, and the most beneficial operation will be that which draws upon all the powers of the soil in regular succession, so as to prevent the repetition of the same species of plant within a given period.

Thus, while wheat is growing, which draws principally upon silica and the phosphates, soda and other elements are accumulating, and so on in rotation. But a subject equally important is the due preservation and application of manure, without which it is impossible that any ordinary farm can continue for a succession of years to yield a proper return. If we calculate the amount of mineral substances carried off every year by the exportation of grain, pork, beef, wool, and other produce, the good farmer will see the necessity of husbanding with every care the manure on the farm; he will, to the utmost of his power, be always restoring what he can to the *treasury*. He will further study to give the manure to such crops as will be most benefitted by it, and can receive it without hazard and injury. Recent manures, applied to certain soils

before fall wheat, may produce too much straw, and increase the liability to rust and mildew, whereas it may be given with certain benefit to corn, turnips, and other crops, and after one year's exhaustion the remaining elements would minister more safely to the cereal grains. A healthy cultivated plant (as Mr. Hind observes) requires a properly balanced supply of organic and inorganic food. If too large a quantity of the former is present, the straw will be too rank, while there will be a poor formation of seed. A material point with the farmer is the quantity and quality of his grain. These are matters involving many nice considerations and much scientific skill. It is erroneous to suppose that the first crop will exhaust all the good of the manure. If a root crop, it may extract the soda and potash so far as not to produce immediately another of the same class in such luxuriance; but there might still remain abundant materials for a grain crop, and afterwards for peas or clover. On the subject of fallow, I desire to make one or two remarks. It is necessary that the ground should be kept clean as well as rich, which is most easily effected, where labour is scarce, by the naked fallow; but many practical agriculturists are of opinion that this might be *less frequently* required by the introduction of improved systems of rotation. With our present prospects of railroads, and improved markets for every kind of produce, there will be more encouragement to the farmer to keep up the fertility of the land to the highest remunerative point. It will pay better than it has done to raise a larger quantity of stock. There will consequently be a greater supply of manure, and with the aid of horse hoes and cultivators we may hope to see a large part of the naked fallow superseded by green crops, the cleaning cultivation for which is so beneficial. The great value of clover upon the lighter lands is now well understood, and it must be advantageous to raise more sheep than we have hitherto done, and always keep the full complement of stock in the pastures. But I feel that I am trespassing too long on the time of this meeting, and would only remark, in conclusion, that although the principles and laws which regulate the growth and secure the full development of our grains are fixed and immutable, it is still impossible to lay down rules which shall be generally applicable. The rotation of crops must be regulated by considerations of climate and by the character and composition of the soil, for there are very few farms of such uniform texture that the whole of the fields could be all cropped in the same manner with advantage. It happens also sometimes that the market value of one kind of produce is more remunerative than that of another. These and all other circumstances must have their weight with the farmer, whilst he is

endeavouring to keep to a course of cropping which is in harmony with the principles I have just endeavoured to illustrate. What is essential to profitable farming is that all the field operations should be done thoroughly, as well as economically. Putting in crops badly will bring little results. The land must be kept clean as well as rich. In other words, the farmer must get and keep possession of his soil. To sum up in few words, good husbandry implies clean and thorough cultivation, the use of clean seed, maintaining the proper complement of every kind of stock, while due attention is paid to the preservation and application of manure; but above all, the selection of such a rotation of crops as will bring out, without deteriorating, the full powers of the soil.

Mr. HENRY PEERS, Vice-President, felt this to be one of the most important subjects which can occupy the farmer's attention. Indiscriminate cropping, and general bad husbandry, will soon show results which are not to be mistaken. It might be said that the farmers of England, who have to pay heavy rents on short leases, might be excused for deteriorating the land by severe cropping; but here no such necessity exists. He did not feel competent to give a rotation of crops, suitable to other soils; but he had been endeavouring to adopt, upon a portion of his own farm, the following rotation:—1st year, corn and roots; 2nd, barley; 3rd and 4th, clover; 5th, peas; 6th, fall wheat; 7th, oats; which he thought would keep the land clean, and dispense with the naked fallow. He would manure before the peas, and again before the corn and roots—that will be twice during the rotation. He attached great value to turnips; had found it most profitable to raise a considerable field of them, which enabled him to winter a large quantity of stock. But another portion of his farm he found it advantageous to reserve as more permanent pasture, and for other purposes. He fully coincided in the views which had been expressed as to the injury done to the land by constant grain cropping.

Mr. WELFORD, Blandford (who imported last season a fine Short Horn Bull from England, and will soon have a considerable herd of Short Horn stock), observed that it had been generally thought that it would not pay to attend properly to the housing of stock and winter feeding with grain; that the system had been to sell all the grain, and winter the stock on straw. But he was of a different opinion. He housed the greater part of stock, and thought that the prices and markets were likely to be such as would amply remunerate the farmer for bestowing more care and better feeding, and he would be repaid by the additional supply of manure, which would be of great value in carrying out a proper rotation of crops.

Mr. ALLAN and Mr. SHELL gave the rotations which they had carried out and found advantageous on their own farms, which we regret not being able to introduce at present, having lost the notes we took of them. Mr. Allan had found no difficulty in keeping his land clean without the introduction of naked fallow, by adopting a certain rotation, and working thoroughly what he had under cultivation. Messrs. Ellison, Blandford, Hatch, E. Zorra, McCallum and Garbutt, E. Oxford, and others, gave further illustrations of their systems of cropping. It was altogether the most interesting subject which has yet come under the notice of the Association. The President remarked that there was nothing in the whole range of agricultural practice or science which was more worthy of the farmers' attention. He desired it to be understood that it was with great diffidence that he advanced his views upon a question of such importance and difficulty. Many of those present were, from their long and varied experience, fully competent to pronounce upon their soundness and practicability; and it would be beneficial as well as interesting to invite the further consideration of the subject upon a future occasion.

The next meeting is appointed to be held in the Town Hall, on Monday, 23rd May, at five o'clock P.M.

SUBJECTS FOR DISCUSSION.

- 1st.—The cheapest and most expeditious method of raising the different Root Crops, and most profitable way to apply manure in their cultivation.
 - 2nd.—The further consideration of the Rotation of crops.
- The members of the Committee to meet punctually at four o'clock.

NEW METHOD OF INCREASING THE FECUNDITY OF FISH.

The following is an extract from what appears to have been a most interesting lecture on Natural History, recently delivered before the *Woodstock Mechanics' Institute* in this Province, by Thos. J. Cottle, Esq.

"I have recently received from England a small pamphlet—it is on the artificial production of fish, fish-ponds, rivers, &c. The discoverers were two fishermen named Gehin and Remy, living on the Moselle; they were not book Naturalists, they knew nothing of systems, but they were the right sort of Naturalists, observers of nature in her own haunts. They had discovered that the yield of fish in their river had decreased, and was decreasing every year; they determined to watch and study their habits,

and at last, the bright thought struck them, that if they could collect the eggs it would be easy to preserve them, and fecundate them by means of the milt of the male. Their first experiment was crowned with success, they persevered and were still more successful: their plan was at length brought before the notice of the Academy of Sciences, at Paris, by a neighboring medical man, Dr. Haxo. "The Academy seeing at once, the immense national importance of the two fishermen's proceedings, hastened to call the attention of the Government to it. The Government on its part, after making proper enquiries, and finding all that was said true, resolved to have the system applied to all the rivers in France, and especially to those in the poorer Provinces,—Géhin and Remy were accordingly summoned to Paris, and taken at once into the employment of the Government at good salaries; they were treated too, as men who had made a great and scientific discovery, and secured an immense benefit to their country. Many Savans vied with each other in doing them honour, and the President of the Republic and his Minister made them dine at their tables and figure at their receptions." The value of this method is not the discovery of the fecundation of the egg, for that was known to Naturalists before, but the bringing the knowledge into practical use. Their method is to preserve the eggs in boxes, placed in favorable places in streams, and after they are hatched, protecting the young till able to take care of themselves. It is computed the trouts lay nearly one million eggs, and that not above one in a hundred if left to themselves, comes to maturity,—you may, therefore, imagine, how this method would increase the supply. In this part of Canada, we are very badly supplied with fish, yet there is no lack of water,—why should not this plan be tried here? I think it of such importance, that I shall probably bring it before you in another shape."

Mr. Cottle then proceeded to remark on the beneficial influences the study of Natural History exercised on the mind, and amongst other things observed that it was well understood to promote tranquility of mind, which tends to longevity. In illustration of this, he quoted the ages of those naturalists whose memoirs have been published in the Naturalists' Library, amounting to thirty-nine—of these one lived to 90 years—eight between 80 and 90—ten between 70 and 80—twelve between 60 and 70—six from 50 to 60—two from 40 to 50 years of age.

The Lecturer, says the *British American*, concluded by making the following practical suggestions, embodying offers of a most liberal nature to our Mechanics' Institute, and which we shall hope to see its members take immediate steps to avail themselves of—he said:

"Local Museums are most useful to the enquiring Naturalist, or Archaeologist, (for even in this new country, are sometimes found relics of the antiquities of those former lords of the soil, whose race seems fast passing away, and whose last vestige, will soon be valuable), but it is with natural history that I have to do, and most gladly would I see an attempt made, to form a collection of the animate and inanimate forms of our neighborhood. A herbal of the plants of our locality might be easily formed, and is a part of the collection in which our fair friends might well assist. To dry a plant it is only necessary to lay it between sheets of blotting paper, and place a moderate weight on it—the paper should be changed each day until the plant is dry—the damp paper of to-day may be dried ready to receive the plant to-morrow—a piece of paper should be attached to each plant, with the date of the day it was plucked, and where gathered; the specimen should be in flower, and when possible, the fruit and root should be preserved—transversed and longitudinal sections of our woods would also be valuable. The specimens of an extinct creation found in our limestones, are very numerous and interesting—insects also abound and are easily collected, but the cabinets necessary for their preservation are expensive, still, that should not deter from their collection. Specimens of quadrupeds, birds and fish, take time and skill to prepare—and till you are able to procure a paid Curator, you could hardly find any one to set them up, except in this instance, I should be very happy to act as your Curator in arranging your collections, until you can get a better."

[The lecturer in concluding offered, in the most generous manner, to give a lot of ground for the erection of a suitable building, for the purposes of the Institute, in which the natural productions of that fertile district of Canada, could be deposited and systematically arranged. Success to so good an enterprise, and may the example be followed in other places.—EDITOR.]

TOWNSHIP OF HAMILTON FARMERS' CLUB.

At a meeting of the Township of Hamilton Farmers' Club held at Reynold's Inn Court House, on Saturday February 26th, 1853. Present—Messrs. Hume, Bourn, Masson, Forsyth, A. McIntosh, A. J. Burnham, Richardson, Yeoman, Johnston, C. Black, Bennett, Campbell, Arnott, Phillips, G. Black, Sidey, Alcorn, Pratt, J. Wade, &c., &c. The Club was favored with the company of Mr. John Barnard, Treasurer to the South Monaghan Agricultural Society. After the minutes of the last meeting had been read,

the reports of the two last meetings were read by Mr. Wade, as they were in connection with the present subject.

Mr. Hume then said :

After the very beautiful essay of our friend Mr. Page, and the very practical one of Mr. Wade, I cannot but feel rather diffident in undertaking the part of the work you have assigned to me ; more particularly as the lighter class of soils have hitherto been in a great measure avoided by our most intelligent practical farmers, and in consequence the amount of experimental information concerning them is in some degree limited.— Having myself, however, been brought extensively in contact with what are called the light soils of our Township, and having also seen much of such lands at home, I shall endeavor to express as briefly as possible the ideas impressed on my mind as to the rotations best to be carried out in their management :

And first I would give in my adhesion to the remark of Mr. Wade—that in the present irregularity of our markets, and deficiency of circulating medium, it is impossible to follow out any rotation based wholly or even mainly, as is the case at home, on the preservation and amelioration of the soil. But with our farmers here, who are generally in much need of ready money, the first motive must ever be the procuring a supply of that article. Perhaps, however, our best course in considering the subject is in its relation to the soil, keeping our eye at the same time over the general profit of the transaction.

In speaking of the light soils of this Township we generally refer then, to the gravels which extend generally along the slopes of the old lake beach, or to the range of table land stretching northward from that ridge. The former timbered with a pretty thick growth of hard and soft maple, basswood, beech, birch, white and black ash, iron wood, &c. When a second growth takes the place of the trees cut down, pine and white oak show themselves pretty extensively interspersed with hickory, slippery and rock elm, and an undergrowth of thorn, hazel and bramble. The latter clothed with a heavy growth of oak and pine, the one predominating where the subsoil is of a clayey character, the other where it inclines to sand or gravel. The black soils will usually I presume be classed with those of a heavier character, a position which in England would scarcely have been allowed them.

Our gravelly lands then generally lie on the slope of what seems formerly to have been the lake basin, with some of the undulating heights approaching thereto. They mostly consist of three inches to a foot of gravelly loam, reposing on a subsoil of gravel, of whitish clay, mixed with friable limestone, often so compact as to form a hard pan ; or more rarely on a reddish yellow clay ; in the two latter cases they have usually a tendency to be springy. Large boulder stones, such as Geologists attribute to the action of Icebergs, lie scattered often to an inconvenient extent near the ridge ; though the excellence of the soil in such localities is sometimes fully attested by the heavy growth of timber, low eminences of sand too are frequently thrown up by

the action of currents when this district was submerged. Along the slope of this ridge are numerous beautiful perennial springs produced apparently by the singular peculiarities of our other variety of light land, the heights or plains extending to Rice Lake.

These plains are generally speaking covered by 2 to 6 inches of light yellow sandy loam, almost destitute of vegetable matter, except where the action of some streamlet has caused a difference in the character of vegetation. But their peculiarity lies in the subsoil. Up to a recent period this was thought to be very inferior but it is now ascertained to consist in many parts of heavy brown or reddish brown clay, in others of whitish clay mingled with friable limestone and in a small minority of instances as far as my information goes, of sand. I speak of our own Township.

Of the high quality of these clays there can be no manner of doubt, and perhaps I may say nearly as much for the clays intermingled with limestone, for these rarely—as in the lower slopes—degenerate into hard pan, but are usually dry, and this dryness I have found in many cases—perhaps it is general—caused by a peculiar natural drainage, viz., sand wells. We have sand hills on the lower lands, here sand wells. I have picked into a hard subsoil of solid clay and limestone gravel, lying at a depth of six inches and within six feet, have dug down twelve feet without finding a bottom to the pure sand. You may see holes twenty feet in depth and not over six feet in diameter, which have sunk perpendicular as a well, carrying down all the surface growth, whilst scattered around might be found such cavities in various stages of being filled by the growth of trees and the mouldering in of the sides. In other parts again, the slopes around seem to converge into a basin, often almost resembling an old quarry hole, but seemingly with no superficial outlet for the drainage thus drawn towards it. I can only account for these singular phenomena by supposing the sand gradually drawn from beneath by the washing of the fountains of those springs which bubble up so beautifully around the margin of the ridge beneath ; but the well like shape and solidity of the sides of these sinks when new, forms a very striking peculiarity.

I am sorry I am no Geologist, but the growth of timber on these plains and the deficiency of vegetable matter, tells us that at a comparatively recent period they have been a barren waste, a peculiarity which we can only conceive caused by their having been submerged up to an epoch not very distant from our own, and probably rather rapidly upheaved by subterranean agency. But talking of the timber on these lands brings us back to our rotations. It is beautiful to see the pine giving way to the soft maple or oak, as the land is lighter or more clayey, then gradually creeping in the maple, white ash, iron wood, beech and all the other denizens of the forest : each, as the ever changing character of the soil adapts it to its growth. We may thus learn how varying is the food of each, and how the very growth of one plant by some indefinable process fits the soil for the reception of another.

Referring then to light soils generally, I find such soils easily exhausted, as much perhaps from the facility with which they give out their energies as from their deficiency in vegetable matter. They are generally open and porous, and this, with the frequent absence of moisture, hastens very much the decay of the organic material in their composition. Such being the case you may expect these soils to be advantaged by stimulating their productive powers and restoring as much as possible the vegetable product to the land, as in the case of pasture, soiling, root crops, hay fed on the premises, &c. The nutritive nature of the soil would be increased, first by the amount of decomposition of mineral substances contained in the soil itself; second by the amount of food gathered by the various plants from the atmosphere, whilst the chemical forces brought into play in these various changes, react again on the ingredients of the soil.

Chemists tell us that organic substances which are the principal constituents of vegetable soils, consist of the combination of a few materials, chiefly gasses. The same materials in various proportions form the substance of growing plants, they are taken up largely by the roots, which thus are active agents in the work of decomposition; if hydrogen in large proportion be taken up by the growing plant, carbon, oxygen, or perhaps nitrogen are set at liberty to act on the other components of the soil as well mineral as vegetable. The more foliage the plant exhibits, the larger in general will be the amount of perspiration and evacuation, and of course the greater the force of decomposing power acting on both soil and atmosphere. It is probable also that the powerful agency of plaster and similar manures, is owing to their affinity for some of the ingredients of the soil or air, hastening the progress of decomposition. It follows then that when we wish to impart a greater amount of vegetable matter to the soil, we must make use of plants abounding in leaf and respiratory organs, whilst we may select also manures which will have a tendency to expedite the decomposing process—worms also and minute insects must exert a powerful agency, not only in their mechanical actions but also in the material taken up and given out in the growth of their bodies. Remove the minutest constituent of any organized material, and the whole is resolved again into fresh combinations. How wonderful the influences continually at work on the minutest portion of this earth's surface, on each blade of grass beneath our feet. Truly knowledge is power, when it leads us thus to see our own ignorance, and impels us to press onward in the path of science and of truth, anticipating the time when the knowledge of God in his works, as well as in his word, shall cover the earth as the waters cover the sea.

The character of the mechanical action employed on light soils is also an important consideration, and when the subsoil inclines either to sand or gravel, comparatively little of a pulverizing or opening agency is required. When however the stiff clay subsoil, requires to be worked unto the supersoil of sandy loam, a frequent action of the plough, and repeated exposure

to the influence of sun and frost seems necessary. As to the question of drainage, were any amount of water retained in the soil, it seems absolutely necessary for the efficient carrying out of every rotation; though perhaps in this country a thorough system of drainage is, at present, impracticable. But there is a view of drainage not often taken, which would lead us to expect advantage from it even on comparatively dry soils, any drain acts not only as a drawer of water but as a circulator of air, affording food to the roots of plants, and hastening also the decomposing process going on continually in the soil. Reviewing the matter then, it appears that in considering the adoption of a rotation on the light soils of our Township, we may divide them into two classes, according to their subsoils: first those in which sand and gravel predominate, second those where the subsoil is exclusively of a clayey character. In the former an extensive growth of green crop, to be returned to the soil is required, attended with diminished mechanical action or ploughing and exposure to the air. These are pasture lands or adapted to pasture, clover, peas, &c, and occasional fall crops of grain, sometimes wheat but oftener, especially in western exposures, rye. The treading of cattle or sheep consolidates the ground—the matted roots of clover with the growth of leaf by crops, taking a large portion of their food from the atmosphere, increases the vegetable mould, and a winter grain crop covering the ground before the droughts of summer, affords a better chance of bulk both in grain and straw, while it excludes from the already—often too dry soil—as well the burning action of a summer's sun, as the pulverizing agency of a winter's frost. If you once attain a good bottom on such lands, they afford a most healthy and nourishing feed to either cattle or sheep, especially young stock.

Again the clay subsoils (though after a number of years they may be well adapted to many of our Spring crops) being generally very dry, are apt to bake and burn when in their crude state: thus spring crops should not be used except those early sown and of a smothering character: as peas, buckwheat, tares, &c.,—ploughing in any of the crops, if necessary, would impart vegetable matter to the soil, and at the same time keep it porous and open to the action of the sun and air.

But the most important consideration in any rotation in light lands is, while growing a large amount of vegetable material, to have a good stock to turn it into manure—you want a full stock of cattle or sheep, but of all things try to have them always in good condition. A few turnips will be of great assistance where much straw has to be consumed, and dung from well-fed hearty cattle, will surely contribute to the same state in your crops: as the manure from a lot of starlings will render your crops barren and unfruitful. It is almost an axiom that when you find a lot of comfortable looking animals in the barn-yard, you will find the fields in harvest with luxuriant crops of golden grain.

Under these circumstances, I should recommend, on the first class of soils, some such rota-

tion as follows, on light, gravelly, or sandy subsoil when

| CLEAN | MIDDLING. | DIRTY. |
|------------|-----------------------------|-----------------------------|
| Clover | Clover | Clover |
| Clover | Clover | Clover |
| Pasture | Manured & broken up in June | Fallow or Pasture as before |
| | | Fallow |
| Wheat | Wheat | Wheat |
| Root Crops | Peas | Peas |
| Barley | Fall Rye | Buckwheat |

Whether two or three years' grass is desirable will depend partly on the solidity of the soil.—The last crop of clover ploughed in or manured, or both for wheat. Peas would require plaster and be a full preparation for fall rye, which would be a more certain crop than wheat after peas, particularly in exposed situations. Barley could be taken if a root crop were substituted for peas, the ground being clean; if the land were dirty (as such soil if neglected is apt to become) the late period at which a crop of buckwheat can be sown, allows ample time to work the soil after heat sets in, whilst Stephens tells us, but I have not had the experience, that it is the best crop with which clover can be sown. A rotation for the clay subsoils might be as follows:

| WHERE STIFF. | WHERE MORE FREE? | |
|--------------------|------------------|-------------------------|
| Fallow with Manure | Hoe crops, | Fallow,—part hoe crop. |
| Wheat | Barley, | Fall wheat—Spring wheat |
| Clover | Clover, | Clover |
| Pasture | Pasture, | Pasture |
| Peas on Rag Fallow | Fall Rye, | Oats, part peas |
| Oats | | |

Your hoed crop might be followed with barley; in this case your next white crop would be fall rye, or being followed by wheat, the vegetable matter imparted by two crops of clover, would be a good preparation for oats, whilst the fallow might be well manured. On the stiffer land two crops of grass followed by peas, would bring it into fine tilth for oats. The former list I consider as merely one rotation, varied as you require different crops or according to the state of your soil. The latter for the clay subsoil, is two distinct rotations—one adapted to the stiffer—the other to the more free variety of these lands. In all cases, however, these lighter or barer classes of soils should, as speedily as possible be freed from water, so as to allow both, in their vegetable and mineral constituents a free decomposition, whilst the nutritive matter ought to be studiously increased by the liberal use of both home made and extraneous manures; always bearing in mind that the bulkier the crops you produce, if you make a proper use of that bulk, the richer your land will become. A true definition of a good rotation is a system of cropping, which, while it is ever increasing the produce, is at the same time increasing the productive properties of the soil.

When I reflect on the limited extent to which science, or even a regularly accumulated store of practical facts, has been applied to the elucidation of agriculture, I feel ashamed that the art first born into the world, should be so nearly the last

in information and intelligence. But I do trust a brighter day is dawning upon us. There has been much mawkish sentimentality on the dignity of agricultural pursuits. A Cincinnatus on his little farm! The rich pictures of rural felicity, and the sympathies of our successive races of poets have fostered the feeling. But despite the 'otium cum dignitate' of a Horace, the sweet Bucolics of a Virgil; the glowing description of a Thomson, and the Harkaway of a Somerville, nations have hitherto achieved nationality, most frequently by the oppression, the slaughter and the bloodshed of their fellow creatures. Persian luxury and Attic refinement, alike looked on the masses as an inferior race of beings, and the bulk of the population lived only in degradation and misery. Our own beloved little Island has gained by her commercial enterprise, a name never to be expunged from the history of nations; alas, that even there the colossal capitals attendant on extended manufactures and commercial operations, should chain the mass of the community in deepest slavery at labor's car. It remains for the present generation, for Canadians, for us, gentlemen, to show the world that a nationality can be earned by the peaceful and beneficent pursuits of agriculture — pursuits which, in every profit they throw into the hands of an individual, equally enrich the community.

The mines of California, the gold fields of Australia, may pour in their glittering riches; but it is the grain, the mutton and the beef, the cotton and the wool, with the labour of those who are fed and clothed by them which must ever be the true wealth of a nation.

Mr. Samuel Campbell said, he was very sorry that he did not know much about farming on any soil, and still less upon light soils, as his farm was a very heavy soil; he thought that draining was the first thing to improve a soil, and that it would pay on either heavy or light soils; he had always been draining on his farm; he put in half a mile last spring; he supposed he had ten miles of drains on his farm; when he began first, he used to fill his drains with wood, but he found that wood was soon decayed, and the frost caused the drains to crumble in, fill, and stop up, so he thought there was nothing for him but tiles; he put in near a mile of tile drains last fall. He did not like summer fallowing as it did not work well with him; the rotation he had adopted was to sow peas on green sod, and after the peas came off, to cross plough lightly and sow fall wheat after the wheat he took a hoe crop, (hoe crop, includes Indian corn, potatoes, turnips, ca. roots, mangold wurtzel, beets, &c.;) then sowed spring wheat, then in spring he ploughed and sowed oats with clover; his rotation stood thus:—1st, peas; 2nd, fall wheat; 3rd, hoe crop; 4th, spring wheat; 5th oats with clover; then 6th, hay; 7th, pasture. He found in cross ploughing after the spring wheat, that his land turned up clean and mellow; he found that the earlier he got his clover seeds sown they did the better; he thought that barley was best to seed down with. He tried last spring, the following plan: he took an eight acre field, and on six acres of it he planted potatoes and corn—put three rows of corn, then

three of potatoes alternately over the piece—the other two acres he put in carrots, and he had from the piece, 1510 bushels carrots, 180 bushels corn, and 900 bushels potatoes—the drills lay north and south as the plan succeeded well with him, he mentioned it that his brother farmers might try it.

Mr. A. McIntosh, Cold Springs, said he was best acquainted with light soils, as his farm was what is called light land; the system he had adopted was something like this: he ploughed over his green sod in the spring, and sowed oats on it, then after the oats he took a crop of peas, after the peas, then fall wheat, then manured well and took a hoe crop, after that spring wheat and seeded down with clover, cut the clover for hay two years and pastured the third, and then commenced his rotation again. He had as an experiment some years ago sown Fife wheat, Club wheat, Black Sea wheat and the old Siberian wheat, all in the same field, the result was that the Siberian proved almost a total failure, the Black Sea wheat very bad, the Club was better, but the Fife wheat was much the best—the land was a yellow loam with a clay subsoil.

Mr. David Black, Baltimore, said that they could hardly keep to a proper rotation in his neighbourhood, as their clover was very apt to kill out; last year he thought the warm dry weather had greatly damaged their young clover; he could scarcely say that he had adopted any regular rotation of crops, but he thought the following did best with him;—1st to break up green sod and summer fallow it, and sow it with fall wheat, and then take a hoe and green crop and manure, then spring wheat or oats and seed down with clover seed (as barley did not do well on their light soils), then cut it for hay two years and pasture it one year, which made a seven years' rotation. He, one year as an experiment, ploughed in a crop of clover for wheat, he pastured it in spring, and about a month before he intended to plough it, he kept out the cattle and let it grow quite rank; he ploughed it down about the first of July; he then let it lay about six weeks and cross ploughed, and then seed sowed it; his wheat was badly winter killed that year, but in places where it was not winter killed it was very good.

Mr. John Pratt said the plan he adopted was to sow peas on the green sod; then to sow, after the peas, either spring or fall wheat; then the third year, a hoe and green crop with manure; then the fourth year, barley or spring wheat with clover seeds (he sowed $5\frac{1}{2}$ pounds of clover seed to the acre); he then let it lay three years—two years for hay and the third for pasture. He drew a great deal of manure from Cobourg, which enabled him to grow a large quantity of roots, principally turnips—he found the manure he drew from town best adapted for turnips. All the manure he drew through winter he applied to his root crops in spring; what he drew through summer he applied to his pea stubble for wheat in the fall. He always let it ferment slightly before applying it, as the heating destroyed all noxious weeds, seeds, &c., that might be in the manure. He, last year, put on 200 one horse cart loads of

dung on two and a half acres of turnips, and he thought that the turnip crop would almost pay for the manure, besides the benefit to the land afterwards (he had never paid more than one shilling for a waggon load of dung in the town). He thought that dung ought to be rotted for turnips: last year when sowing his turnips, he fell short of the dung he had drawn from the town, and applied some green from his own barn yard, and the turnips sown on it were not half so good as those sown on the other.

Mr. George Black said he had no experience on light soils in this country; the practice that he pursued on light soils at home, and he would be inclined to try the same here, was a six-course shift: 1st year, oats on green sod; 2nd year, turnips; 3rd year, wheat or barley with clover seeds; the 4th year, hay; 5th and 6th years, pasture. There, soil was so light that it would drift like snow when they were preparing it for turnips, but it had a good clay subsoil; and though it was so light, he had seen the wheat on it taller than he was. They fed off most of their turnips with sheep, which effectually treaded and consolidated the soil. He would prefer rotted dung not too much heated for turnips. Should his dung be likely to over heat, after it was turned over, he would turn on his horses or cattle and tread it well down, which would prevent it from heating too much. He thought manure was best applied to turnips just before sowing; he had tried manuring land for them in the fall, but he did not find it answer well.

Mr. Forsyth said, as he was but lately come to the country, and the farm he was on was a strong clay, he could say nothing about the rotation best adapted to light soils. His practice with manure was to draw it out through the winter, and lay it in a heap, and then apply it to his root crops in the spring; he found what he drew out in winter was well rotted when he came to apply it in spring. Would prefer applying dung to potato land in the fall, but to turnips in the drill at sowing.

At the call of the President, Mr. John Barnard, South Monaghan, said he had often read the reports of our proceedings, and was forcibly struck with them as being in keeping with our character as practical agriculturists. He intended being present at some of our meetings, but he never had an opportunity till to-day, when having seen a public notice of our meeting, he had come to see, not as a teacher, but as a learner. His father farmed a farm of five hundred acres in Yorkshire, England (on which he was brought up) which he believed was principally light land. He believed their practice was different from ours—at least from any he had heard mentioned to-day—but as he was young when he left he could not distinctly remember it, so that he could not go fully into it. One thing he distinctly remembered—and he had not even heard it mentioned to-day—was, that on all their light soils they used what they called a *presser*, which they found highly beneficial for wheat, as it made the land solid and brought the wheat up in drills. Another thing which he thought well adapted to light soil here, and of which he had heard very little to day, was Indian

corn. Our neighbours on the other side of the Lake raised large quantities of it on their light soils, and he believed they were not overly fond of hard work. The Society with which he was connected got on middling well: he hoped they would be able to do better by and by. Though but a handful they kept together. They paid ten shillings each last year to keep up their Society; but since the amount for townships had been lowered by the new Act, they paid five shillings each this year. Their Society had two good Durham Bulls, and considerable balance in hand besides.

Mr. Masson said, that as the gentlemen that preceded him had spoken so much and so well he would be brief. As Mr. Wade had been very inquisitive about manure, he would begin with that. When he came to this country, he used to draw it out quite early when he had to dig it from the frost, but he found that when he came to apply it, it was quite cold and did not do well. When dung was applied fresh from the yard to turnips, he found it, when he came to plough the land afterwards, quite hard *caked*—rather, he thought, preventing nourishment getting to the root of the turnip than nourishing it as it ought. His present practice was to turn over his dung in the spring, then let it lie five or six weeks, and turn it right into the turnip drill. This plan he found answered very well. He would prefer all his dung fermented. Some parts of Mr. Hume's Essay he did not like, and other parts he thought very good. He objected to buckwheat, as there was no getting it out of the land. He had seen it come up on the land after it had been well summer fallowed. He would as soon have thistles or charlock on his land as buckwheat. Every farmer ought to know what kind of crop was most suitable to his own land. Were he cultivating light land in this country, his plan would be to break up green sod and plant it with Indian corn, then he would the second year sow spring wheat with manure, then the third year oats or barley with clover seed, then the fourth year he would take a crop of clover seed and let it lie one or two years in pasture, and commence again with Indian corn.

Mr. John Wade said, his plan with manure was different from any that he had heard. He applied his manure to turnips fresh from the stables, and he had always had as good crops as any in the neighbourhood.

It was moved by Mr. A. Alcorn, seconded by Mr. J. Wade, that a vote of thanks be given to Mr. Hume for his excellent opening.

It was moved by Mr. Samuel Campbell, seconded by Mr. G. Black, that the next meeting be held at Mackintosh's Inn, Cold Springs, on the last Saturday of March, at twelve o'clock noon, and the subject for discussion to be Agricultural Education. Mr. John Wade to introduce the subject.

WALTER RIDDELL,
Secretary.

The accounts from all the Spain provinces agree in stating that there has never been known so great a fall of snow as this winter.

THE PROFESSORSHIP OF AGRICULTURE.

The following notices of Professor Buckland's lectures are taken from a City cotemporary; they were contributed, we believe, by one of the members of the Agricultural class, and will probably be perused with interest by a considerable number of the readers of this journal.

To enlarge upon the importance of agricultural pursuits, would be merely to give utterance to common place truisms. Man may exist without many of the arts of life, but without the cultivation of the earth he could not live, except as a rving herdsman or shepherd, depending upon the spontaneous productions of the earth, and the produce of his flocks and herds; or as a savage, depending altogether upon the fruits of the chase. Even savage tribes have felt the necessity of cultivating the ground to add to their means of subsistence. The Indians of North and South America, before the invasion of these continents by Europeans, cultivated and harvested the maize and a few other plants in a rude way. And the wild tribes of Asia and Africa have followed the culture of the earth, to a greater or less extent. In Canada the importance of the calling is admitted on all hands. Canada is for the present, and must for a long time be, essentially an agricultural country. Four-fifths at least of our population, are directly engaged in the cultivation of the soil; and of the remaining one-fifth, a large number, as the country tradesmen and mechanics, are directly dependent upon their relations with the farmers of the country for occupation and support. In fact, nearly our whole population may be said to be directly dependent upon the profits and the success of agriculture. Nearly our whole trade and commerce, our manufactures and our internal and public improvements, are based upon it.

The importance of the subject being then admitted, how necessary it is for our practical farmers to have facilities for acquiring the knowledge how to obtain the largest and most valuable amount of produce from the earth at the least expense, and with the smallest possible—or rather we should say, without any deterioration of the soil? How interesting to the country gentleman of liberal means, or to the student having leisure, to have facilities at hand for the study of this beautiful science, which opens up so many of the mysteries of nature, and is so intimately connected with many of the other arts and sciences of the present day.

DIFFICULTIES TO BE OVERCOME.

We have been led to these remarks, from the circumstance, not so widely known or appreciated as it should be, that Professor Buckland, of Toronto University, is at present, and has been for some weeks past, delivering an able course of Lectures upon this noble art. Mr. Buckland had a difficult task before him. From a variety of causes, which appear almost unaccountable at first sight, but yet which may be philosophically explained, there has always been a remarkable apathy shown towards the study and improvement of this art, and where Agricultural Chairs

have been heretofore established, the getting up of the classes has been, at first up-hill work. One of the most celebrated Professors commenced with a class of only five, and it was some time before he succeeded in awakening such an interest in the science as to draw together a large class of students. Mr. Buckland stated at the commencement of his course of lectures, that if he could succeed in the first session in awakening such a spirit of enquiry as would lead his class and others, to take a lively interest in the matter, and to read and seek to acquire information for themselves, he would feel that his labor had not been in vain. This, we believe, he has succeeded in doing already. He commenced with a class of six gentlemen, residing in the vicinity of Toronto, and all directly interested in agricultural pursuits, to whom he lectures twice a week, and another and larger class of students attending educational institutions in the city, to whom, we believe he lectures once a week. The Lectures have been, so far, exceedingly interesting, and have, by incidental digressions, naturally connected with or suggested by the subject, entered upon fields of enquiry in science, or offered glances at the past history of arts, sciences, and of mankind, of a most valuable and interesting kind.

Mr. Buckland commenced his series by taking a brief general view of the importance of the subject, man's absolute dependence upon it, the happiness and independence of the farmer's life, the influence that the pursuit has upon the mind as tending to the establishment of religious feeling and to the conservatism of social and political institutions, and as tending to patriotism and attachment to his country; the influence upon the physical functions, as tending to health and strength, and the preservation of the vigor, and physical as well as mental constitution of the human race, &c.

HISTORY OF ANCIENT AGRICULTURE.

The Professor then proceed to give a brief retrospective view of this history of the art, its first institution, coeval with the birth of mankind: Adam was put in the Garden of Eden, to dress it and keep it, Cain was a tiller of the earth, and Abel was a keeper of sheep." He traced the progress of agriculture from the earliest ages down to the present time, showing that the problem of obtaining subsistence from the earth had given an influence to the political institutions of countries, had tended to disperse the human race over the face of the earth, and had given birth collaterally to many of the more liberal and abstract sciences, in illustration of which he cited, among other things, the circumstances connected with the periodical inundation of the fruitful valley of the Nile.—After these inundations, as all landmarks were effaced, it was necessary to devise some means of ascertaining the quantity and description of land which each person had been in possession of before the inundation. Hence arose the science of Geometry, in which the Egyptians were the earliest masters. The position of the Heavenly bodies was brought into account to aid in these calculations; hence, also the science of Astronomy, &c. We cannot trace

in this brief sketch all the ground gone over by the learned Professor. We give merely a few points, in order to show the interesting nature of the lectures, upon what might, at first sight, appear as a dry and unpromising subject.

In treating of the Agriculture of the ancients, he showed that the idea, that many of the systems or modes of cultivation in use at the present day are altogether new discoveries, is to a great extent a mistake. He showed from fair deductions, that even before the Deluge, Agriculture must have made no mean advance, in order to sustain the large population, which, from moderate calculations, must have existed upon the earth at that period. From thence he went to the Agriculture of the Egyptians, that country which was the cradle of early science. He showed from well grounded deductions, and from ancient writings, that in that country the art had made no mean progress. From thence it spread to Greece, to Judea, to Italy, and other parts of the world. He showed by passages from the early Greek and Roman writers, that many important matters connected with the practical culture of the earth, and which have been very generally supposed to be recent inventions and improvements, were in fact, known and practiced by the ancients, and that many of these important facts, though lost sight of for ages, and within the last century or two produced as new inventions or discoveries, were in fact only rediscoveries. And so of the Agriculture of the East; India and China, and other countries. The customs of these countries are believed to have been nearly in a stationary condition for many centuries, and yet their agriculture was in many points good, and would compare not unfavorably with the system in Europe till a recent period. The Chinese, in many points, were not behind us at the present day, as they practiced the system of manuring and irrigation in perfection, and obtained an astonishing amount of produce from a given extent of ground.

In illustration of the knowledge of Agriculture possessed by the ancients, and by the inhabitants of countries at a more recent period, who could have derived no aid from European improvement, it was stated that the Egyptians knew the value of and practiced artificial irrigation, in addition to the natural overflow of the Nile. The state of the Art among the Greeks was shown, as described by ancient authorities, as Herodotus and others—and the Agriculture of the Jews, as deducible from incidental allusions in the Bible. It was shown from the writings of Pliny, Virgil, and other Roman writers, that that people had carried the Art to a tolerable state of perfection, that they understood the value of and practiced drainage, rotation of crops, manuring, &c., and that they had different systems of tillage, adapted to the different varieties of soils.

Even some of the inhabitants of this Continent, as for instance the Peruvians, had several features in their system of tillage which have been marked as among the improvements of later days. The Peruvians practiced irrigation on, an extensive scale, before the discovery of the Continent by the Spaniards, and there were public works

constructed by the then Sovereigns or Incas of the Country for that purpose. These Sovereigns patronized and honored Agriculture, and set an example of industry to their subjects, by every year performing the public ceremony of digging a piece of ground with their own hands.

Though we are not prepared to quote any of the particular passages cited by the worthy Professor in support of his views from ancient writers, yet the following translation of passages from that beautiful poem, the *Georgics* of Virgil, will give a fair idea of the amount of Agricultural knowledge possessed by the Romans. The skilful Agriculturist will readily perceive that some of the ideas are not according to the most scientific principles of the present day, yet the poem on the whole, describes a state of farming not much behind many parts of Great Britain till within a very recent period, and probably not behind some portions of Europe at the present day. Virgil says in the first Book of the *Georgics* :—

“In early spring when the melted snows glide down the hoary hills, and the crumbling globe unbinds itself by the Zephyr, then let my steer begin to groan under the deep pressed plough, and the share worn on the furrow begin to glitter. That field at last answers the wishes of the covetous farmer, which twice hath felt the summer's sun and twice the clouds of winter; immense harvests even burst his barns. But before we cut an unknown plain with the ploughshare, let it be our care previously to learn the winds, and the various quality of the climate, the ways of culture practiced by our forefathers, and the *genius and habits of the soil*; what each country is apt to produce and what to refuse. Here corn, there grapes, more happily grow, nurseries of trees elsewhere, and herbs, spontaneous bloom. Do you not see how Timolus sends us saffron odours, India ivory, the soft Sabæans their frankincense? But the naked Chalybes send steel. Pontus strong-cented castor, Epirus the prime of the *Olympic mares*.”

“These laws and external regulations nature from the beginning imposed on certain places; when Deucalicon first threw those stones into the unpeopled world, whence men, a hardy race, sprang up. Come then, let your sturdy steers turn up a soil that is rich forthwith, for the first month of the year; and let the dusty summer bake the scattered clods with suns mature and vigorous. But if the land be not fertile, it will be sufficient to raise it up with a light furrow, even so late as towards the rising of Arcturus. In the former case, lest weeds obstruct the joyous corn; in the latter, lest the scanty moisture forsake the barren sandy soil.”

“You will likewise suffer your lands after reaping to rest every other year, and the field to harden and overgrow with moss, or, changing the season, you will sow there yellow wheat, whence before you have taken up a joyful crop of pulse, with rattling pods, or the vetch's slender offspring, and the bitter lupines' brittle stalks and rustling grove. For a crop of flax burns the land, as also oats, and poppies impregnated with Lethæan sleep. But yet your labor will be easy,

even though you should sow those kinds of grain every other year, provided you be not backward to saturate the parched soil with rich dung, or scatter sordid ashes upon the exhausted lands, thus too, with this precaution, your land will rest merely by changing the grain. In the meantime, should your field remain untilled for one year it will not be ungrateful.

“Often too, it has been of use to set fire to barren lands, and burn light stubble in crackling flames; whether the land thence receives secret strength and rich nourishment, as with land that is poor, or whether every vicious disposition is exhiled by the fire, and the superfluous moisture sweats off, as happens if the soil be watery, or whether the heat opens more passages, and secret pores, through which the sap may be derived into the new born herbs, which is the case with the stiff clay, or whether it hardens more and binds the gaping veins, as happens to a spongy soil; that the small showers, or keen influence of the violent sun, or penetrating cold of Boreas may not hurt it.”

“He too greatly improves the land, who breaks the sluggish clods with harrows, and drags osier hurdles over them, (nor does yellow Ceres view him with an unpropitious eye from high Olympus), and he also, who after the plain has once been torn again breaks through the land; that raises up its ridges, and gives it a second furrow, turning the plough across, and gives it frequent exercise, and rules his lands imperiously.”

“Pray, ye swains for moist summers and serene winters. In winter's dust most joyful is the corn, joyful is the field. This improves the fertile Mysia more than all her culture, and hence even Gargarus admires his harvest.”

“Why should I speak of him, who immediately after sowing the seed, persecutes the land anew, and levels the heaps of barren sand; then on the springing corn drives the stream and ductile rills? and when the field is scorched with raging heat, the herbs all dying, lo! from the brow of a hilly tract he decoys the torrent: which falling down the smooth worn rocks, awakes the hoarse murmur, and with gurgling streams allays the thirsty lands,” &c., &c.

Here in the above passages we find Virgil alluding, with poetical embellishments, to several of the features in modern agriculture. He hints at the adaptation of the plant to the soil and climate, to vigorous and thorough tillage to the fallow, to manuring, to rotation or alternation of crops; in other parts of the work he describes the value of clover, beans, &c., as alternating crops, in fact, pictures the very system of alternation in vogue in some parts of England at present. He also alludes here to the system of clay burning, much in use on stiff soils at present; to frequent and thorough tillage, and to irrigation—almost considered as a recent discovery, and of the value of which, indeed, or even of the mode of performing it, many farmers of the present day are quite ignorant. In other parts of the poem, Virgil gives minute directions for cultivating the different kinds of grain and fruit trees, pruning the latter, &c., steeping seeds in various preparations, as of nitre, &c. He treats of the breeding and management of cattle, the cultivation of the vine,

the management of bees, &c. In fact, the whole book gives us a charming picture of rural husbandry, and shows that the progress in agriculture, at that time, must have been very good indeed.

SLOW PROGRESS OF AGRICULTURE, COMPARED WITH OTHER ARTS.

In our last notices of these interesting lectures, we sketched briefly the course followed by the Professor in introducing the subject, and in describing the progress of the art among the nations of antiquity. In this we were compelled necessarily to omit many interesting topics and illustrations, introduced by the lecturer, as connected more or less intimately with the subject.

Passing from this branch of the subject, the Professor next sketched briefly the progress of the art among European nations during the Christian era, tracing it rapidly through the period commonly called the dark ages, when the art was probably in a stationary or retrograde position, and of which period we possess very meagre accounts—down to a period of two or three hundred years back, when a spirit of improvement in culture and agricultural machinery first began to arise. From this period he enlarged more upon the progress of improvement, and upon the history of agricultural literature and experiments.

In following the course taken by the lecturer, we shall confine ourselves more particularly and very briefly to the history and the progress of the art in the British Islands. And such an enquiry is not altogether without practical value, as it may show what circumstances have led to a true knowledge of the laws governing vegetable and animal physiology, and by what labour and perseverance, and sacrifices, these truths have been arrived at.

The progress of agriculture in all ages in comparison with that of the mechanical and scientific arts has been slow. But when we examine the reasons for this, the circumstance is not at all to be wondered at. The manufacturer or artisan can conduct his labor or experiments, under his own immediate eye, or with his own hands. He may have his machinery, and the material he operates upon, all enclosed under a single building, and in an artificial temperature, which he can control to suit his purpose. He works upon understood mechanical or mathematical rules. He can bring his labors to a conclusion in a short time, and when he has arrived at a certain result, he knows that the same operations, conducted with the same materials, and under the same circumstances will always produce precisely the same result.

But with the agriculturist the case is widely different. Before the acquisitions of science, he had as it were to work in the dark. He did not know the qualities of the soil he had to work upon. He had to labor with defective machinery to govern his operations, (and very often with limited knowledge upon the subject,) according to all the peculiarities of climate, subject to the thousand vicissitudes of wind, sun, and weather. A whole year was required to bring his experiments to a conclusion, and when a successful result was by chance arrived at, if the cultivator

fancied he had now discovered the true course to be followed, he repeated the experiment; then possibly, from causes he was totally unacquainted with, from some hidden property of the soil, from some minute detail in the mode of operation, which had escaped his observation, or from some unpropitiousness in the season, he found his repetition a total failure, and all his calculations were thrown aback.

It is thus that the progress of this art has ever been slow. It requires the accumulated experience and observation of many years to arrive with certainty, perhaps at the knowledge of a single truth. Another cause of slow progress, is the necessary isolation in which the very nature of the employment compels farmers to live, they cannot communicate with one another and cooperate so readily for mutual benefit as those who reside in towns and villages, and accustomed more to the communion of their own thoughts, and to read the book of nature as written in the leaves and fibres of trees and plants, in the habits of the animal creation, and in the varying skies of summer and winter, than to intercourse with their fellow men, they do not acquire the same facility or disposition to impart their ideas to others, as those who are in the habit of meeting more frequently together.

All thanks then are due to those benefactors of mankind, who by laborious investigation, and perseverance in experimenting and searching after truth, and too often at great personal sacrifices, have succeeded in placing the world in possession of the facts, by which agriculture has arrived at its present state of progress. The same devoted labour and perseverance, may possibly hereafter yet bring to light new facts, or help to clear up mysteries, which have not been satisfactorily explained.

HEREFORDS vs. SHORT HORNS.

(For the Canadian Agriculturist.)

Piffard, Livingston Co., N.Y., March 15, 1853.

DEAR SIR,—I was glad to see the name of Hon. Adam Ferguson attached to an article on Short Horns, and was much pleased with his usual gentlemanly style and "straightforward" manner of treating the subject, and duly appreciate the conduct of his worthy friend, Mr. Vail, of Troy. A breeder should be liberal in such a dilemma. We are all too apt to make exalted statements, but however eager we may be to impress our *own opinions* on the minds of others or controvert those of our opponents, the truth must ultimately prevail, and whatever is based on error is utterly worthless. Most breeders believe their own stock "*best*," and generally extol those with whose good qualities they are most familiar. Hence an impartial trial should be made.

My complaint in this matter is, that Short Horn men claim "*first class*," without having

gained an honorable title to it; nor have they shown any *just disposition to prove their claim*, having had various opportunities to do so by Hereford breeders in each country. Had they been *confident* of their superiority, they certainly would have accepted. Again; I have frequently seen animals in said "*first class*," take first prizes, with "*hollow crops*," *very large paunch*, *enormous bone*, loaded with "*stabby flesh*," which in my opinion are four of the greatest evils that can enter a breeder's herd, and when brought under the inspection of a *judge* skilful in his profession, would be justly condemned. I consider this subject a very important one, and if not more closely observed, will be very injurious to all societies. The best breeders will cease to show. This has induced me to write *unceremoniously* against such kind of judges. I may not have been very "*courteous*," but I contend I have written the "*truth and nothing but the truth*," and should like to see it established as the breeders' motto. He who breeds bulls for public sale, and sends from his herd a grade for *pure*, is an enemy to his stock, himself, and his country. A transaction of this kind can never be concealed, for his progeny will be certain to detect it.

It is the opinion of Mr. Fergusson that Short Horns are the most profitable "for all purposes." My opinion is that Herefords claim this. Mr. Fergusson's cow weighed 1992 lbs., live weight. My Hereford cow weighed 2313 lbs.; her dead weight was not given, but I never saw one that would sink less offal. She was perfect in her symmetry, and her quality of meat could not be surpassed. Mr. F. is in possession of "Mr. Bate's professional secrets." I have been intimate with some of the best breeders England can boast of, "*names*," if necessary. So far Mr. Fergusson and I stand on equal footing, and I glory in our mutuality, more especially when it is a person I so highly esteem; nor have I any fear of "*bickering or squabbling*," with him.

Now I have a proposition to make, which I hope will be accepted with good feeling by "*the best*" Short Horn breeders. I will place my *untried* heifer "Dairy Maid," 2 years old, dropped May 18th, 1851,—will calve in July; also, "Bright Eye," dropped April 23rd, 1851,—will calve in June; both equally "*pure pedigrees*," descended from English Hereford Herd Book stock, and shall be given with them, against any two Short Horns of the same age, produced by one breeder in Canada, the time of trial shall be two, three,

or more years, as may be agreed upon by the Executive Committee of the Provincial Agricultural Society. All shall be weighed when put on trial; the food, milk and butter weighed, as the experiment proceeds. They shall be shown each year at your animal Show, their quality, symmetry, &c., shall be judged, by competent judges, appointed by the Society, and again weighed at the end of the trial. If I am fairly beaten, Short Horn men may have my consent to show in "*first class*." I do not advance this with any *prejudice* against Short Horns, for I think the "*very best*," beautiful animals. I make this offer to place them in juxtaposition with "*first class*." The Society should appoint the person to take charge, and pay him liberally for his *responsibility*; it would be the *best* and most *satisfactory* trial they could make. I will deliver these Heifers into the care of the person named, by order of the President of your Society, whenever called for; and will give an affidavit that neither has had a particle of meal in their lives, to my knowledge.

I should like if practicable to have the Heifers in the neighborhood of Baron De Longueuil's bull, Climax, and I would take the calves away each year, as soon as dropped.

I am, dear Sir, yours, &c.,

Wm. H. SOTHAM.

P.S.—I am happy to say I imported the Short Horn cow, *Wildame*, the dam of the heifer purchased by Mr. Fergusson at Mr. Vail's sale. She is highly bred, and one of the "*right sort of Short Horns*." I shall be pleased to give him any information respecting her, which I assure him will not injure his herd.

[We publish the above letter, although it contains little but what Mr. Sotham has written before in this Journal. If individuals, or Societies would incur the trouble and expense of such a test as Mr. S. proposes, the result as far as it went, would no doubt be interesting; but the *main question* would, in our opinion, be as far as ever from being settled. To regard that settlement as depending upon a comparative trial, however long and carefully conducted, between two specimens of each breed, is simply delusive; it would be drawing from the most slender premises, a sweeping conclusion, with a vengeance! We beg to submit a far more reliable and satisfactory plan, viz.: the encouragement of the diffusion of the best blood of both Short Horns and Herefords as widely as possible; and when large numbers of farmers have had practical experience of both, *they* will be able to say, and

their preference will show, which breed, upon the whole, is best adapted to the climate, pastures and markets of the country. But little confidence can be placed in mere isolated trials, for such a purpose: a much wider range of experiments is required for the solution of questions of this nature.]—EDITOR.

MURRAIN IN CATTLE.

Harwich, March 17th, 1853.

To the Editor of the Canadian Agriculturist.

SIR,—Having lost, within the last few months, a cow and two two-year-old heifers in calf, from murrain, or red water, it induced me to search for the cause and a means of prevention of the disease. I found, upon carefully examining the animals, that there was a mass of inflammation, including the stomach, liver, bowels, apron, bladder, and more particularly the kidneys, with a number of matted cakes in the folds of the stomach. As for the cure of the disease, it is in general too late when first found out, so I shall go on to the means of prevention and the first cause of the disease. A large quantity of the land in this section is low and rich, with rank vegetation, and in the dry summer season but little water, except from wells. I am perfectly satisfied that water in ponds where cattle have access, and made foul by their dung and urine, will cause acidity of the stomach and indigestion; as likewise coarse food in the winter, without any roots, will cause weakness of the stomach, and indigestion, colds, &c.

My idea is this, that a variety of agents, and foul water in particular, cause much acidity of the stomach and indigestion, which is the first cause of murrain; in fact, the animal becomes bilious. Therefore, if we constantly correct the tendency to acidity by giving a portion of saleratus or other alkali with the salt, when the cattle are salted, we shall in most cases prevent the disease; and when ponds are necessary, to pump the water into a trough would be advisable. I have lived in this part of the Province seven years; every year a number of cattle have died around me from murrain, but I lost none until this year: for six years my cattle had access to a pond adjoining a large pile of ashes, which gradually leached into it; the seventh year they were shut out from the pond, and three died. Comment is useless.

Yours respectfully,

A CONSTANT READER.

JUDGING OF PLOUGHS.

To the Editor of the Canadian Agriculturist.

DEAR SIR,—In reading the Address of Angus Cameron, Esq., published in the February No. of the *Agriculturist*, I was much pleased with the able manner in which he brought the subject of ploughing before the public, as well as the way that ploughs are now generally made; many of which that get prizes at our Exhibitions, were they subjected to such a test as Mr. Cameron suggests, would come far short of what they profess to be. I fully agree with him in saying, that until a plough is judged in this way it cannot give general satisfaction. Now, it is a well known fact, that many farmers are good judges of ploughing, and yet know little or nothing of the draught of a plough. I think it would be more satisfactory, both to farmers and plough-makers, to have the ploughs tried at the Provincial Exhibitions, &c., at different depths—say to turn a furrow slice, 6×9 and 7×10 respectively; for many ploughs, that can do good work at the former depth, would at the latter break their furrow all to pieces. So, Mr. Editor, I propose less filling and more ploughing.

LOTHIAN.

Hamilton Township, March 3, 1853.

CLOVER AS A PREPARATION FOR WHEAT.

London, C.W., 25th March, 1853.

To the Editor of the Agriculturist:

SIR,—Being a young farmer, and not much experienced in the pursuit, but entertaining the opinion that *Red Clover* sown on ground intended for fall wheat, pastured during the summer, and turned under, say about 1st Sept., would be a good method of preparing the soil for wheat—and not having seen it tried in this part of the country, I feel somewhat timid about trying it, without the opinion of more experienced persons; and, therefore, would be glad to have your opinion with regard to it, if you will be kind enough to give your views on the subject in the next *Agriculturist*. And I beg you will pardon the liberty I have thus taken by addressing you.

Your most obt. servant,

A SUBSCRIBER.

N.B.—The soil is rich and black, mixed with loam and clay, on clay bottom about 8 to 12 inches from the surface.

P.S.—I observe in the *Farmer's Guide*, by H. Stephens, vol. 1, page 617, par. 2612, that the author recommends harrowing winter wheat in

the spring. What do you think about such treatment in this country?

REMARKS.

A clover ley, when the soil is sound, clean, and in good heart is considered by many farmers, both here and in the old country, as a suitable preliminary for winter wheat. We are not quite sure whether we thoroughly understand our Correspondent. He means, we presume, that the clover should be sown, at least, the year previous to the pasturing and ploughing. After the feeding of cattle a considerable amount of vegetable matter in the shape of stems, leaves, and roots, will remain, which when well incorporated with the soil, tends to increase its fertilizing power. A difficulty in this country is often experienced—especially on heavy lands,—in covering sufficiently a green crop, owing to the hardness of the ground, in August and September. A greenerop for manure, ought to be uniformly covered by the acts of plowing and harrowing. It sometimes happens that wheat after clover is more liable to wire worm and other injurious insects, than when preceded by a fallow, or a fallow crop. Our Correspondent had better satisfy himself on the point by making a trial.

With respect to the harrowing of wheat in spring, much depends on the state of the surface soil, the vigour and thickness of the plant, and even of the weather. On light, spongy soils, much loosened by the frost, the action of the harrow would not be beneficial; a heavy rolling, when the land is sufficiently dry, should be given. On stiff soils, where the surface in the spring is hard and bound, a light harrowing would break the crust, and allow the air, warmth and moisture, more rapidly to reach the roots of the young plants, thereby materially aiding their growth. Upon this principle—the frequent stirring of the soil—the efficacy of the horse-hoeing husbandry mainly depends.

“FARMING AND GARDENING MADE EASY.”

MR. EDITOR:—The above is the title of a little work of forty pages, which has lately been published by Mr. Leonard G. Jones, a practical Farmer and Gardener. A certificate is prefixed to the work from several persons in or near Dundas, testifying to the success of Mr. Jones' methods of cultivation, and to the excellence of his plan for destroying thistles.

Any addition to the literature of farming and horticulture, by one thoroughly acquainted with the peculiarities of our country and climate, must

always be received with congratulation, as we may naturally expect from a practical man various valuable hints, which we might not find in those works more particularly adapted to the peculiarities of Europe or the varying climates of the States.

We were the more induced to believe that the work before us must contain some valuable information—which might, perhaps, more profitably, be made the subject of a patent—from the fact of the book being sold at the enormous price of one dollar. On a careful perusal, however, we find ourselves lamentably disappointed, and feel tempted to apply to the present production the old adage, “That the good in it is not new, and the new is not good.”

Among the novelties may be mentioned the author's method of proving the vitality of seeds, viz.: “By boiling them in water for twenty minutes, when it is stated that if sound some will sprout from one-sixteenth to one-eighth of an inch, while others will only swell and sprout a little.” That seeds thus treated will swell is perfectly well known, but that they should sprout is something quite incomprehensible, when we consider that one minute's boiling is sufficient to destroy vitality entirely. The old, and the only reliable plan, is to sow a certain number of seeds and notice what per centage comes up.

In the next chapter our author states that, “Seeds imported from foreign countries should be put into tin or air-tight boxes, and hermetically sealed”; a process which has long since been proved, and is well known to be the very worst that can possibly be adopted, the great portion of the seeds rotting and losing their vitality. It is a fact well known to our large seed-men, that seeds packed in loose bags and then in common casks, arrive in this country perfectly sound.

The author's plan for raising onions is perfection, viz.: “By covering the ground with boards and sowing the seeds in furrows between them,” is certainly novel and ingenious; there can be no doubt that the ground would thus be kept moist and free from weeds, but we very much doubt whether any market-gardener would be inclined to adopt a process requiring for half an acre of onions, eighteen thousand feet of lumber.

We have usually been in the habit of employing such simple and economical substances as soot and ashes, in order to prevent the ravages of the turnip-fly, but our author proposes to attain this desirable object by the cheap addition of an “equal weight of ground black pepper,” or by “soaking the seeds in oil of amber,” or by “late sowing”; of which processes the latter can surely not be considered as anything new. Furthermore, he recommends sowing with cabbage or turnip seed some lettuce, because he has never seen the fly attack lettuce; we confess ourselves at a loss to understand the philosophy of this proposition; we certainly have heard of growing radishes with the cabbage in order to let these pestilent insects eat the former, but if they decline to eat lettuce, we scarcely see what object there can be in sowing it, unless to cause the entire destruction of the cabbage crop.

Our author's plan for preventing the shanking of cabbage, and for causing good heads upon those plants which seem inclined to grow to stalk, is equally faulty both in theory and practice. He recommends making a slit in the stalk and inserting a piece of wool, when, as he states, good sound heads will be produced. It is perfectly well known that this condition of the plant arises from an imperfection in the seed, the parent plant having become impregnated with some other than the true cabbage, such for instance as rape, and the best culture in the world will not raise good cabbages from bastard seed.

The plan proposed by Mr. Jones for raising new varieties of potatoes is one which we should not have expected at the present day, when the true methods are so well understood among our practical horticulturists. He recommends fastening together the half tubes of two different kinds of potatoes, and prognosticates a different variety from such process. It is scarcely necessary to observe that the whole proposition is an utter absurdity; our author must entertain but a poor idea of the knowledge and understanding of Canadian Gardeners, if he thinks they will give any credit to such arrant nonsense.

It is scarcely necessary to dwell any longer on the purely horticultural discourses of our author, further than to remark that he recommends planting cuttings of gooseberries in August, and prunes his trees every second year, but we will now proceed to discuss some of his Horticultural experiences which certainly seem to be of a very extraordinary kind. We are exceedingly anxious to know in what favored portion of Canada dahlias can be safely planted out by the middle of April; we have generally found the middle of May quite early enough to be secure against frosts. If planted at the time he recommends, in nine cases out of ten they will be utterly destroyed.

In the chapter on planting flowers, he recommends the use of a quarter of a pound of guano, or half a pound of plaster to each gallon of water employed in watering; these quantities would be more than sufficient for a barrel. Furthermore, he informs us that stable and cow-house manure may not be used for flowers, as they will generate large worms, which if the manure be well rotted, we certainly consider as a curious fact (?) in natural history.

But the grand discovery of Mr. Jones, which more particularly evinces his profound knowledge of practical and theoretical horticulture, is the plan for producing colors in tulips and other bulbous roots, as well as in dahlias. We certainly have long been acquainted with this valuable method as handed down from our Great-Great-Grand-Mother, but that such an absurdity should be put into print at the present day, does not argue very favorably for Mr. Jones' idea of the intellectual development of Canada.

The plan is to run a piece of silk of any color through the bulb, and to plant it in this condition, when he assures us the flower will have the color of the silk. If this plan succeeds with bulbs, it surely ought to do so with seeds, and we wonder that our author has not made his fortune by pro-

ducing blue moss roses or scarlet pansies, or red snowballs, problems which have as yet baffled our best gardeners.

The Dublin Horticultural Society long since offered a prize for a blue dahlia, and a bright blue or a jet black tulip would certainly be an acquisition. We hope to see some wonderful productions of that nature at our Horticultural Exhibitions this year.

The process for destroying thistles, upon which Mr. Jones seems rather to pride himself, is certainly one of the very strangest portions of the whole work. He proposes to cover the thistle bed to the depth of half an inch with a mixture of saltpetre, brimstone and salt, and more particularly to kill any stray plants by dropping into the top of each *one drop of spirits of turpentine*. This process strongly reminds us of the plan which was recommended to *Granny* for killing fleas—by means of a peculiar powder—catch the flea and holding it in the left hand, with the forefinger and thumb of the right apply a pinch of the mixture to his nose, when after a few struggles the animal will die! *Blas-me*, says *Granny*, would it not be easier to crack him between your nails?

If Canada thistles be hoed down twice or thrice during the season, cutting well under the surface, they will be as thoroughly eradicated as can be desired, and with considerable less trouble and expense than by Mr. Jones' plan.

There are several other points in this most extraordinary work to which we might allude, but we think sufficient has already been said to prove that Mr. Leonard G. Jones can lay but little claim to his title of Practical Farmer and Gardener, and that "*Farming and Gardening made easy*," is by no means a valuable addition to the literature of the present day, the peculiar drift of which seems to be the communication to the million of *correct information*.

ANTI-HUMBUG.

LIQUID MANURE.

What are we to do with our liquid manure? is a question we have already discussed in a variety of forms, but all tending to show that, except in cases where *irrigation was practicable*, it was not wise nor economical to apply it in the shape of liquid. We well remember the rage there was for tanks and tank-making, some twenty years ago—the birth-time of agricultural improvements in this country—and yet we hardly see one of them in proper use at this moment. They are nearly all diverted from their proper purpose; and so unsettled does the question remain, that, after a multitude of essays and papers of great value, the Highland and Agricultural Society of Scotland still presents the same form of heading for a premium on the subject.

We have demonstrated over and over again that the conveyance of water by the liquid manure cart will not repay the cost. The raising and discharge by hose or tubes are processes by far too complicated and expensive for farm purposes, while distribution by steam-power seems still more questionable.

The best remedy seems to be pouring the liquid upon compost heaps, and so, by repeated saturation of the soils of which they are composed, keep up the full supply of manurial matter till the whole of the parts valuable for plants is absorbed and detained by the soil and the decayed matter of which heaps are composed. But even this involves trouble. Besides, the inevitable carting of the waste material, the scraping up, the mixing, the pouring out of the liquid, the watching of the tank, are all operations likely, in a season of active farming life, to be more or less neglected. While, in a wet season, the compost matter will be so liable to be overcharged with wet of one kind or another, that it may not be a willing absorbent at all, and the liquid will run off in all directions.

Now we must first consider a little, what we have to do. We have the most valuable parts of the manure—the soluble—washed out from the rest, but in proportions so small, to the water which conveys them, that the liquid as such, is hardly worth the cost of carting, or of removal of any kind.

We have matters, too, both in suspension and solution—some which the water carries mechanically, and some chemically away—and yet there are those who have so often seen applications of the liquid residuum of the farmyard do so little good that they express doubts if it is really valuable.

The researches of Professor Johnston on this head are very instructive. As chemist to the Highland Society, he gave the following as the result of his investigations "On the Composition of Liquid Manure:—

"The liquid manure of our farmyards is now attracting more general attention than at any former period, and tanks for collecting it are in course of erection in various parts of the country. Both theory and experiment show this liquid to be very valuable as a manure, and it has been long known to contain substances fitted in a marked degree to promote the growth of plants. Still, no analyses, so far as I am aware, have hitherto been made of the liquid in the state in which it actually exists in our farmyards, in too many cases running to waste.

"It was with much satisfaction, therefore, that I received a few months ago, two bottles of liquid manure for analysis, from Mr. Houldsworth, of Coltness, near Hamilton, a member of our association. This gentleman had drawn up, for distribution among his tenantry, a very satisfactory and useful statement in regard to the value of this liquid, and the gain which would accrue from saving it. But before circulating this paper, he was desirous of having the actual liquor of which he spoke carefully analyzed, and he therefore forwarded it to the laboratory of the association. The examination has led to some interesting results, which I think deserving of general publication.

"1st. The liquid contained in the first bottle consisted of the drainings from heaps of cow-dung exposed to rain. It was dark coloured, and of course, contained only what rain-water is

capable of washing out of such dung-heaps. It was neutral, but ammonia was given off when it was boiled, or when quicklime was added.

"An imperial gallon of these drainings, when evaporated to dryness, left about 480 grains, or an ounce weight of dry solid matter.

This solid matter consisted of—

| | Grains. |
|--------------------------------|---------|
| Ammonia - - - - | 9.6 |
| Organic matter - - - - | 200.8 |
| Inorganic matter (ash) - - - - | 268.8 |
| | <hr/> |
| | 479.2 |

The inorganic portion consisted of—

| | Grains. |
|---|---------|
| Alkaline salts - - - - | 207.8 |
| Phosphate of lime and magnesia, with a little phosphate of iron | 25.1 |
| Carbonate of lime - - - - | 18.2 |
| Carbonate of magnesia and loss | 4.3 |
| Silica, and a little alumina - - - - | 13.4 |
| | <hr/> |
| | 268.8 |

"From this analysis, it appears that the rain is capable of washing out much valuable matter from common cow-dung. The ammonia is not so large in quantity as in many other forms of liquid manure, because most of those substances voided by the cow which are capable of producing ammonia pass off in its urine. But, on the other hand, the urine of the cow contains no phosphates, while these washings contain a considerable proportion. It thus appears that the washings of the dungheaps contain other valuable substances besides those which are present in the urine.

"Those therefore, who, besides allowing the urine from the byres to run to waste, permit the rain to wash their dung heaps, suffer a double loss; they lose the ammonia-producing substances and much alkaline matter in the urine, and the phosphates with a large additional portion of alkaline matter in the washings.

"2nd. The second liquid consisted of the drainings of farmyard dung when watered with cows' urine. It was also neutral, but gave off ammonia copiously when boiled, or when mixed with quick lime.

"An imperial gallon, when evaporated, left 617½ grains of dry matter, considerably more than the former liquid, and this matter consisted of—

| | Grains. |
|----------------------------------|---------|
| Ammonia - - - - | 21.5 |
| Organic matter - - - - | 77.6 |
| Inorganic matter, or ash - - - - | 515.4 |
| | <hr/> |
| | 617.5 |

"We see here that the relative proportions of organic matter in the two liquids were very different. From ordinary farmyard manure there is as we should expect, less of the finely dissolved by water than from the finely masticated and digested excretions of the cow.

The inorganic matter contained in this liquid consisted of—

| | |
|---------------------------------|---------|
| | Grains. |
| Alkaline salts - - - | 420.4 |
| Phosphates of lime and magnesia | 44.5 |
| Carbonate of lime - - - | 31.1 |
| Carbonate of magnesia and loss | 3.4 |
| Silica, and a little alumina - | 19.0 |

518.4

“In this liquid, therefore, as in the other, there was a considerable proportion of phosphates, as well as a large amount of alkaline salts. There are no phosphates in the urine; but the fermentation of the dung-heap, caused partly by the watering with the urine, decomposes the straw, and other substances which form the dung-heap, brings a portion of the phosphates they contain into a soluble state, and thus enables them to be washed out by any watery liquid that comes in contact with them.

“The urine of the cow, therefore, which has been thrown upon the dung-heap, will pass off, if it is allowed to escape, richer than it was at first. It may not contain so much ammonia, or of those substances which produce ammonia; but it will carry away more of those inorganic substances which enter into the composition of our crops, and which are no less necessary to their growth.”

The above evidence gives, beyond all doubt, the real character of the liquid drainings of the farmyards, and we now come to the possibility of detaining the valuable parts of this manure without the cost of so much carting and attention.

The question, however, is one much broader, and more extensive than as applied to mere fold-yard drainage. It applies to the sewerage of the largest town as well as the smallest farmstead, and the principal is in both cases the same.

The energy and benevolence of Lady Frankland Russell, of Thirkleby, near Thirsk, has settled the question, by the adoption of a detaining apparatus at Aylesbury, which, while it deodorises the water issuing from the drain, and purifies the foul stream, so as to be made fit to drink—it is so clear and beautiful—provides for the detention of the manure without care or watching.

The drainage of a town is just an exaggeration of that of a farmstead. Two tanks are constructed having a connection at the bottom. One tank is filled with pounded clay and the other with peat charcoal. The sewerage water enters the tank filled with clay at the top, filtering through that substance by its own gravitation, and impregnating it with the denser portion of its impurities; the liquid then ascends through the charcoal tank by hydraulic pressure, where in consequence of the peculiar property of charcoal to absorb and deodorise all impurities, whether of a liquid or gaseous nature, the water finds an exit, at a lower end, of course, than its entrance, in a pure state.

The drainage is thus forced upwards through the peat charcoal by hydraulic power, and through the pounded clay by its gravitative power, and the one and the other deodorise and detain the manuring parts, and allow the water to flow out pure. There are two systems of tanks on each

side of the drain, and the stream is alternately turned into one and the other as they are emptied respectively. It will at once be seen that the force, as well as the saturation, are brought to bear on the detaining influence; and so completely successful is the plan, that we are informed the Aylesbury authorities are about to purchase the whole, put up, as we have seen, at the sole expense of Lady Frankland. Now why should not farmers have similar tanks, to render the manure potable and concentrated, instead of being dissipated through thousands of gallons of water?

It may be remembered that the detailed trials of the Yorkshire Agricultural Society with peat charcoal were not favorable. But the charcoal was not saturated. It was satisfied with liquid manure so far as wetting is concerned, but vast quantities might have been forced through it and come out pure, so that it was a very weak solution.—*Mark Lane Express.*

MISCELLANY.

VENTILATION.

The subject of ventilation has from time immemorial, occupied the serious attention of scientific men of all countries, and many are the plans which have been suggested and adopted, to effect so desirable an object for the health of the human race, but it has been left to Canada, to accomplish that which has been the study of ages, and that, too, in our opinion, most effectually. Mr. Sheriff Ruttan, the inventor and patentee of a system of ventilation, will be venerated by ages yet unborn, as the benefactor of mankind, by perfecting a system which is more conducive to the health, than all the dogmas and theories of other, or the present days; and though his views of what constitute the peculiar properties of pure and impure air, may come in contact, and be diametrically opposed to our preconceived notions and ideas, yet time will surmount them, and we hesitate not to give it as our opinion, that his system will at no distant day be properly appreciated by his fellow men. It is well known to all scientific men, that one great difficulty in introducing anything new into the world, is to break down the barrier of prejudice, that is ever erected in opposition to what may be considered an innovation of established principles, more particularly where it requires a philosophic mind to comprehend it, and where the principle sought to be introduced, is at all complicated.

These reflections were caused by a visit made by the writer, to School House No. 3, in this Town, where Mr. Ruttan's system of ventilation has been successfully introduced. The first thing that strikes the visitor upon entering this building, is the pure and bracing air which he inhales within its walls; none of that foul, oppressive heat is felt which generally prevails, upon entering all crowded assemblies, and which is so conducive to head aches, colds, &c., and which lays the foundation of future diseases, and in many cases an early death; and though he may remain for hours, the same healthy atmosphere prevails, and

instead of breathing the same air over and over and over again, fresh air is constantly supplied by this ventilating apparatus.

Mr. Ruttan's system simply consists in introducing pure air into the room, and forcing out that which has performed its functions, or rather which has been once inhaled, and this is accomplished in a way by which the room is kept constantly heated and comfortable. The cold and pure air when introduced, passes over a heated oven, and is sent into the building at a heat varying from 60 to 100 degrees, which can be regulated by the quantity of fire kept in the furnace. Now it must be evident to all that where this is accomplished, the health of the inmates must be materially benefited. Mr. Ruttan says, that by the means of one of these ventilators, no less than 500 cubic feet of air, are brought into the room per minute, and consequently as much foul air expelled. We shall not here enter into an explanation of the principles upon which Mr. Ruttan founds his theories, but we certainly believe them to be correct, and when we say this, we also feel confident that we speak the sentiments of the School Trustees, under whose supervisions the School Houses were built, and so convinced are they of its benefit, that they are determined to have all the School Houses supplied with them.

Our readers must not suppose that this system of ventilation is confined to School Houses, as it can, with equally beneficial results, be introduced into churches and private dwellings. We were shown a letter from a scientific gentleman in Toronto, who has had it introduced into his dwelling, and who speaks of the whole system in the highest commendation, both as regards health and the minor consideration of economy in fuel, as one of Mr. Ruttan's stoves will suffice to heat a large house.

As Spring will now soon be, and parties will be building, we seriously recommend them to consult Mr. Ruttan before doing so. The whole extra expense in introducing his system of ventilation will not exceed £25, and for this small sum, many of the ills to which the human system is heir, may be averted.—*Belleville Intelligencer*.

CHEMISTRY AND PERFUMERY.

Much aid has been given by chemistry to the art of perfumery. It is true that soap and perfumery are rather rivals, the increase of the former diminishing the use of the latter. Costly perfumes, formerly employed as a mask to want of cleanliness, are less required now that soap has become a type of civilization. Perfumers, if they do not occupy whole streets with their shops, as they did in ancient Capua, show more science in attaining their perfumes than those of former times.

The jury in the World's Fair, or rather two distinguished chemists of that jury, Dr. Hoffman and Mr. De la Rue, ascertained that some of the most delicate perfumes were made by chemical artifice, and not, as of old, by distilling them from flowers. The perfume of flowers often consists of oils and ethers, which the chemist can com-

pound artificially in his laboratory. Commercial enterprise has availed itself of this fact, and sent to the exhibition, in the form of essences, perfumes thus prepared. Singularly enough, they are generally derived from substances of intensely disgusting odour. A peculiarly fœtid one, termed fusel oil, is formed in making brandy and whisky. This fusel oil, distilled with sulphuric acid and acetate of potash, gives the oil of pears. The oil of apples is made from the same fusel oil, by distillation with sulphuric acid and bicromate of potash. The oil of pine-apples is obtained from the product of the action of putrid cheese on sugar, or by making a soap with butter, and distilling it with alcohol and sulphuric acid, and is now largely employed in England, in the preparation of pine-apple ale.

Oil of grapes and oil of cognac, used to impart the flavor of French cognac to British brandy, are little else than fusel oil. The artificial oil of bitter almonds, now so largely employed in perfuming soaps and for flavouring confectionery, is prepared by the action of nitric acid on the fœtid piles of gas tar.

Many a fair forehead is damped with *eau de millefiers*, without knowing that its essential ingredient is derived from the drainage of cow-houses. The wintergreen oil imported from New Jersey, as being produced from a plant indigenous there, is artificially made from willows, and a body procured by the distillation of wood. All these are direct modern appliances of science to an industrial purpose, and imply an acquaintance with the highest investigations of organic chemistry. Let us recollect that the oil of lemons, turpentine, oil of juniper, oil of roses, oil of copaiba, oil rosemary, and many other oils, are identical in composition, and it is not difficult to conceive that perfumery may derive further aid from chemistry.

THE DEPTH OF THE OCEAN.

The Royal Society met on the 27th ult., the Earl of Emmiskillen, vice-president in the chair. A very interesting communication from Capt. Denham, R. N., of her Majesty's ship *Herald* was read. Captain Denham is engaged on a scientific voyage in the above ship, and among other subjects, he was particularly enjoined to endeavor on favorable occasions to ascertain the depth of the ocean. The present communication gives an account of a deep sea sounding in 7,706 fathoms, in 36 deg, 49 min. south latitude, and 37 deg. 6 min. west longitude. The sounding was obtained on a calm day, October 30, 1852, on the passage from Rio de Janeiro to the Cape of Good Hope. The sounding line was 1-10 of an inch in diameter, laid into one length and weighing when dry, 1 lb. for every 100 fathoms. Captain Denham received from Commodore M. Keavor, of the United States navy commanding the *Congress* frigate, 15,000 fathoms of this line, 10,000 on one reel and 5,000 on another, and he considers it to have been admirably adapted for the purpose for which it was constructed, and to which it was applied. The plummet weighed 9 lbs., and was 11 inches long, and 1-7th of an inch in Diameter. When 7,706 fathoms had run

off the reel the sea bottom was reached. Captain Denham stated that Lieutenant Hutchison and himself, in separate boats, with their own hands, drew the plummet up 50 fathoms several times; and after it had renewed its descent, it stopped abruptly at the original mark to a fathom and would not take another turn of the reel. The whole time taken by the plummet in descending to this amazing depth of 7,706 fathoms or 7.7 geographical miles or 60 to a degree, was 9 hours and twenty four minutes and 45 seconds. The highest summits of the Himalaya are little more than 28,000 feet, or 47 geographical miles above the sea. The sea bottom has therefore depths greatly exceeding the elevation of the highest pinnacle above its surface. Great care was taken in the endeavor to bring the plummet again to the surface, to show the nature of the bottom, but while carefully reeling in, the line broke at 140 fathoms below the water line, carrying away a thermometer which had been attached to it at 3,000 fathoms. This sound is the deepest that has ever been made.

AN AUSTRALIAN NIGHT.—It is difficult for any writer to give a good description of the amazing beauty of an Australian sky. Its colors, various as those of the rainbow, could only be conveyed by a first-rate painter; if, indeed, it be in the power of any one to do justice to such a subject. But if the heavens are grand during the day, the night also, in its more subdued colors, and tranquil loveliness, fully equals the daylight scene; then, indeed, the expansive vault claims all our admiration, and every star shining out with wonderful distinctness, seems to court the attention of the silver moon as she majestically glides upon her allotted path. I have frequently been out on a journey on such a night, and whilst allowing the horse his own time to walk along the road, have solaced myself by reading in the still moonlight. In the bush, at a time like this, the birds having gone to the roost, save a species of owl, and one or two other night birds, all nature seems at rest, and the peace of the scene is unbroken, except by the watch-dogs at the stations challenging the lonely howl of the wild-dogs by their deep bark, which is echoed and re-echoed from hill to hill until lost in the distance.—*Wilkinson's South Australia.*

THE ALPINE HORN.—Is an instrument made of the bark of a cherry tree, and like a speaking trumpet, is used to convey sounds to a great distance. When the last rays of the sun gild the summit of the Alps, the shepherd who inhabits the highest peak of these mountains takes his horn, and cries with a loud voice, "Praised be the Lord." As soon as the neighboring shepherds hear him, they leave their huts and repeat these words. The sounds are prolonged many minutes, whilst the echoes of the mountains and grottos of the rocks repeat the name of God. Imagination cannot picture anything more solemn or sublime than this scene. During the silence that succeeds, the shepherds bend their knees and pray in the open air, and then retire to their huts to rest. The sunlight gilding the tops of those stupendous mountains, upon which the blue

vault of heaven seems to rest, the magnificent scenery around, and the voices of the shepherds sounding from rock to rock the praise of the Almighty, must fill the mind of every traveller with enthusiasm and awe.

STRAW AS A COVERING.—Clean straw is an excellent covering for many things: thousands of sea-kale in frames of under hoops have no other blanching material; and how clean they grow in it! Rhubarb, in winter forcing an early spring, grows beautifully pinky. It is well known that early in spring frosts destroy rhubarb; but if a six inch layer of straw is put on every crown, as the heads put up, they raise the straw with them, and it not only gives the stalks a better color, and makes them less "stringy," but it keeps the leaves from growing too large. No wind will blow it off, nor will the most intense frosts injure the plants. Straw should not be looked upon as a mere litter; it is as good as a frame on a large scale. What sort of eatable strawberries would we have without straw? In summer, every crop, such as gooseberries, currants, and many other things, should have the protection of straw which keeps the sun from drying up the surface, and the surface roots, damp and cool, while all the weeds are kept down. Market gardeners use it for their frames; it matter not whether for cucumbers, melons or potatoes, straw is their covering, and their crops are more secure than when protected by a thin mat. But some may object to the use of straw, on account of the litter it makes in a garden; but if any of those who object to its use for this reason will just take a peep into Convent Garden market at any season, they cannot fail to be struck with the quality of the produce, in the rising of which straw plays an important part. Straw is also the best of all manure for a strong retentive soil, when it is dug in fresh, as it decays and leaves innumerable worm-like holes, which act as drains for the roots.—*Gardener's Chronicle.*

POLITENESS BETWEEN BROTHERS AND SISTERS.—By endeavouring to acquire a habit of politeness, it will soon become familiar, and sit on you with ease, if not with elegance. Let it never be forgotten that genuine politeness is a great fosterer of family love; it allays accidental irritation, by preventing harsh retorts and rude contradictions; it softens the boisterous, stimulates the indolent, suppresses selfishness, and by forming a habit of consideration for others, harmonizes the whole. Politeness begets politeness, and brothers may easily be won by it to leave off the rude ways they bring home from school or college. Sisters ought never to receive any little attention without thanking them for it, never to ask a favor of them but in courteous terms, never to reply to their questions in monosyllables, and they will soon be ashamed to do such things themselves. Both precept and example ought to be laid under contribution, to convince them that no one can have really good manners abroad who is not habitually polite at home.

If there be anything that can be called *genius*, it consists chiefly in ability to give that attention to a subject which keeps it steadily in the mind, till we have surveyed it accurately on all sides.

Poetry.

HONOUR TO THE PLOUGH.

'Though clouds o'ercrest our native sky,
And seem to dim our sun,
We will not down in languor lie,
Or deem the day as done.
The rural arts we loved before,
No less we'll cherish now;
And crown the banquet as of yore,
With Honour to the Plough.

In these fair fields where peaceful spoil
To faith and hope are given,
We'll seek the prize with honest toil,
And leave the rest to Heaven.
We'll gird us to the work like men
Who own a holy vow,
And if in joy we meet again,
Give Honour to the Plough.

Let Art, arrayed in magic power,
With labour, hand in hand,
Go forth; and now, in peril's hour,
Sustain a sinking land.
Let never sloth unweave the arm,
Or fear the spirit cow;
'These words alone should work a charm—
All Honour to the Plough.

The heath redress, the meadow drain,
'The latest swamp explore,
And o'er the long expecting plain
Diffuse the quickening store!
Then fearless urge the furrow deep,
Up to the mountain's brow,
And when the rich results you reap,
Give Honour to the Plough.

So still shall health by pastures green
And nodding harvest roan,
And still behind her rustic screen
Shall virtue find a home,
And while their bowers the Muses build
Beneath the neighbouring bough,
Shall many a grateful voice be filled,
With Honour to the Plough.

—Blackwood's Magazine.

Prosperity makes friends; adversity tries them.
Prosperity best discovers vice; adversity, virtue.
Moral rectitude is the accomplishment for heaven.

Good intentions will not justify evil actions.

No monuments of art compare with virtuous actions.

He who swells in prosperity, will shrink in adversity.

Accurate knowledge is the basis of correct opinions.

He who turns his back to the sun must see shadows.

A good way to thrive is to prune off needless wants.

Those who will excel in art must excel in industry.

The farmers are the founders of civilization.—*Daniel Webster.*

Virtue to become vigorous or useful, must be habitually active.

If we have a free press, there should be no anonymous writers.

All physical evils are so many beacon lights to warn us from vice.

The sympathy of friends in affliction charms away half the woe.

Knowledge may give weight, but accomplishments only give lustre.

Let reason go before every enterprise, and counsel before action.

The more honestly a man has the less he affects the air of a saint.

Write down the advice of him who loves you, though you dislike it at present.

Noble actions are the substance of life; good sayings its ornament and guide.

Application to useful study is a powerful guard, and a crown of glory to youth.

Attention, steady, and continuous, is the corner stone of the intellectual temple.

We ought to submit to the greatest inconvenience rather than commit the least sin.

The gem cannot be polished without friction, nor man perfected without adversity.

One of the expenses of longevity is the loss of those who have been dear to us in our pilgrimage.

Ambition sacrifices the present to the future, but pleasure sacrifices the future to the present.

Affectation lights a candle to our defects, and though it may gratify ourselves, it disgusts all others.

Our passions are like convulsion fits, which make us stronger for the time, but leave us weaker forever after.

Grandiloquence results not so much from the knowledge of other languages, as from ignorance of our own.

Men make themselves ridiculous, not so much by the qualities they have, as by the affectation of those they have not.

They who mistake the excitement of a reform, for the source of danger, must, we should think, have overlooked all history.

While the faults of others do not touch us, we mildly view them in the abstract; but when they come in contact with our personal feelings and interests, they appear to become so large as to demand our strongest condemnation.

A blacksmith, having been asked why he did not sue his grievous calumniator for damages, pertinently replied, "I can hammer out a better character than the lawyers would give me."

Kiss the hand of him who can renounce what he has publicly taught, when convicted of his error; and who, with heartfelt joy embraces the truth, though in the sacrifice of favorable opinions.—*Lavater.*

The great comprehensive truths, written in every page of our history, are these: Human happiness has no perfect security but freedom; freedom, none but virtue; virtue none but knowledge; and neither freedom nor virtue has any vigour or immortal hope, except in the principles of the Christian faith, and in the sanctions of the Christian religion.—*Quincy.*

It seems necessary, in order that the Universe be comprehensible, that we recognize Deity not merely as the Creator, but as the ever-present preserver, sustainer, and efficient cause of all phenomena. In the rain and sunshine, in the soft zephyr, in the cloud, the torrent, and the thunder, in the bursting blossoms and the fading branch, in the revolving season and the falling star, there is the Infinite Essence and the mystic development of His Will.—*Prof. Nichol.*

The will of man, active and spontaneous, and fluctuating as it appears to be, is an instrument in the hand of God,—he turns it at his pleasure—he brings other instruments to act upon it—he plies it with all its excitements—he measures the force and proportion of each one of them—and every step of every individual receives as determinate a character from the hand of God, as every mile of a planet's orbit, or every gust of wind, or every wave of the sea, or every particle of flying dust.—*Chalmers.*

THE WORLD.

(After Sir Walter Raleigh.)

BY EDWIN WAUGH.

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|---|--|
| <p>This foolish world doth wink Its emanant hid; And when it thinks, it thinks Its pleasures are hid.</p> <p>Its pity 's a screen While vice doth hide; Its purity 's in clean— Its meekness, pride.</p> <p>Its charity 's a bait To catch a name; Its kindness covers hate; Its praise is blame.</p> <p>Its learning 's empty talk; Its heart is cold; Its church is an exchange; Its god is gold.</p> | <p>Its pleasures all are blind. And lead to pain; Its treasures are a kind Of losing gain.</p> <p>Least moves it more than love. Fear more than shame; Its best ambitions have A gowdling aim.</p> <p>Oh! cure our moral madness, Our soul's disease, Show us that vice brings sad- And virtue, ease. <small>[ness.]</small></p> <p>And teach us in the hour Of sin's dismay, That Truth 's the only flower Without decay.</p> |
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MARKETS, &c.

Toronto, March 31st.

Our markets must now be considered in a stationary condition. The latest accounts from the United Kingdom are more favourable as respects the weather and condition of the land for spring crops. Importations had been very heavy, and prices have had in consequence a somewhat downward tendency. But as a very large breadth of land prepared for fall wheat had not been sown in consequence of almost unprecedented wet weather, and spring wheat being but an indifferent substitute, we are much inclined to think that the present scale of prices will be maintained.

Winter has now left us, and spring is fast approaching, bringing with it its usual load of care and labour to the husbandman, but not divested, however, of its peculiar hopes and pleasures. The frost in many situations is quite out, and the snow gone; so that agricultural and horticultural operations are about commencing in right earnest. Winter wheat is said to be generally looking well, and with a favourable spring we may reasonably anticipate a productive autumn.

FLOUR.—The continued depression and decline in prices at the seaboard and in England, has had the effect of checking speculation at this port. 3000 bbls covers the week's transactions at the quotations. The orders, which have been principally on Montreal account during winter, are withdrawn for the present, waiting a reaction, which from the review of the foreign corn trade, in the *Mark Lane Express*, per last Steamer, is likely to take place on first appearance of wet weather in England, as the English farmers are depending upon dry weather to sow what seed they were obliged to leave out last fall, owing to the continued wet weather during seed time.

WHEAT.—The breaking up of winter roads, prevents Wheat coming forward, and the absence of orders makes business dull in wheat. It is a singular feature in the Wheat and Flour trade of Western Canada, that few orders have been filled on American account the past winter. The wheat bought (apart from what Millers hold,) has been principally on English account.

PORK.—The pork market at the sea board remains dull, and prices continue to decline. Packers here require a great portion of their stocks for home consumption. The weight of Pork is held on Montreal

and Qu-bec accounts, and a large proportion required for the lower ports and the lumber trade.

BUTTER.—This article has declined; and taking prices at the seaboard as a guide, will reduce the value here to 6d per pound for good keg butter.

PEAS.—There has been quite a demand during the week for field and marrowfat peas for the American market, the latter at 1 25 per bushel, and 60c. for common field peas, f. o. b.

In other articles but little doing. Prices nominal.

This port is becoming the principle one for early spring operations in the products of the country, owing partly to its being the only Port on Lake Ontario accessible during the winter and spring months where any quantity of our staples accumulates. This together with the Railroads building, and the rapidly increasing wholesale importing houses, will make Toronto the Liverpool of Canada West.

FREIGHTS.—The spring business may now be said to have commenced. Propellers are coming in from Oswego, freighted with English goods via Boston, and loading with flour for New York via Oswego. The first shipment of flour has been taken at 48 cents through to New York, from Toronto, including all charges at Oswego. The propeller St. Lawrence will commence loading next week for the same port. If the Oswego forwarders can guarantee to the Canadian shippers dispatch, and put on first class steamers to Oswego, they would secure all the New York passenger and freight trade of Canada West, as that port is accessible at all seasons and the nearest route to the seaboard. The Montreal forwarders must lower their views or lose the trade.

EDITOR'S NOTICES.

RECEIVED.—J. D. Mariposa.

Mr. Edward Jones, Stamford, will accept our thanks for two back Numbers.

In consequence of the piston of the Steam Press being deranged, and having to undergo some repairs, the publication of this No. of the *Agriculturist*, has been unavoidably delayed.

NOTICE TO TREASURERS OF AGRICULTURAL SOCIETIES.

The Statute requires that the Subscriptions of Members of all Agricultural Societies (whether of Counties or Townships) should be paid into the hands of the Treasurer of the County Society on or before the 1st day of May next. After which the Treasurers of County Societies are required to make an affidavit of the sums paid into their hands, in the form of the Schedule attached to the Act; the affidavit to be afterwards transmitted to the Board of Agriculture in Toronto.

TORONTO CORN EXCHANGE.

The merchants, millers, and traders of this city and neighbourhood have formed, we understand, a Corn Exchange; holding a meeting daily, in one of the rooms of the St. Lawrence Hall, from twelve to one o'clock. Such an organisation has long been wanting in this rising city, whose commerce is daily spreading, and we shall give more particulars respecting it hereafter.

PURE-BRED CATTLE AND SHEEP.

We have much pleasure in calling the attention of our readers to the advertisement of L. G. Morris, Esq., in the present number. Mr. Morris, by his public spirit, sound judgment, and honorable dealing, has already done much as an importer and breeder, to improve the live stock of this continent. Those who desire really superior animals would do well to pay this gentleman a visit.

AGRICULTURE IN MICHIGAN.

The Legislature of this State has appropriated ten thousand dollars for the establishment of a Model Farm at Lansing.

GREENHOUSES IN WINTER.

The Horticulturist recommends the sponging of the leaves of such plants as are large enough to admit of the practice, with clean water, slightly warm. This practice, frequently repeated, tends to preserve the health and improve the appearance of plants during winter, when so many are apt to become sickly and die.

HEDGES IN AUSTRALIA

It is stated in recent English papers that in the neighbourhood of Wisbach, in Lincolnshire, a brisk trade was going on in collecting the "haws," or seeds of the white thorn, for exportation to Australia, for raising quickset hedges in those extensive and flourishing colonies.

Advertisements.

FRESH GARDEN, FIELD AND FLOWER SEEDS.

THE Subscriber begs to inform his Friends and the Public, that his Stock of Fresh Seeds for Spring sowing is now complete.

The Stock of Agricultural seeds is well selected, comprising a fine Lot of Imported

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|-----------------------------------|--|
| Purple Top Swede Turnip | Yellow Globe Mangel Wurtzel. |
| Yellow Aberdeen do. | Long Red do. do. |
| White Globe, and other varieties. | Spring Tares, or Vetches. |
| White Belgian Carrot. | Red and White Clover. |
| Long Orange Altringham, &c., &c. | Timothy, and other Grasses. |
| Field Parsnips. | 100 Bus. Good Seed Barley, (weighs 52 lbs. to the bushel.) |
| Spring Rape & Cow Grass | 600 Bus. common Oats. |
| White Marrow-fat Peas. | 100 " Early Ash Top Potatoes. |
| Blue Imperial | 200 " Early June, (a fine sort.) |
| Early and Late Field do. | |
| Scotch Oats, (imported.) | |
| White Sugar Beet. | |

Price of Potatoes—\$1 per Bushel.

The subscriber has also a full and general assortment of all kinds of GARDEN SEEDS, suitable for the country—a catalogue of which, with directions for sowing seeds, can be had GRATIS on application.

Twenty Packets of choice Flower Seeds will be sent free by Post to any part of the Province, to the address of any party remitting \$1 free of postage.

JAMES FLEMING,
Seedsmen to the Agricultural Association
of Upper Canada.

Toronto, 24th March, 1853.

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PURE BRED MALE STOCK,

AT

PRIVATE SALE AT MOUNT FORDHAM,

Eleven Miles from the City Hall, New York.

I WILL Sell and Let from 10 to 12 Short Horned Bull Calves; 4 Devon Bulls and Bull Calves, and from 12 to 15 South Down Rams. The Annual Sale by Auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm, to enable me to increase my Breeding Establishment. My Hog Stock, including all the Spring Litters, are engaged. Catalogues with full description and pedigrees of the above Bulls and South Down Rams, with the prices attached can be obtained by the 15th of April next, from the Subscriber, or at any of the principal Agricultural Stores, or from the editors of the principal Agricultural Journals.

L. G. MORRIS.

March 23rd, 1853.

3m.

WANTED,

100 JUNE and DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

Important to Stock Breeders!

FOR SALE,

A VERY superior Four-Year Old BULL, bred from a thorough-bred Durham Bull, and thoroughly imported Hereford Cow.

For further particulars, apply, if by letter (post paid) to the subscriber,

JOHN IRELAND.

Grosby Corners, P. O.,
Markham, Canada West,
December 23rd, 1852.

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TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—Half a Dollar each Copy.

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.