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THE

# Canadian Agriculturist,

OR

JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE  
OF UPPER CANADA.

VOL. XIV.

TORONTO, FEBRUARY 1, 1862.

No. 3.

## The Early History of Agricultural Societies in Canada.

EDITORS OF THE AGRICULTURIST.—GENTLEMEN.—For many years I have wished to gather information respecting the early history of Agricultural Societies in this Province, from the gentlemen who first established them, with the view of preparing a little history hereafter from some day at my leisure.

The first parliamentary law passed for the organization of Agricultural Societies was in the year 1830, and, immediately afterwards these valuable societies began to spring up and flourish in many of the older districts of the province. Before the passage of the law for their establishment some districts were partially organized, the Home District being among the number, and, if I mistake not, there was also a Society at Kingston, and another at Cobourg, started previous to the Agricultural Bill. Of these, we have no report as far as I can learn, and never shall have, unless provided for us by the early promoters of them, and these, I fear, are not very numerous at the present day. I can, however, name a few gentlemen whose connection with these societies, and doubtless the proposers of them, are still living, and could furnish valuable information. I refer to Colonel E. W. Tomison and W. B. Jarvis, Esq., of the old Home District; Col. J. B. Marks, of Frontenac; Lennox and Addington, and the Hon. George Ruttan, of Northumberland, Durham, &c. If these gentlemen would take the trouble to try back in their storehouses of papers, and furnish such a history as they can furnish of the societies named above, and any others, giving the objects for which they established them, and some of the names

of their colleagues, and earliest importers of stock, &c., with any documents they may have, such as By-laws, Show Bills, or Prize lists, they would confer a favour. Of course all the societies organized under the Statute can be traced by the reports they furnished to Parliament, in accordance with the law.

With this little history, brought up to the year 1847, when the law was passed to incorporate the Agricultural Association, which was commenced the year previous, we should have all that may ever be expected, and who knows how much it may be prized by our descendants, and especially those descended from the fathers of Agricultural Societies in Upper Canada.

Yours, &c.,

RICHARD L. DENISON.

Dover Court, Feb., 1862.

## Elodea Canadensis.

TO THE EDITOR OF THE CANADIAN AGRICULTURIST.—SIR—I am not prepared to answer the question you proposed (page 534), "Is the *Elodea Canadensis* known in Canada?" But if it is not, *unde derivatum?* whence its name? Gray mentions but two varieties, *Virginica* and *petiolata*—the latter from New Jersey, southward and westward. He describes, however, a member of another family, the *frog's bit*, (the *Elodea*, he says, is a *St. John's wort*) the *Angcharis water weed*, which may perhaps be the plant in question. At all events the name is more suitable to so mischievous a weed as the one described in the article that has elicited these remarks, a weed altogether destitute of charms. It would seem that neither of these plants is intended to flourish in rivers possessing a rapid current. They are *marsh* or *pond* plants, and rejoice in such waters as are slug-

gish, if not stagnant, and unobstructed by boats, or drift-wood, or other extraneous matters calculated to injure their very fragile stalks.

Paxon gives us only two species of *Elodea*, which, by-the-bye, he terms "interesting aquatic," *Guianensis*, from Guiana, and *pulchella*, from the East Indies. He makes no allusion to a Canadian species. He assigns the *Elodea* to the *Frog's-bit* family.

Gray and Paxton are both recognized authorities; so after all I fear I have made "confusion worse confounded."

I am, Sir, your obedient Servant,

V. C.

Peterboro', C.W.. Nov. 21. 1861.

[The above communication should have appeared several weeks ago, but got accidentally mislaid, and was not discovered again till a few days back.—Ed.]

### International Exhibition, 1862.

The subjoined official notice has been issued by the commissioners:—Her Majesty's Commissioners have adapted the following regulations with respect to the admission of visitors to the exhibition:

1. The exhibition will open, as previously announced, on Thursday, the 1st of May, and will be open daily (Sundays excepted) during such hours as the commissioners shall, from time to time, appoint.

2. The Royal Horticultural Society having arranged a new entrance to their gardens from Kensington-road, the commissioners have agreed with the council of the Society to establish an entrance to the Exhibition from the Gardens, and to issue a joint ticket giving the owner the privilege of admission both to the gardens and to the Exhibition on all occasions when they are open to visitors, including the flower shows and *fetes* held in the Gardens, up to the 18th of October, 1862.

3. There will, therefore, be four principal entrances for visitors:—(1.) From the Horticultural Gardens for the owners of the joint tickets, fellows of the society, and other visitors to the garden. (2.) In Cromwell-road. (3.) In Prince Albert's-road. (4.) In Exhibition-road.

4. The regulations necessary for preventing obstructions and danger at the several entrances will be issued prior to the opening.

5. Admittance to the Exhibition will be given only to the owners of season tickets, and to visitors paying at the doors.

6. There will be two classes of season tickets; the 1st, price £3 3s, will entitle the owner to admission to the opening and all other ceremonials, as well as at all times when the building is open to the public; the 2nd, price £5 5s,

will confer the same privileges of admission to the exhibition, and will further entitle the owner to admission to the Gardens of the Royal Horticultural Society at South Kensington and Chiswick (including the flower show and *fetes* at these gardens) during the continuance of the Exhibition.

7. On the 1st of May, on the occasion of the opening ceremonial, the admissions will be restricted to owners of season tickets.

8. On the 2nd and 3rd of May the price of admission will be £1 for each person; and the commissioners reserve to themselves the power of appointing three other days, when the same charge will be made.

9. From the 5th to the 17th of May, 5s.

10. From the 19th to the 31st of May, 2s 6d, except on one day in each week, when the charge will be 5s.

11. After the 31st of May the price of admission on four days each week will be 1s.

12. Season tickets are now for sale, between the hours of 10 and 5 daily, at the offices of her Majesty's Commissioners, No. 454 West Strand, London, W. C.

13. Application through the post (stating Christian name and surname) must be addressed to the secretary, and must be accompanied by Post-office orders, payable to J. J. Mayo, Esq., at the Post-office, Charing-cross.

14. No cheques or country notes will be received.

15. Cases for preserving the season tickets may be obtained at the office for 1s each.

### On Feeding Stock.

*Continued from Page 44.)*

It is difficult, among these conflicting statements, to decide as to what is to be considered the real effect of salt. But, fortunately, we possess a very remarkable series of experiments by Voit, whose object was to elucidate the general question of the influence of salt in the nutrition of animals, on which they throw a good deal of light. His experiments were made on the dog, which, from its small size and docility, is well fitted for the purpose. The dog used, for the experiments required, 1,500 grammes of flesh to maintain its weight. As soon as it was supplied with salt, it began to drink a larger quantity of water, and to secrete more urine, and the proportion was:—

No salt, .....	935 grammes.
5 Grammes daily .....	948 "
10 " .....	1042 "
20 " .....	1284 "

It may be supposed that this increase is due to the larger quantity of water drunk; but this is not the case, for when the animal was not allowed to drink, it was nevertheless found to

the urine increased in just the same proportion, the quantities being:—

No salt, .....	828	gramms.
5 Grammes daily.....	898	"
10 " .....	987	"
20 " .....	1124	"

The urine was not only increased, but it contained more of the peculiar principle of the urine called *urea*, the numbers being, in the course of the whole experiment:—

No salt .....	107.4
5 Grammes .....	109.5
10 " .....	110.9
20 " .....	112.8

The importance of this observation will be understood when it is borne in mind that the urea affords a measure of the quantity of the tissues disintegrated and excreted, and that the presence of a larger quantity than usual in the urine is a proof that an increase of food is necessary to maintain the true weight of the animal. Such was, in fact, found to be the case, and the dog fell off in weight when it got the salt with its food. These experiments, therefore, tend to confirm those of Boussingault, and show that salt does not cause the animal to make a better use of its food; on the contrary, the effect is in the opposite direction, so that in economical feeding more salt should not be used than is just sufficient for the requirements of the animal. On the other hand, it must not fall short of this quantity; and to secure a proportion, the nature of the food should be taken into account, so that if much straw, and more especially straw grown at a distance from the sea, is used, a small addition should be made to the food, but it should always be small, and it should not be given *ad libitum*, but in the smallest quantity consistent with fulfilling its object. On exactly the same principle as the addition of salt has been recommended, it has been proposed to employ phosphate of lime. That substance, as we all know, is an indispensable constituent of the animal body, and, besides, forming the larger part of the bones, is met with in almost all the other organs. It is a substance, also, in which the food is sometimes deficient, and it has been maintained that in most cases an additional quantity should be beneficial. There is no doubt that when it and other mineral constituents of the food are in too small quantity, the health suffers, and a remarkable instance of this is found among the experiments of Messrs. Lawes and Gilbert. They fed these swine for eight weeks on maize, a substance containing a very small quantity of mineral matters, and more especially of phosphates, and they began to suffer from swelling of the glands and other bad symptoms. They were then supplied with a mixture of 5lbs. wood ashes, 1lb salt, and  $\frac{1}{2}$ lb. of superphosphate, every fourteen days, and this nauseous mixture they greedily devoured and soon regained their health, while others

which did not get it died. Several series of experiments have been made in which phosphate of lime, in the form of extremely fine powder, has been added to the food of animals, and the results, as in the case of salt, have been exceedingly conflicting. Lehmann made one series, in which he obtained a favourable result. He gave exactly the same food to three young pigs, two of which got daily half an ounce of finely ground bone earth, and these, at the end of 259 days, weighed respectively 23, and 11 lbs. more than the third, which got none. In another experiment, made in Silesia, and also on swine, no perceptible difference existed between the two lots. In a third series, made by Von Barratta on lambs, bone meal was employed to the extent of half an ounce daily, and here the results were most unfavourable, for the lambs which got it weighed, at the end of 40 days, 31 lbs. less than those which got none. In this case, however, the effect may be due to the animal matter of the bone meal, which may not be suited to the herbivorous animal. A more minute and careful series of experiments on the influence of phosphate of lime on lambs has recently been made by Von Goiren, which lead to the conclusion that it does not affect their growth in any way, the weight of those receiving 120 grains daily being sensibly the same as that of those which had none. By comparative analysis, however, of the food and excretions, he has ascertained that a portion of the phosphate of lime was actually absorbed and employed within the system. Where no phosphate of lime was used, the excretions contained 3.5 grains of phosphoric acid less than the food, so that this was the quantity daily stored up in the system. But when bone earth was added to the food, 28.10 grains were retained daily. It thus appears that the phosphate of lime, like salt, has no effect in increasing the live weight of the animals to which it is given, or in causing them to make a better use of their food; but it is quite possible that where there is a deficiency in the phosphoric acid it may exert an important influence on the health of the animal during the early period of life, when the bone is chiefly formed, and hence its use may occasionally be advantageous.

The general conclusion to be drawn from all the experiments and observations now detailed is that whatever benefits may accrue to the health of the animal by the use of condiments, of which common salt may be taken as the type they are without effect on the quantity of nutritious matters assimilated; and salt, when used in considerable quantity, actually causes the expenditure of an extra quantity of food to produce the same increase in live weight. These facts are not unimportant in relation to a class of substances now commonly called "condimental foods," which are very actively pressed upon the attention of the farmer, and are alleged to produce so great an economy of the ordinary

food as to justify the high price at which they are sold. It is worthy of notice that the grounds upon which these substances are offered have been somewhat changed. They were originally called "concentrated foods," a term clearly borrowed from that used in describing manures, and intended to lead to the belief that the nutritive elements of the plant food are found in a guano or superphosphate. This view of the matter is exceedingly specious and attractive, but a very little consideration suffices to show that it is entirely fallacious. A manure can be concentrated, because it contains many substances of little or no use to the plants. Thus it would be possible, though not practically economical, to take farm-yard manure containing about 75 per cent. of water, and by simply drying it, to concentrate four tons into one. It would be even possible to go still further, and to extract from it the ammonia, phosphoric acid, and other substances required by the plant, and so to reduce it to a still smaller bulk; but no such concentration is practicable with the food of animals. The two great kingdoms of organised beings are, no doubt, made up of exactly the same chemical elements, but the plant is able to take its food in the form of simple compounds, such as the ammonia, carbonic acid, &c., and from them to build up the most complex constituents of its frame. But animals possess no such power; their food must be supplied to them in the form of those complex and bulky compounds which the plant alone can produce, and which the animal only modifies to a slight extent in the process of assimilation. Hence it follows that it is only theoretically possible to concentrate the food of animals to a very limited extent, because the quantity of innutritious matters each of them contains is small, and it is *practically* impossible to do it at all, because there are no processes known by which the innutritious matters can be removed in such a manner as to leave the nutritive substances in a state in which they can be used as food. In the grains of the cereals the only absolutely innutritious substances are water and a small quantity of woody fibre, of which the latter cannot be extracted without entirely destroying the grain; and, though the former may be expelled by heat, it is rapidly reabsorbed from the air.

The food of an animal cannot therefore be concentrated, and the introduction of the word "condimental" instead of the "concentrated" food by the makers of some of these articles must be taken as a tacit admission that this view of the case cannot be defended. The fact is, that analysis at once shows that in these substances there has really been no concentration. A minute examination of a number of them recently made in the laboratory, which will appear in the forthcoming number of the "Transactions," has shown that there has been no attempt to concentrate in the sense in which that word is usually understood, for they all contain just as

much water and woody fibre as other vegetable substances, and are, in fact, mixtures of the most ordinary materials, consisting of Indian corn, rice, bean meal, ground carob beans, and other similar substances, along with small quantities of aromatic seeds, and in some instances a bitter substance, apparently genian. It is absurd to suppose that the contents of a small tin measure holding half a pint of these substances can be used to replace one half of the ordinary food of an ox or a horse, and their inventors, seeing that as these facts became known to the farmer their position would become untenable, have taken refuge behind the aromatics and bitters they contain, and have asserted that their effect is condimental, and that they act by promoting digestion and causing the animal to extract and assimilate a larger quantity of the nutritive matters of its ordinary food. They have obviously gone upon the commonly received opinion, which attributes to salt and similar substances this effect—a view which the facts I have already detailed by no means countenance. There is, in fact, not the slightest reason to suppose that the substances contained in these have any such effect. They consist, in addition to the grains already mentioned, chiefly of fencugree and caraway seeds, and one of those I have examined contained so large a quantity of turmeric that it might almost be described as a curry powder. Nothing definite is known regarding the action of these substances on the system, there being no experiments such as those by which the effects of salt have been determined; and there is no evidence to support the view that they are capable of producing a more complete assimilation of the food, but every reason to believe the reverse. In fact, when a dispassionate view of the matter is taken, I think that it can scarcely be doubted that, if small quantities of caraway or other aromatic seeds were given to animals, and their weights carefully determined, it would be found that they are quite without effect. It must be noticed that there have been no attempts on the part of the "discoverers" to produce such accurate experiments in support of their views, although there have been plenty of general testimonials, such as every quack medicine can produce by the score, and abundance of vague declamation regarding their wonderful effects. The plain fact is, that science does not give the slightest support to the idea that these substances have any effect whatever; and in saying so, I am only stating an opinion in which all chemists will concur, and which has, indeed, been often stated before. Its accuracy has just as often been denied by the makers of these articles, but it has never been disproved, nor will that be possible until they can produce the precise results of trustworthy experiments in support of their substances. But even admitting the accuracy of all the statements put forth by the makers of their food, there is another question which merits attention, and that is the

price at which they sold. I have already mentioned that they are composed chiefly of some of the more familiar foods mixed with a small quantity of aromatics. The exact proportion in which these latter substances exists in them cannot be accurately determined, but it is not large, and does not exceed 10 per cent. Indian corn, carob beans, &c., cost about £8 or £9 per ton, and fenugreek and caraway seeds £20 to £25. A mixture of nine touns of the former, and one of the latter, should therefore be sold at £10 or £11 per ton, in place of £20 or £30, the price actually charged; so that if these goods do produce the alleged effect, the farmer is made to pay for them three times their intrinsic value. This fact is of itself a sufficient comment on what has been already stated, and the truth is that the "discoveries" of which the makers of these foods boast are confined to the art of extracting money from the pockets of the farmer.

The general conclusions to be drawn from what has now been said may be summed up in a very few words:—1st, Common salt, the most important condiment, has no effect in promoting the assimilation of the food, and, when used in large quantity, has rather a tendency to produce a taste of nutritive matters; 2nd, Both it and phosphate of lime, and probably other mineral substances, may exercise a beneficial effect on health when the quantity existing in the food is less than the animal requires; 3rd, There is not the slightest reason to suppose that the so-called condimental foods produce any effect on an animal, as they consist only of ordinary meats mixed with small quantities of aromatic and bitter substances, which, so far as our present knowledge goes, do not in any way affect the nutrition of animals.

### Flax Culture.

As the question of Flax cultivation is now on tap, and as I am thoroughly convinced of its importance, both as regards the interests of farmers as individuals and the Province as a whole, I beg to send you the following remarks. See by the Annual Report of the Directors of the North Oxford Agricultural Society, in the *Week's Times*, that the Hon. G. Alexander Mr. Penman have very liberally offered to give ten dollars each as a prize or prizes for the best samples of flax grown in the North Riding this year. With all due deference to those gentlemen, I would beg to suggest that the offering of prizes is not alone sufficient to insure the growth of such a quantity as would pay the interest on capital expended in the erection of a spinning mill. The majority of the farmers know little or nothing about the cultivation of the flax plant, and consequently will be unwilling to invest money and labour upon its growth, unless previously well assured of its proving remunerative. The surest way, in my opinion,

would be to form a Company with such a capital as would enable them, after erecting a house with machinery, to purchase flax seed, and by advertisements inform the farmers that they could have seed for any amount of land they would guarantee to sow; the Company taking their notes for the amount, redeemable by so much flax (of course at market price) at the end of the year. Such a system would enable the farmers to try the experiment without any outlay in hard cash, and that, with not a few, is a desideratum.

And a still greater inducement would be for such a Company to start Schenk's process of preparation, viz: to steam the flax for the purpose of separating the wood fibres, instead of steeping it in water; and to purchase the flax from the farmers as soon as pulled, at so much per ton for the raw material. This would save the farmers all the extra labour that would necessarily be incurred in the steeping, spreading, turning, trying, &c., and as the flax would come in about the busiest season, and the seasons in this country being so short, I believe the extra labour likely to be incurred would be the greatest drawback to its introduction here. As far as Schenk's system is concerned, I have seen it tested, and have no hesitation in saying that it would pay as a commercial speculation. Were a Company formed in the town or country they might get up machinery for the manufacture of flax through every process, from the raw material to the finest linen; rendering us in a few years entirely independent of the cotton of the Southern States.—J. W. M.—*Woodstock Times*.

### Products of the Hemp Plant—(Cannabis Sativa.)

The hemp plant is known chiefly in this country on account of the valuable fibre it affords, which is in such constant use in the manufacture of cord, ropes, &c. Although its fibre is of the greatest value to us, still its other products are equally valuable to the natives of tropical climates. For example, in the East it is cultivated entirely on account of its narcotic resin, which is spontaneously secreted in all warm climates. In cooler temperatures it is grown exclusively for the sake of its fibre, as in Russia, Prussia, Spain, Italy, &c. It grows wild in temperate Asia and in Northern India.

Hemp appears to have been known from a very remote period, the first mention of it being made in the first book of Herodotus (C:202) where he says: "The Scythians never washed any part of their bodies excepting their heads, and accordingly purified themselves with an intoxicating kind of smoke, which seems to be somewhat analogous to the smoke of tobacco. Having first washed and thoroughly cleansed their heads, they made a tent by stretching thick

woollen cloths over three fixed sticks in the ground and inclining towards each other. They next placed a vessel full of red hot stones in the centre of the tent, and crept round it, whilst the tent covering was kept very close and almost air-tight. They then threw hemp seed on the hot stones, and a smoke and steam soon arose, which was denser than the hottest vapour bath, and the intoxicated Scythians would cry and shout at the top of their voices, from the excitement and exhilaration produced by this overpowering process." It is mentioned again in another book of the same author, where he speaks of the Scythians having "a sort of hemp very much like flax," growing "both spontaneously and from cultivation," and of garments being made from it by the Heracians "very like linen." It is also spoken of by Pliny, who says the plant was well known to the Romans. Mention is also made by the writer of some medicinal properties reputed to belong to it. Thus we see that the plant was well known to the Greeks and Romans; but the Hebrews and Egyptians seem to have been unacquainted with it. At the present time it is grown to a great extent in Russia, wholly on account of its fibre, from which country we received, in 1860, 597,610 cwt. We also find it cultivated in some parts of India, Africa, and China, and also to a small extent in the United States and Canada. It grows well in England, and is cultivated largely in some counties, as Suffolk, Yorkshire, Lincolnshire, &c. The finest kind is obtained from Italy, though in small quantities; it is known as "Italian Garden Hemp," being raised by spade culture. This is sometimes eight or nine feet long, and is used for sail-cloth as well as for the finer kinds of cordage. The mode of preparing hemp much resembles that employed in the preparation of flax. Its values and uses are so well known that it is needless to mention them here. For its narcotic and resinous properties, it is exclusively cultivated in some parts of Africa and India. The value of the fibre of hemp grown in those countries seem greatly diminished, while the resin-producing properties of the plant appear much enhanced by growth in tropical climes. This resin, called in India "Churrus," is collected in the following curious manner: Men are clad in leather dresses, and sent into the hemp field, where they brush about amongst the plants in a furious manner. The soft resin, by this means, adheres to their dresses, and is afterwards scraped off and made into balls. The leathern costume is said to be dispensed with in Nepal, and the resin collected on the bare skins of the coolies. In Persia it is collected by submitting the plants to pressure between coarse cloths, which are subsequently scraped, and the resin melted in pots with the aid of warm water. A finer kind of this resin called waxen churrus, or "momeca," is collected by hand. This fetches a high price, nearly double that of the ordinary kind, which usually

sells at from five to six rupees the seer. Churrus is of a dull greyish brown color, with little or no smell, and is usually met with in cakes from two to three inches long, somewhat in the shape of a lemon. It is used in medicine in India, and is reported to have been successfully employed in tetanus, though its application in this country, for the same purpose, has failed to give satisfactory results. Its intoxicating effects, as shown by Dr. O'Shaughnessy, are most remarkable.

Hemp enters into India commerce in other forms besides Churrus. Gunjah, or Ganjah, is found in the Calcutta bazaars, and is used chiefly for smoking. It consists of the plants themselves, with the leaves and inflorescence attached, and upon which the resin is left adhering. It is made up in bundles from three to four feet long, containing about twenty plants. These are flattened by pressure, and their colour is a greenish brown, while there is present a heavy aromatic odour. It is smoked in a similar manner to tobacco, and it is said that its continued use brings on severe asthma. In Africa it is known as "Djamba," and is found in the markets packed in slips of palm leaf or husks of maize, generally about two feet long, tied at one end and bottom, and at intervals of about an inch or inch and a half throughout the whole length of the case. When required for use, one of these divisions is cut through, which is sufficient for one pipe. The packages are sometimes smaller, and the "charge" not much larger than a marble. The "Hasheesh," or "The hashish," of the Arabs appears to differ from Gunjah in this peculiarity, that it is composed of the tops and other tender parts of the plant after the flowering period. They use it in a variety of ways other than smoking, for which purpose alone they have many modes of preparing it. They make it into an electuary, with the addition of dates, or figs and honey, sometimes cloves, cinnamon, or musk, boiled in butter, or oil and water: the filtered product used in pastry. "Bhang," "Sidhee," or "Chjee," is composed of the larger leaves and stalks with a very small quantity of resin. It like Gunjah, is sold in the Indian bazaars. Its intoxicating properties are not so great; indeed it is not applied to the same use; but being mixed with water and other additions, is found into a drink called "Subzee," which is reported to be highly conducive to health. A stimulating infusion is prepared from the plant in which is said to promote appetite, and has a great repute among the upper classes. The fruits of the hemp plant, which are well known as hemp seed, are oleaginous and abundant, but appear to be devoid of any medicinal principle. Their chief use is for feeding birds. A serviceable oil is expressed from them which is used for mixing paints, burning lamps, and also in the manufacture of soap.—*The Technologist for January.*

## Stock Feeding.

BY CUTHBERT W. JOHNSON, ESQ., F. R. S.

At a season when the feeding of stock is so generally engaging the attention of the readers of this magazine, we may usefully gather together, and carefully consider a few recent efforts to render that feeding more profitable. The health of our stock is a primary consideration. The common diseases of sheep when feeding off turnips is one very important question. The Highland Society of Scotland have lately awarded a premium to Mr. Hugh Borthwick, of Traquair-Knowes, for his essay on those too commonly fatal diseases—(*Trans. High. Society*, 1861, p. 127.) The disease of which he chiefly treats, are braxy, pluro-pneumonia, louping-ill, and sturdy. The means of prevention of these diseases, which he considers the most successful, are for braxy, (which he thinks can be almost totally prevented by good management,) putting the sheep on to the turnips gradually, 70 hours the first day, three the second, and so on for the course of a week; afterwards, if well sheltered, by closely confining them on the turnips, and supplying them with hay and straw, and in the importance of this change of food, every reader will concur. Another great object, to have the roots consumed as free from dirt as possible; to this end the sheep should always be shifted to a fresh lot before the shells are ten too bare, especially if the soil is damp. When the hoar frost is on the turnips, the flock ought not to be shifted until it is off the shaw. The surface of the frozen leaves of the turnips when then covered with so much frozen water as be injurious to the sheep. Of pluro-pneumonia, the conclusion to which Mr. Borthwick arrives is, that it is difficult to prevent this disease on sheep fed on turnips, especially in old cases brought from pastoral districts. He is of opinion, that there is in some sheep an hereditary disposition to this disease—a conclusion which he supports by several instances; he adds that when sheep are suspected of being infected with it, they should have hay and a little mixed corn along with the turnips to prevent them from scouring. He adds, "I have tried to ten sixteen sheep affected with pluro-pneumonia within the last three years, on this kind of food, thirteen of which fed well, the other seven died."

For louping-ill, or staggers, which frequently breaks out among hogs fed on turnips, the preventative Mr. Borthwick deems effectual is, keeping the turnips clean, giving the sheep a variety of food, hay if it can be had, and shelter at night, if the weather is stormy. He is of opinion that hogs had better be driven a mile every night to obtain shelter, than allowed to lie in the open night exposed to wind and rain.

The prevention of sturdy in sheep, Mr. Borthwick considers best accomplished by attention to their food; he tells us that on the farm of Tra-

quair-Knowes, when the hogs were kept on turnips alone, the cases of sturdy were great. One year especially, there were as many as five to the score affected; whereas, for the last two years, when hay, and rape cake were given along with the turnips, and shelter attended to, the cases of sturdy have not been more than one in a hundred. And yet, during these two years, the lambs were not better nursed than in other years, when sturdy prevailed to such an extent.

The ill-effects of the sheep being compelled to eat dirt with their turnips is hardly so well understood as is desirable. The dirt in some cases, as in braxy, accumulates to such an extent, that it may be taken out of the animals in handfuls. In acute cases of staggers, the clay, or dirt, sometimes mixed with wool, is found in the animal in round balls.

On the prevention of the rot in sheep, Professor Simonds not long since addressed the Council of the Royal Agricultural Society. He then told his hearers, "This year I had a number of sheep, and foresaw what was coming. I warned some of my neighbors, that we should have a great deal of rot this year, and I thought I would attempt, as far as my own sheep were concerned to save them. What did I do? The sheep were on wet meadows, nearly up to the fetlock joints every day, and nobody could avoid it. But at midsummer I began to feed the lambs and sheep with corn and nitrogenized food, giving them with every meal, a small quantity of salt. I continued that plan during the whole summer and autumn, and I have the satisfaction of saying that I do not believe at the present time that I have one of those lambs affected by the rot. I kept killing them week by week to watch their progress. And here I may observe that long-continued wet weather is very prejudicial to the sheep in another way. I refer now to the so called water rot. What was the state of the liver of these animals at midsummer? There were no flukes or anything of the kind, but the liver was streaked here and there with white lines, and generally pallid. This was for the want of nitrogenized matter. The bile-cells were blanched; the liver had become structurally diseased, and as such it was a good nidus for these entozoa to inhabit. Not only, however, did this simple treatment prevent the entozoa, but it brought about a healthy state of the liver; for in the course of a month or so, I found that the organ resumed its natural colour, and consistence; so that if we commence at midsummer, and continue this treatment through the entire dangerous period of a wet season, we may do a great deal in the prevention of the rot; and I may go further, and say, that even on the farms that have what are all called rotten pastures, on which the sheep are placed, the animals might be preserved to a very considerable extent, simply by giving nitrogenized food and salt, to destroy these creatures within the stomach, and prevent their final change, and alternating with



the salt a tonic invigorating agent, such as the sulphate of iron.

The result of all these researches on the diseases of sheep tend in the same direction, viz., that by attention to the comfort and food of the sheep, many diseases of the sheep are prevented; and no one with whom we have to do will doubt the advantage of thus preventing diseases, not only difficult to cure, but in animals commonly of too little value to repay the cost of medical attendance.

These remarks need not be confined to one variety of our domestic animals; our oxen and our horses, equally benefit by attention to their comfort and their food; and be it remembered, the cost of that food, given with the primary intention of keeping the stock free from disease, need not be regarded as an outlay for which there is no other return. The increase of their weight, the improved quality of their manure, must both be put against the cost of the purchased artificial food. This was lately very fairly put by Mr. Owen Wallis, of Overstone Grange, when addressing the members of the Central Farmer's Club, on the very important question of "the increased feeding of stock on pasture land, in spring, summer, and autumn." The means he suggests are—a better system of management of pastures, and to return to the six course rotation. He said, "I remember when the artificial grasses were very generally grazed for two years, and some for even three. There was therefore, one third of the light arable soils on farms so managed in pasture; and a much greater number of cattle and sheep were then kept upon them than there are at the present day. I have, on former occasions, when addressing the members of this Club, advocated a return to the six course rotation; and the increased value of both store and fat stock is an additional reason for its adoption. I have long been of opinion that more stock may be produced and more corn grown at a less cost by that system than by any other." Then he advises the use of oilcake when cattle are on the pastures, giving the stock the cakes in troughs in the open field, or, what is better, in sheds. As to the quantity given, Mr. Wallis adds, "I commence with 4lbs. per day, and finish with 6lbs., giving on an average 5lbs. per day. If this continued for six weeks, it will amount to 15 stones per head, which at about the average price of cake during the summer will not exceed 20s. We know from our experience that between a ripe bullock and one that is not well up to the mark, there is commonly a difference of more than double that sum in their respective prices, supposing they are equal in size. If, therefore, by an outlay of £1 we receive £2, the investment is a profitable one. But supposing it to be rather less than this, we must not forget the extra number of beasts that can be so fed on the same quantity of land; and the rent, rates, and taxes being the same in both cases, a further additional

profit is thus obtained, to say nothing of the rapid improvement of the soil."

Admitting then the advantage of giving extra food to our stock, another enquiry seems to follow closely upon that conclusion, viz., the comparative profit derivable from the use of different varieties of artificial food. Now on this very important question some carefully conducted experiments with different kinds of artificial food, both for cattle and sheep, are reported in the prize essay of Mr. W. Horn, of Brome Hall, in Norfolk (*Trans. High. Society*, 1861, p. 533). Six bullocks, bred from Ayrshire cows by a Shorthorn bull, in lots of two each, were fed in boxes from Dec. 10, 1859, to April 10, 1860. Five pounds of the artificial food were given to each bullock per day, with 99lbs. of roots, swedes, and mangolds, and 6lbs. of meadow hay; the result was as follows:—

Lots.	LIVE WEIGHT.		
	Dec. 10.	Apr. 10.	GAIN.
	Lbs.	Lbs.	Lbs.
1. Bruised Linseed . . . .	2,716	3,434	718
2. Ground wheat & barley	2,688	3,347	669
3. Oilcake . . . . .	2,754	3,391	637

At the same time, seven lots of Cotswold sheep, in pens of eight each, were fed under a well-ventilated shed—for the first month, on cut swedes thrice a day; the second, on swedes and mangolds; for the last two months, on mangolds alone, with 1lb. of meadow hay each per day, which they had throughout; 0½ lb. each sheep. The other pens, the same money value of the other food, oilcake being £10 10s. per ton, rapeseed £6 10s., cotton-cake £6 10s., locust carob beans £6 10s., peas £9 10s., linseed £1 bruised barley £8. It was found that each consumed nearly 120lbs. of roots and 8lbs. meadow hay per day. The results of these experiments—which, says Mr. Horn, received attention, in order to elicit the truth—were as follows:

PEN.	LIVE WEIGHT.		
	Dec. 10.	Apr. 10.	Gain.
	Lbs.	Lbs.	Lbs.
1. Rapeseed . . . . .	876	1,235	359
2. Cotton-cake . . . . .	890	1,215	325
3. Oilcake . . . . .	884	1,297	413
4. Locusts . . . . .	860	1,222	362
5. Peas . . . . .	890	1,273	383
6. Linseed . . . . .	876	1,263	387
7. Bruised barley . . . . .	894	1,231	337

Another mode of putting the result of more lengthened and elaborate experiments on the same subject, is that of Mr. T. B. Law (Journ. Roy. Ag. Soc., vol. xxii., p. 214).

	LIVE WEIGHT.		
	Dec. 10.	Apr. 10.	Gain.
	Lbs.	Lbs.	Lbs.
Oxen consume, to produce 1lb. increase in live weight, of the DRY substance of the food consumed . . . . .			11
Sheep, ditto, ditto . . . . .			9
Pigs, ditto, ditto . . . . .			4

Thus, when liberally fed under cover, in proportion to a given live weight, within a given time, sheep will consume about  $1\frac{1}{2}$ , and pigs about  $2\frac{1}{4}$  times as much dry substance of their food (that is, of food entirely free from water) as oxen. Oxen should yield per week about 1, sheep about  $1\frac{1}{2}$ , and pigs 5 to 6 per cent. of their weight of increase.

These comparative results Mr Lawes has illustrated by referring to the anatomical construction of the ox, the sheep, and the pig. He shows (*ibid*, p. 215) that, in proportion to the weight of the body, oxen have considerably more of stomach and contents than sheep, and sheep considerably more than pigs. On the other hand, pigs have a considerably larger proportion of intestines and contents than sheep, and sheep more than oxen. But of stomachs and intestines, and their respective contents, taken together, oxen have a larger proportion than sheep, and sheep a larger proportion than pigs. Again, the dry substances of the mixed food of oxen contains a larger proportion of woody fibre than that of sheep, and that of sheep considerably more than that of pigs.

The results recorded in the last little table of Mr. Lawes, which I have just given, are quite in conformity with the facts he has stated with regard to the comparative structure of the different animals, and the comparative character of their respective food. Thus, oxen, with the most bulky and (weight for weight) least nutritious food, have the largest proportion of stomach, and the least of intestinal surface for the absorption of nutritious matter. Now, oxen give also the least proportion of increase for a given amount of the dry substance of food. Sheep come next in order to oxen in these respects. The dry substance of the food of the pig is in much the largest proportion digestible, and available for assimilation and respiration. He has also much the largest proportion of intestinal surface for the absorption of nutritious matter; and he yields much the most increase for a given amount of a dry substance of food. Calculation further shows that that oxen expend in respiration the most, sheep considerably less, and pigs much the least of the dry substance of food, in proportion to a given amount of fattening increase yielded.

In calculating, then, the profit or loss derived from the use of artificial food, several branches of the inquiry must be taken into our consideration. It is generally understood by my readers that oilcake is not directly repaid by the increased market value of the animal; but then, I have endeavoured to show, the greater health and the largely improved value of the manure must be included in the estimate. To this question Mr. P. N. Frere (*Jour. Roy. Ag. Soc.*, vol. vi., p. 219), has devoted considerable attention, and the results of his experiments also confirm the ordinary conclusion, that stock do not pay, least directly, for the artificial food bestowed on them.

On the use of straw as food very considerable difference of opinion prevails. This question forms a portion of the valuable prize essay of Mr. N. Evershed, on the "Proper uses of Straw on a farm" (*ibid*, vol. xxi., p. 158). He arrives, a practical man, at certain conclusions, in which most of my readers will concur. He is of opinion that although it is a common plan, in grazing districts, where roots are scarce, to feed store cattle on about 30lbs. of straw and 3lbs. of bean-meal per day, yet that they do better with roots instead of meal, even where the supply of roots does not exceed half a hundred-weight per head daily. Cattle wintered on straw and meal, are certainly, as he remarks, apt to become "hide-bound," with staring coats.

The average amount of straw per acre Mr. Frere calculates to be  $2\frac{1}{2}$  tons or 250 tons from  $\frac{1}{2}$  cwt. of straw enter into the composition of a ton of farm-yard manure, the remainder being 10 cwt. of water and 6 cwt. of excrement. The consumption of straw chaff by a cart-horse, he places at rather more than a ton per annum; cattle 21 cwt.; for the sheep on a farm of 400 acres he assigns 8 tons of straw chaff yearly. On an arable farm of 400 acres Mr. Evershed calculates that there is required for the yearly fodder of fifty head of large stock more than 50 tons of straw; for sheep, 8 tons; for storing roots, foundation of stacks, &c., about 5 tons—total 63 tons of straw.

—It is now some little time since I first suggested the admixture with the chaff, cut turnips, and other ordinary food of sheep, certain more stimulating substances, and I did this from noting the natural habits of the wild sheep, when browsing on the mountains on which it is found, its love of elevated healthy pastures, its consumption of aromatic plants. On the Southdowns of England the same remark may be made. On these upland pastures we find the juniper, the wild thyme, and other indigenous aromatic plants, and the grazing ground of some of our noblest and most prosperous flocks.

It is not to such admixtures that we must attribute the asserted success of some of the new cattle foods? And might not the number of these aromatic, stimulating additions to the ordinary food of our stock be increased by other and cheaper native and foreign substances? Are there not to be obtained in newly explored African districts, for instance, the oil seeds of equatorial plants, that would very profitably warm the cold cut roots and the chaff on which we compel our flocks and our herds to feed? It is only by studying Nature's great book that we can ever hope to advance in this important direction. But what we have done in this way, how little of nature's teachings we have infused into our stock feeding, let our mountain sheep feeding of turnips, and our pure-air loving oxen, fattening in a box over a deep bed of dung, give them unanswerable testimony.—*Farmer's Magazine*.

### Ergotised Wheat.

The following account of what followed the use of Spurred or Ergotised wheat is taken from that excellent work, *Sowerby's Grasses of Great Britain*; and will serve as a warning to every one, that all diseased grain, of whatever kind, is to be dreaded; and especially that it is a great mistake to imagine that the spurs of Rye are alone capable of producing fearful consequences:—

“Wheat is no less liable than Rye, and, indeed, all kinds of corn and cultivated vegetables, to disorders associated with the development of minute species of fungi; and though ergot is less frequent in its attacks upon it than is the case with the last mentioned grain, several other equally destructive members of the class known by the more familiar names of smut, rust, and mildew, seem always to avail themselves of every opportunity, that weakness engendered by adverse seasons or circumstances presents. Straw, foliage, husk, and grain afford in turn a subject for their insidious depredations, which are always more or less injurious, not to the quantity alone or the crop, but to its nutritive and healthful quality. Instances of this deterioration are shown in the analysis of our agricultural chemists, as in that of blighted Wheat, grown in 1804, by Sir H. Davy, which presented the average quantity of 955 parts of nutritive matter in the 1000 reduced to 650, while a sample of mildewed wheat, in 1806, yielded only 210 in the 1000. The consequence of using such Wheat as food, especially the last mentioned, would, of course, be a step toward starvation, even though no greater evil resulted. It is, however, well known to be highly prejudicial to health and the higher standard of living among the poorer classes of our population, compared with these of some continental countries, is the only cause of their exemption from the dreadful disease mentioned above as resulting from the use of bad Rye. That such disease might occasionally prevail among them here from similar causes, under a more restricted form of diet, is evident from a record in the *Philosophical Transactions* for the year 1762. The case in question occurred in the village of Wallisham, about 15 or 16 miles from Bury St. Edmund's, Suffolk, and the report of it was forwarded to the Royal Society by Dr. Wollaston, attested by the Rev. Mr. Bone, the curate of the parish, and is abridged as follows:—Some of the Wheat belonging to a farmer in the neighbourhood, being laid or beaten down by bad weather, and the grain much damaged in consequence, was collected and threshed apart from the remainder. Being unfit for the market, it was sold at a low price to any of the farm-laborers, and other people of the village who might be inclined to purchase. The sale

of this corn commenced about Christmas, and to one poor family, whose chief, or possibly sole support it was for some time, the result was most alarming and unparalleled. It appears that the consumption of the clog-wheat or rivets, as it is termed, by the father, mother, and five children, was about two bushels in the fortnight; the same being eaten in the form of bread and puddings, both of them very indifferent in quality. But to poverty, cheapness and sufficiency of food are always irresistible inducements, and this unwholesome fare was continued, without intermission, until the mother and her children were attacked, within a very few days of each other, with gangrenous ergotism. The first indication of the disease, intense pains in the lower limbs occurred on the 10th of January, which were probably mistaken for rheumatism; and when these subsided, within the course of the week, numbness and insensibility of the parts succeeded, terminating in mortification. The condition of the family at the time Dr. Wollaston made his report to the Society is here subjoined:—

‘Mary, the mother, aged 40. Right foot off at the ankle; left leg mortified, a mere bone, but not not off.

‘Elizabeth, aged 13. Both legs off below the knees.

‘Sarah, aged 10. One foot off at the ankle.

‘Robert, aged 8, both legs off below the knees.

‘An infant, aged 4 months. Dead.

‘The father was not attacked until about a fortnight after his wife and children, and in a slighter degree. In him the pain was confined to two fingers of his right hand, which turned blackish, and withered. Another labouring man, in the same parish, who had eaten of the bread, suffered from numbness in both his hands for about a month. They were constantly cold, and his finger ends peeled; one thumb, he says, remains without any sensation.’

In several instances, where bread made from the same corn was eaten in the farmer's or family, as well as by other persons, no peculiar effects were noticed, probably in consequence of such bread being only occasionally used, and as an adjunct to other wholesome food. The nature of the disease with which the Wheat was affected in this lamentable case, does not appear to have been ascertained; but the circumstances are well authenticated, and were in my boyhood the early part of the present century, the subject of local tradition in the part of the county, Suffolk in which they took place. It is possible that the fatality attendant upon the use of the damaged grain, in the unfortunate family above mentioned, arose quite as much from the absolute deficiency of proper nourishment, as from the alleged poisonous quality of the mildewed wheat, but, with such examples before us, too great caution cannot be enforced regarding the use of grain or flour of suspicious character.”

### To Avoid Running Out of Hay.

Every farmer naturally has an aversion to running out of hay in spring before grass comes. No one desires to buy that which he ought to have raised, to keep his cattle from starving; and the only alternative, when short of fodder, viz., placing them on short allowance, is still worse. The farmer should know before he enters winter whether he has enough feed for all his domestic animals.

To ascertain this, many resort to past experience, determining as nearly as they can, by guess—often by a very vague kind of guessing. Those who have kept careful record of the number of tons consumed by a given herd of cattle, or a certain number of horses, may determine more nearly. Where the cattle and horses have been weighed, and the aggregate weight of the herd has determined, the estimate may be made with considerable accuracy. Some animals eat more than others for the same weight; a greater difference is occasioned by the severity or mildness of the weather; or the degree of shelter given from the cold; but as a general rule, a horse would have three per cent of his weight daily a food (hay or grain,) and cattle, which digest better, two and a half per cent. If the farmer has ascertained the number of tons of fodder he has deposited in his barn, he may now, if he understands arithmetic, determine pretty nearly, how his hay is likely to run, before grass time.

If he has no record of the amount of his hay, he may determine, very nearly, by measuring, first, by finding the length, breadth, and depth of the hay, he at once knows the number of cubic feet. Good solid timothy; the average of hay 12 or 15 feet deep, will weigh a ton, to about 500 cubic feet. If the hay is clover, it will require 600 or 650 for a ton; and if the hay is only 5 or 6 feet deep, add one-sixth more. After determining the number of tons, and the whole weight of all his animals, he may at once know if he has enough. The result will, however, be considerably modified by causes which he has more or less at his control. Regularity in feeding will have its influence; good feeding racks will prevent much waste; and comfortable shelter will save many tons to every acre herd. A skillful farmer informed us, that nearly when he had just erected a fine new barn, with ample shelter of the best kind, he had learned, as he thought, according to his usual estimate, that he would have to buy hay to complete the wintering of his animals; but finding his new sheds and stables, so great in the saving actually effected, that he had several tons the next spring to spare.—*Country Gentleman.*

### Real Value of Artificial Cattle Foods

Professor Anderson, Chemist to the Highland Society, has carefully analyzed the principal

cattle condiments which have recently obtained great notoriety. In the new number of the "Transactions of the Society," he gives the ingredients of each sample submitted to analysis, and thus sums up his opinion of them:—

"The examination of these analyses shows that there is a very close general resemblance among the samples. Whatever difference may exist in the nature of the ingredients or the proportion in which they are mixed, there is but little in their nutritive value. They are, in fact, all composed of ordinary feeding grains, with the addition of certain aromatic or bitter substances, forming but a small portion of the whole. The methods of chemical analysis which enable us to state how much sugar or albuminous compounds any mixture may contain, do not admit of our determining the proportions of the various seeds or other substances mixed together; nor is this a matter of any moment as far as nutritive value is concerned, for it is immaterial whether these particular elements are derived from one or other grain. It is their combined effect which is of importance. Looking, therefore, at these foods merely in a nutritive point of view, it must be unhesitatingly asserted that they have nothing to recommend them. They are, in fact, inferior in this respect to many of the simple foods in common use—such for example, as linseed or oil-cake. Neither have they any claim to be considered as "concentrated" foods in the sense in which we speak of concentrated manure. There has been no removal of the innutritious matter, the water being nearly the same as in most seeds, and the woody fibre exceeding in amount that found in the common grains or in oil-cake. Nor can this excite any surprise, for they are all mixtures of those substances with aromatic seeds or roots, which are all much richer in woody fibre than the nutritive grains.

"The presence of aromatic or bitter matters is, therefore, the sole peculiarity of these cattle foods; and it is obvious that these substances ought to produce any effect of which they are capable, just as well if they added to the ordinary food of the cattle, as if they be mixed by a manufacturer with other substances before being sold to the farmer.

"It has been already remarked that the effect attributed to aromatics by the makers of these foods is, in the last degree problematical, and unsupported by any well ascertained facts; and their assertions must go for nothing, unless they are prepared to support them by experiments which shall be satisfactory to experienced feeders. As matters at present stand, they must be judged of on the same principles as those used in estimating any other food, and in this respect they cannot be ranked very high. If they possess any special action, it is self-evident that it must belong to the aromatic or bitter substances they contain; and if the makers wish to satisfy

the farmer on these points, they ought to put it in his power to use the aromatics alone, and allow him to mix them with such foods as he may choose. This course however, will by no means suit their purpose. At present they take carob beans, Indian corn, and other substances, costing £8 to £9 per ton, which are mixed with a small quantity (about 10 per cent) of some aromatic, costing perhaps £20 or £25 per ton, and the mixture so produced, at a cost of perhaps £10 or £11 per ton, is sold to the farmer at £30. It is quite obvious that as long as a manufacturer can sell the article he produces at a price approaching three times its intrinsic value, he will not trouble himself to inquire into the exact facts of the case, and will be satisfied with denying, in place of refuting, the statements of scientific men. The opinions I have expressed regarding these feeding-stuffs are in complete harmony with those entertained by all agricultural chemists. They have already been often expressed, and their accuracy strenuously denied by the concentrated-food makers, and they will no doubt be again denied, but they will not be disproved by them. If the manufacturers really desire to satisfy the agricultural community, the proper course would be for them to submit their foods to some farmers of experience, in whose judgment full confidence can be placed, and agree to stand or fall by the result. From this ordeal they will doubtless shrink; and as long as they do so, they must be content to bear the imputation of trading on the credulity of the farmer, and selling him an article at three times its real value.

"I have not hesitated to express thus distinctly the opinions I entertain, because this is a subject on which science can speak with no doubtful voice. It is not a question in regard to which there can be any difficulties, but is one of comparing the results of analyses with those of other and well-known foods; and before a minute examination the alleged "discoveries" of the inventors of these substances vanish into thin air, or rather revolve themselves into the art of making the farmer pay dear for a cheap article."

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## Agricultural Intelligence.

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### Meeting of the Board of Agriculture.

The Board of Agriculture met at their Rooms, 188 King Street West, Toronto, pursuant to call of the President, on the 29th ult., January, 1862, at 3, p. m.

Present: Messrs. E. W. Thomson, President; Hon. G. Alexander, Hon. D. Christie, Hon. H. Ruttan, R. L. Denison, F. W. Stone, President of the Agricultural Association; Professor Buckland.

The Minutes of last Meeting were read and confirmed.

After some informal conversation in reference to the objects of the Public Meeting called for to-morrow, 30th inst., to take into consideration the amendments desirable to be made in the Agricultural Statute, the following mentioned communications were submitted:—

Letters from several Agricultural and Horticultural Societies, naming the delegates to the public meeting on the 30th inst.

A letter from Mr. F. Shanly, tenant of the house and premises of the Experimental Farm, asking for a remission of rent, to the amount of \$211.60, on account of certain improvements stated to have been made by him on the said premises.

A special report upon some Shropshire Down Sheep, lately imported by Mr. Geo. Miller, of Markham, and exhibited by him at the Provincial Exhibition at London last year, suggesting the awarding of a special prize to the same.

From Mr. Chamberlin, Montreal, Secretary to the International Exhibition Commission to take place at London, England, this year, soliciting the co-operation of the Board in procuring a collection of cereals and other farm produce for the said Exhibition.

From Mr. Alex. Campbell, London, late contractor for the Provincial Exhibition Building, at that city, asking for payment of an account of \$595.39, for work executed upon the Exhibition Grounds beyond that for which had been paid by the local committee.

Two letters from J. H. Flock, Esq., Solicitor, London, on behalf of Mr. Campbell, requesting payment of the above claim.

From a Committee of the West Elgin Agricultural Society, complaining of proceedings which had taken place at the Annual Meeting of that Society, on the ground that a large number of persons, who, the Committee believed, were not legally members, had taken part in the election of office-bearers, and overruled the legally constituted members of the Society, and asking for the advice of the Board in the premises.

## OF THE BOARD OF AGRICULTURE.

Ordered—In reference to the Shropshire Down Sheep, exhibited by Mr. Miller at the London Provincial Exhibition, that the prizes remain as awarded by the Committee of Judges at London.

Moved by Hon. Mr. Alexander, seconded by Hon. Mr. Christie, and

*Resolved*,—That Professor Buckland and the Secretary be requested to republish, as an extra of the next number of the *Agriculturist*, a small manual giving to the farmers information respecting the culture and after management of flax, to be distributed in those counties where the farmers are desirous of introducing that product.

The Board then adjourned to 10 a.m., tomorrow.

The Board resumed according to adjournment.

Present, the same members as yesterday.

Major Campbell, a member of the Board of Agriculture of Lower Canada was also present.

The Minutes of yesterday were read and approved.

Some conversation took place on the nature of the changes desirable to be made in the Agricultural Statute. Major Campbell, on request of the Board, gave some explanations as to the details of the Bill which he had introduced into Parliament.

The following gentlemen were nominated to form the nucleus of the Local Committee for the Provincial Exhibition of this year, at Toronto, viz.:—F. W. Jarvis, Esq., Sheriff of York and Peel; J. P. Wheler, Esq., Warden of the Counties; J. G. Bowes, Esq., Mayor of the City of Toronto; James Beachall, Esq., President of the Toronto Electoral Division Agricultural Society; Hon. G. W. Allan, President of the Toronto Horticultural Society.

The Secretary was instructed to request these gentlemen to meet at the Board Rooms on February 8th proximo, at noon, to consider the preliminary arrangements connected with the approaching Exhibition.

On motion of Professor Buckland it was Resolved that the Board of Arts and Manufacturers be requested to revise the Prize List of the Arts Department of the Exhibition, in the same manner as they had done last year.

The Board then adjourned in order to attend the Public Meeting to be held at noon, this day, in reference to the Agricultural Statute.

### PUBLIC MEETING.

The Public Meeting, called by circular, in accordance with the resolution passed at the annual meeting of the Agricultural Association at London, in September last, a copy of which circular appears in the *Agriculturist* of 1st ult., assembled in the lecture room of the Mechanics' Institute, Toronto, on the 1st ult.,

at noon. The attendance was large and of a highly influential character.

The following gentlemen were present:

### DELEGATES FROM COUNTY AND ELECTORAL DIVISION AGRICULTURAL SOCIETIES.

North Hastings	Henry Ostrom.
Victoria	John Gibb.
Lincoln	J. C. Rykert, M. P.P.
Brockville	C. Sibbald.
Hamilton	Geo. Ryach.
West York	E. C. Fisher.
South Simcoe	G. D. Morton, M. D.
Prince Edward	D. B. Solmes.
Niagara	A. C. Currie.
Lennox	John Hawley.
South Waterloo	James Cowan, M. P.P.
Grey	James Ross.
East Middlesex	James Johnson.
Toronto	Hon. G. W. Allan.
Essex	Alexander Bartlett.
Lambton	Archibald Young.
Huron	John Hunter.
North York	E. Jackson.
West Durham	Matthew Jones.
Peterborough	John Walton.
South Wellington	Col. Saunders.
South Wentworth	W. A. Cooley.
North Wellington	John Beattie.
East Durham	John Foot.
North Simcoe	Walter Raikes.
North Wentworth	Thos. Stock.
Norfolk	Oliver Blake.
East York	Archibald Barker.
Haldimand	Jacob Young.
North Oxford	John Dunlop.
South Ontario	John Shier.
South Leeds	Dr. Richmond.
North Lanark	John Menzies.
Addington	J. B. Aylsworth.
West Brant	James Maxwell.
East Brant	Wm. Patton.
East Northumberland	A. J. Wright.
Peel	John Tilt.
West Northumberland	John Wade.
Halton	E. Bowes.

### REPRESENTATIVES OF HORTICULTURAL SOCIETIES.

Cobourg	Glover Bennett.
St. Catharines	D. W. Beadle.
Peterborough	Rev. V. Clementi.
Hamilton	Geo. H. Mills.
Paris	Chas. Arnold.

### MEMBERS OF THE BOARD OF AGRICULTURE.

E. W. Thomson, R. L. Denison, Hon. D. Christie, Hon. G. Alexander, Hon. H. Ruttan, F. W. Stone, Professor Buckland.

### MEMBERS OF THE BOARD OF ARTS AND MANUFACTURES.

Dr. Beatty, W. H. Sheppard, W. Edwards, Rice Lewis, Dr. Craigie, T. Sheldrick, H. E. Clarke.

Lower Canada Board of Agriculture, Major Campbell.

The delegates having taken their seats, Colonel Thomson, President of the Board of Agriculture rose and explained that this meeting having been called in accordance with a resolution of the Agricultural Association, was properly a meeting of Delegates from the County Agricultural Societies, and the members of the Board of Agriculture did not propose to take part in the proceedings unless called upon to do so. They would however be present to give any explanations that might be asked for.

It was then moved by Colonel Saunders, seconded by Mr. Cooley, that Colonel Thomson be requested to take the chair.—Carried.

Moved by Mr. Johnson, seconded by Mr. Beadle, that Mr. Hugh C. Thomson be requested to act as Secretary.—Carried.

Moved by Mr. Blair, seconded by Mr. Foott, that the members of the Board of Agriculture present be requested to take a share in the deliberations of the meeting.—Carried.

On motion, Major Campbell, of Lower Canada, was also requested to take part in the proceedings.

[For the sketches of speeches which follow, we are principally indebted to the report of the Toronto *Globe* newspaper.]

The Chairman, in opening the proceedings, said the object of the meeting was to take into consideration a Bill which passed the House of Assembly last year, but which was rejected in the Upper House. This Bill did away with the Agricultural Association *in toto*; it deprived the people of the different agricultural societies of the privilege of sending up delegates to the annual meeting for the selection of officers and for the selection of a place at which to hold the next annual fair.—The Bill entirely did away with this and left the power in the hands of a Board of Agriculture to be elected by the agricultural districts as proposed by the Bill. It entirely tomahawked the old association, which had been in existence sixteen years, which had worked to the approval of the public, and had been admired by visitors from all parts of the world. If the meeting thought another mode of electing the members of the Board of Agriculture was preferable to that now pursued, they would now have an opportunity of making their views known.

Hon. David Christie wished to correct a wrong impression which perhaps might be made by a remark of the Chairman. He [Mr. Christie,] referred to that portion of his speech relating to the rejection of the bill by the Upper House. It was not rejected by the Upper House—it was referred to a committee and the committee did not report. The reason was that Messrs Alexander and Allan, with himself (Mr. Christie,) felt that it would be very unwise to give their assent to the changes proposed in the absence of a single

petition; for there was not a single petition presented in favor of the bill. It was, therefore, laid over for the purpose of ascertaining what the wishes of the people of Upper Canada were in reference to it.

Hon. Mr. Alexander endorsed Mr. Christie's explanation.

Major Campbell said, as he was a foster-parent of the bill which it was now proposed to discuss, he would with the leave of the Convention explain its bearings.

He appeared at the meeting as a representative of the Board of Agriculture of Lower Canada. At its last meeting a resolution was passed deputing two of its members, the President (Hon. L. V. Sicotte) and himself, to attend this meeting to give any explanations connected with this bill. The President was unwell and unable to attend. He (Major Campbell) was therefore left the sole representative of Lower Canada. It was felt in the Eastern portion of the Province that sufficient interest was not taken in the Board of Agriculture, and they came to the conclusion, that if its organization was somewhat altered by dividing the country into districts, and allowing each district to send a member, greater interest would be felt by the people. At the third session of the last Parliament, he (Major Campbell) obtained a committee to enquire into the matter. It was composed of members from Upper Canada as well as from Lower Canada. The committee sat for a considerable time, and at last made a report upon which his bill was based. By the time that was done the session came to an end. The succeeding session—the last—he (Major Campbell) immediately upon taking his seat, introduced the bill and it was again referred. The bill which was passed by the Lower House was the result of the deliberations of the Committee. It differed in some respect from the *projet de loi* which he (Major Campbell) had submitted. At the present moment the Board of Agriculture was composed of eight members, four retiring each year who might be re-elected. The different societies might either return the same four or others in their place. It was found in Lower Canada on the one hand exceedingly difficult to make any change in the members, and on the other hand any party might by a little underhand work before the election, cause the rejection of candidates. These were the principal reasons which induced the committee to propose the alterations contained in his (Major Campbell's) bill. They thought that each section of the Province should be divided into twelve districts, and that the agricultural societies in each of these districts, at their annual meetings, should elect one of their number to be a member of the Board. This was the principal alteration proposed. It was also sought to separate the Boards of

Arts and Manufactures from the Agricultural Associations, permission being given these two bodies to join together when they saw fit. The Committee thought agriculture was now strong enough to walk alone. In the circular sent round by the Secretary, he mentioned the chief point—the difference in the mode of electing members of the Board. He also spoke of “the dissolution of the Agricultural Association.” That certainly was discussed in the Committee, and it was felt that if the Board of Agriculture was elected in the manner he (Major Campbell) had stated, that they would then fully represent the agricultural population, and that there was no necessity for sending up delegates every year merely to choose the next place at which to hold the Exhibition and to elect the officers of the Society. Major Campbell concluded his remarks by assuring the meeting that the Lower Canada Board did not in the least desire to dictate. He merely appeared to explain the views they held.

Col. Saunders, delegate from South Wellington, said the principal objection felt in his district to the Board of Agriculture was the way in which its members were elected. There was no chance of putting a new member in. The people of Guelph tried it for some time, but were quite unsuccessful. Major Campbell's bill entirely met their views. Each district would then have a chance of sending to the Board a man in whom it trusted. He was sure a great majority of the farmers took this view.

Mr. Jackson, delegate from North York said the Society he represented, felt that some other mode of electing members to the Board was wanted than that now in use. They had felt this for many years. But he was not quite sure Major Campbell's bill met the difficulty. It provided that the members of each district should meet for the purpose of electing a member. Was the end to be gained worthy the labor it would cost? Each district would spread over several counties, so that the members of the Societies would have to travel many miles to the place of meeting. The Society to which he (Mr. Jackson) belonged, thought this would be a difficulty in the way of the effectual working of Major Campbell's bill.

Mr. Johnson, from Middlesex, said he had not met a man in his travels who did not approve of the new method proposed for electing the members of the Board. With reference to what the chairman had said, that the Board of Agriculture would be destroyed by the Bill of last session—

The Chairman had not said so.

Mr. Johnson said the circular that had been issued, at any rate, stated that by the bill of last session the Agricultural Association would be destroyed. He (Mr. Johnson) did not see

it in that light. The members elected by the districts would constitute the Board, and the whole thing would go on regularly enough.

Mr. Barker, of East York, expressed himself in favor of an alteration in the mode of electing members to the Board.

Mr. John Feott, Port Hope, said he thought there were no two opinions as to the desirability of effecting an alteration in the mode of electing the members of the Board. But there was another matter of perhaps greater importance. It was felt that the interests of the agriculturists had been subordinated to those of the artists. The farmers who brought in their cattle to the Provincial Show had to pay \$5 for a shed, while the Mechanics had expensive buildings erected for them and used them free of cost. Let the Board of Agriculture be separated from the Board of Arts, and allowed to unite when they thought it their material interest to do so.

Mr. Thomas Stock, of North Wentworth, was not quite sure that the Board of Agriculture was strong enough to stand alone without the assistance of the Board of Arts. He felt that they could not offer sufficient attractions to the public at the annual exhibition. He agreed with the previous speakers that an alteration in the mode of electing members of the Board was necessary. The objection taken by the delegate from North York was not valid. The farmers took greater interest in the Society than that. Neither twenty miles, nor one hundred miles would stand in the way.

Mr. Archibald Young, of Lambton, moved, —“that the 12th and 13th sections of the Bill before Parliament last session, relating to the mode of electing members of the Board of Agriculture, be approved by this meeting.”

The 12th and 13th sections are as follows:—

“XII. Upper and Lower Canada shall each be divided into twelve agricultural districts designated by number, as in schedules A and B annexed to this act, and each comprising the counties designated.

“The Agricultural Societies in any electoral Division, Parish or township in each District shall, at their annual meetings, nominate and elect one person to be a member of the Board of Agriculture of the same section of the Province; and the person who shall obtain the majority of the votes of the Agricultural Societies in a District, shall represent the District at the Board of Agriculture; and the Secretary of each Society shall, within eight days after such election, forward to the Minister of Agriculture the name of the person chosen by such society.

“XIII. The first election shall take place at the annual meetings in 1862, when six Districts, to be named by the present Board, in each section of the Province, shall each elect a member to replace the four members then



retiring from the said Board respectively. The other six Districts in each section of the Province, shall each elect a member at the annual meetings in 1863, to replace the remaining four members, whose term of service will then expire."

At this stage of the proceedings, it being half-past one, the meeting adjourned an hour for refreshment.

Upon re-assembling,

Mr. James Cowan, M. P. P., seconded by Mr. Ross, moved,—“That the meeting proceed to take into consideration the Agricultural Bill passed by the House of Assembly last session; that the Bill be read clause by clause by the Secretary, and the sense of the delegates taken on each clause.”

Mr. Barker, seconded by Mr. R. L. Denison, moved,—“That the existing Statute, under which we now act, be taken up and considered clause by clause, and that such amendments and alterations as may be deemed necessary be added.”

Mr. Barker's amendment was lost. Mr. Cowan's motion was declared carried.

The Secretary then proceeded to read the Bill of last session, clause by clause.

The first clause is as follows:—

“1. The Bureau of Agriculture and all Agricultural Societies and Boards of Agriculture lawfully organized or established shall continue to exist, except in so far as the said Bureau, or such Societies and Boards, are altered or affected by this Act.”

The first clause in the present law reads as follows:—

“The Bureau of Agriculture and all Agricultural Societies, Associations and Boards of Agriculture, incorporated or otherwise created, continued or recognized by or lawfully organized or established under the repealed Act, passed in the 16th year of Her Majesty's reign, chap. 11, shall continue as if the said Act were still in force, except in so far as the said Bureau, Association or Board are altered by this Act.”

Col. Denison considered if the first clause was passed, the old Agricultural Association would be abolished. He did not think this was right. The old Association had spread its branches and roots far and wide. It had life members all through the country, who would cease to be members of the Agricultural Association; and if that were the case, the Association would be deprived of its agricultural character altogether.

Mr. Sheriff Ruttan said the great point was to satisfy the country that it was fairly represented at the annual meeting.

Hon. G. W. Allan said if the old association were done away with, the doors would be closed to amateur agriculturists—a very important class who had aided the Society.

Hon. D. Christie said the objection taken to

the constitution of the Board was that it was a close corporation. But what was the remedy sought? It was proposed to do away with the old association, and to place the management of the whole affair in the hands of twelve men, over whom there was no check, in fact the new Board would be a closer corporation than the old one. He considered it would be a great calamity to the country when the members of the Board were not compelled, at least to appear once a year, face to face with the delegates.

It was ultimately agreed, after considerable conversation, to add the words, “and associations,” after the words “the Bureau of Agriculture and all Agricultural Societies,” as a means of removing the objections raised.

The clause was then carried.

The several clauses were then read and adopted as far as the eighth.

The ninth clause provided that out of the whole amount voted for the encouragement of Agriculture, four and a half per cent. in Lower Canada, and in Upper Canada two and a half per cent. thereof shall be appropriated and devoted to the promotion of Agricultural Instruction and information.

2. The Board of Agriculture may in its reports to the Government indicate in what manner this sum should be employed.

3. Of the whole amount voted for the encouragement of agriculture, ten per cent. in Upper Canada, and eight per cent. in Lower Canada thereof shall be placed at the disposal and in the hands of the Board of Agriculture for the purpose indicated by law.

Mr. Jackson moved in amendment to this clause the parallel clause in the present Act.

The clause reads as follows:—

“Out of the sums appropriated for agricultural societies in Upper and Lower Canada respectively from Provincial funds, two and one half per cent. shall be applied under the authority of the Governor in Council towards the promotion of agricultural instruction and information.”

Major Campbell pointed out that the clause in the bill had been unanimously agreed to in Lower Canada, and presumed that the meeting did not want to deprive the other section of the Province of the appropriation.

Mr. Solmes moved that the 2½ per cent. for Lower Canada be struck out of the clause. He appreciated the justice of the remark made by Major Campbell.

Mr. Cowan, M. P. P., moved;—“That out of the whole amount voted for the encouragement of agriculture in Upper Canada, 2½ per cent. thereof may be appropriated and devoted to the promotion of agricultural instruction and information by the Board of Agriculture in that section of the Province.”

Mr. Stock seconded the amendment, and pointed out that if the Bill remained as pro-

posed, the deduction of the 2½ per cent. was compulsory. Under the amendment it was discretionary.

Mr. Sheriff Ruttan contended that by the 2nd section it was discretionary with the Governor in Council to deduct the money. Hitherto it has not been deducted.

Mr. Cowan's amendment was carried.

The second and third sections of the clause were also carried.

For the tenth clause of the Bill, stating what persons shall be *ex-officio* members of the Board of Agriculture, the tenth clause of the present act was substituted; with the President and two Vice Presidents of the Association added as *ex-officio* members of the Board.

The 11th clause was adopted.

Mr. Ostroin moved in amendment to the 1st section of the twelfth clause (quoted above), that the districts be eight instead of twelve.

Mr. Stock spoke against the amendment. He did not think twelve too large a number.

Dr. Craigie thought that the best way to constitute a Board would be for each county association to elect a delegate. These delegates should meet and elect an Executive Committee of six or eight members.

Mr. Solmes agreed with Dr. Craigie. The county Society of Prince Edward was strongly in favor of appointing delegates, and he (Mr. Solmes) thought the counties would at least bear all the expenses.

Mr. Sheriff Ruttan moved—"That the present mode of electing the members of the Board of Agriculture is unsatisfactory, and that in future each County Agricultural Society shall at their annual meeting in January, elect one delegate, of which delegates shall meet at—on the 1st Tuesday in February, and then and here all elect eight gentlemen who shall form the Board of Agriculture."

Dr. Craigie seconded the amendment.

Mr. Barker moved in amendment to the amendment, "That the several county societies all at their annual meeting, name two persons to act as delegates, who shall, at the meeting of the Provincial Association, at its annual Exhibition have each a voice in the election of members of the Board of Agriculture, and the election of such members shall take place on the evening of Thursday, in the first week of the exhibition."

Mr. Blake seconded this amendment.

Mr. Fisher wanted to know why it was necessary to change the constitution of the Board? Had the Board not gained the respect of farmers of the country? Did gentlemen as they were going to get a better Board? they did, it was their duty to point out why change was needed. Let those who were so anxious for a change speak out. Not one single man had been given for it.

Mr. John Tilt was in want of the same kind

of information as Mr. Fisher. He did not want change for the sake of change. Neither did those whom he represented.

Mr. Jackson said it surprised him a little to hear that change was not needed. Why, then, was this meeting called? At the last meeting of the Association in London very great discontent prevailed at the manner in which the Board was elected. It was found impossible to infuse new blood into it.

Mr. Oliver Blake made an appeal on behalf of the old constitution. What had they done? What were the complaints against them? He had not heard the first word of complaint.

Mr. Cowan suggested that Mr. Sheriff Ruttan should so modify his motion as to cause the delegates to meet at the Annual Exhibition for the election of the Board.

Col. R. L. Denison said Mr. Ruttan's motion was a good motion. But Mr. Barker's motion was better, because there would be a good deal of difficulty in getting the delegates to attend a meeting in the winter. But if—as Mr. Barker proposed, the meeting was held at the time of the Provincial Show, there would be plenty of delegates to attend. He hoped Mr. Sheriff Ruttan would withdraw his motion.

Mr. Sheriff Ruttan had proposed the amendment because he wanted to popularize the Association. He had lately seen a disposition to hold the exhibition in one particular portion of the Province. He was opposed to this centralization. He wished to see the exhibition pushed into every nook and corner of the Province; to be taken east to Kingston, and not confined to the west. He was afraid to name for a day of meeting one of the days of the Provincial Fair. He had seen so much of the difficulty attending the transaction of business on these occasions. Besides if the delegates met at some other time, in a quiet room, much of the "electioneering" and many of the annual quarrels would be avoided.

Mr. Barker's amendment was then put from the chair, and carried by a majority of four—26 yeas to 22 nays.

Mr. Cowan said it was now decided how the members of the Board should be elected. He (Mr. Cowan) moved "that the number of elected members should be eight."

Mr. Solmes seconded the motion.

Mr. Cooley moved, seconded by Mr. Jackson, "That the number of elected members be twelve."

Mr. Cooley's amendment was carried by a vote of 24 to 22.

The meeting then, at six o'clock adjourned for one hour.

Upon re-assembling—The several clauses of the bill were read and approved as far as the 25th.

Hon. Mr. Allan, seconded by Mr. Beadle, moved in amendment to clause 26, the following:

—“Every Horticultural Society in any city, town, or incorporated village, incorporated under this act, or which may have been incorporated under any other act of the Provincial Legislature, shall be entitled to a public grant, equal to the amount subscribed by the members of such society and certified by their Treasurer to have been paid into his hands in the manner provided by the section of the act relating to Agricultural Societies, provided that the whole amount granted to any such society shall not exceed £100 in any year.” Carried.

Clauses 27 to 29 were adopted.

In place of clause 30 in the bill, clause 48 of the existing statute was substituted, on motion of Mr. Birker.

The 31st clause was adopted, with the additional proviso, that Township Societies should contribute \$10 to the funds of the County Society, either by membership or otherwise.

Clauses 32 to 36 were adopted.

Clause 37 was adopted, with the following addition, on motion of Mr. Barker, “that in the event of the Secretary or Treasurer dying or resigning office during the term for which he has been elected, it shall be the duty of the Directors and they are hereby empowered to nominate and appoint a fit and proper person to fill the office for the unexpired term of the person so dying or resigning as aforesaid.”

Clauses 38 and 39 were adopted.

The 40th clause was adopted with the addition of the same proviso contained in the old act, giving certain County Societies \$1000 per annum.

Clauses 41 and 42 were adopted.

In place of clause 43 in the bill, clause 61 in the act was substituted, upon motion of Colonel Denison.

The clause in the bill was as follows:—“The Board of Agriculture shall receive from Government, and pay over to the county societies, the Public Grants to which they are respectively entitled.”

The 61st clause of the present act has, in addition to the above, the words “and the said Board may retain for the use of the Agricultural Association, one-tenth part of all such grants.”

Clauses 44, 45, 46, 47 and 48 were approved.

The sections relating to Lower Canada were passed over.

Mr. Cowan said there was a feeling in the section from which he came, that the township shows were too small to do much good, and detracted from the county exhibitions. He therefore moved:—“That the amount paid to any township society from the funds of any county or riding Society, shall not exceed the amount which such township Society would be entitled to receive, were all the townships in such county or riding to organize township societies.”

Mr. Rykert seconded the motion.—Lost.

The 71st clause was approved.

A number of clauses following related to the Board of Art and Manufactures.

Dr. Beatty said these clauses provided for the separation of the Board of Arts from the Board of Agriculture. This separation was desired in Lower Canada, but not in Upper Canada. Some gentlemen had indeed said that the arts and manufactures were able to walk alone. But how were they to walk alone? Agriculture got a grant in each section of the Province of \$52,000 a year; but arts and manufactures of only \$2,000. Unless the Legislature would bestow a grant on the Boards of Arts and Manufactures, they could not “walk alone” just yet. Dr. Beatty went on to defend the present union, and moved, seconded by Mr. Barker:—“That the meeting disapproves of the separation of the Board of Arts and Manufactures and of the Board of Agriculture, so far as relates to the holding of joint exhibitions in Upper Canada, proposed by the bill under discussion.” Carried.

Dr. Beatty read a number of clauses relating to the Boards of Arts and Manufactures agreed upon some time previously by the Boards of Arts and Manufactures, and by the Board of Agriculture.

Mr. Beadle seconded by Col. Denison moved that they be approved by the meeting. Carried.

[The clauses were very lengthy. They were published in the April, 1861, number of the *Journal* of the Board of Arts and Manufactures, and having been previously well considered elicited no debate.]

The meeting next proceeded to consider a number of clauses proposed by the Board of Agriculture and the Board of Arts and Manufactures, as an addition to Major Campbell's bill immediately following his clauses constitute the Boards of Arts and Manufactures. The proposed additions were published in the number of the *Agriculturist* of April 16th, 1861, and are very similar in purport to the clause in the present act relating to the Provincial Agricultural Association. They would have the effect of preserving the Association, which would be abolished by the bill of last session. They were adopted by the meeting without discussion.

On motion of Dr. Beatty, a new clause was adopted to the following effect.

“The Council of the Association shall have power to grant licenses to parties to sell refreshments upon the premises enclosed for the Exhibition.”

Mr. Sheldrick moved, seconded by Mr. Sells that the Presidents and Secretaries of the Board of Agriculture and the Board of Arts and Manufactures be a committee to draft a bill in accordance with the action of this meeting, and print a sufficient number to distribute among the various Societies, the members of the Legislature and of this Convention.

Col. Denison moved that the draft be published in the *Journals* of the respective Boards.

Col. Denison's amendment was carried.

Mr. Cooley moved, seconded by Mr. Barker, that Messrs. Allan, Christie, and Denison be committed to draft an address of condolence to Her Majesty, and that it be signed by the chairman on behalf of the meeting." Carried.

#### THE WORLD'S FAIR.

Col. Thomson said he begged leave to say a few words upon another subject. He was one of the commissioners for collecting articles for the great International Exhibition in London this year. Those desiring to exhibit were requested to send their samples to London, C. W., by the 18th of this month; in Hamilton by the 20th; Toronto by the 22nd; Kingston by the 24th. A general selection would be made at Montreal by the commissioners. The goods had to be in London by 31st March. The share allotted for exhibition of Canadian products was not so great as in 1851, but it was to be feared so much would not be wanted. The Government only placed \$6 000 at their disposal this year. In 1851 they placed \$60,000, and for the next Exhibition, \$80,000. However, the commission were determined to do the best they could.

A vote of thanks was then given to the Chairman and the Convention adjourned *sine die*.

#### County of Welland Agricultural Society.

We have been furnished with the following extract of the report of this Society for the year, for publication in the *Journal*:—

The number of people congregated to witness the Fall Exhibition was greatly in advance of its predecessors.

The entries at the Fall Exhibition were not great as at that of last, being 547 against

However, the converse obtained in respect to the Spring Show. The following synopsis regard to the entries at the Fall and Spring shows may prove interesting:—No. of stallions entered, 14; of two years old stallions, 2; team horses, 6 pairs; of pleasure horses, 4 pairs; of three years old colts, 4; of two years old colts 11; of 1 year old colts, of buggy horses, 18; of saddle horses, 15; of mares and colts, 15; of bulls over two years, under two years, 1. Thorough-bred stock, cows, 5; of two years old heifers, 3; of one year old heifers, 5; of calves, 5; of grade oxen, 4 yoke; of three years old steers, 15; of two years old steers, 4 pairs; of one year old steers, 1 pair; of cows, 9; of two years old heifers, 6; of one year old heifers, 6; of calves, 4.

The display of sheep was excellent, and especially creditable to their owners, both in

regard to the number and quality of animals exhibited.

The grain department was inferior to that of last year, arising no doubt from the lateness of the spring, and the wetness of the latter part of summer; rust in many cases supervening, and causing a deficiency in the quality of the grain thus attacked.

But there was still a greater deficiency in the root and fruit departments, particularly in the latter, and this may have arisen from two causes; 1st. from the over-loading of the previous year, and 2nd. from the late frosts in the spring. Not a solitary peach was shown.

The manufacturing department compared favourably with those of former years. There was an excellent combined mower and reaper shown, which elicited much commendation from those versed in such implements, said implements being manufactured by Messrs. McDougall & Russell, Fort Erie.

The Ladies, as usual, did their duty in regard to the filling up of their department, and many of the articles exhibited by them shewed correctness of design and elegance of finish.

The directors further state that they appropriated the sum of \$50. of which sum only \$40 28 was expended, for the erection of a temporary building, to hold the products exhibited at the last show; the materials of said erection being available towards the construction of a more permanent building at some future time.

In conclusion, the directors express their gratitude for the support bestowed on their labours by a generous public, and hope that the same may be extended even in a greater degree to their successors in office.

A. R. SCHOLFIELD, *President*.

#### East Durham Agricultural Society.

This spirited Society held their Annual Meeting at the Town Hall, Port Hope, on the 16th ult., and concluded the proceedings of the day by partaking together of an excellent dinner, at which we are informed no intoxicating liquor was used, at Church's Hotel. The particular occasion of this friendly re-union was the presentation of an address, on the occasion of his retiring from office, to W. F. Allen, Esq., late President, and formerly Secretary of the Society, and who, we know, has been a most energetic and useful officer. Amongst the other invited guests were the Rev. Mr. Hunt, the Rev. Dr. Shortt, Messrs. John Wade, R. Hume, and A. Alcorn. After due justice had been done to the viands upon the table, the farewell address was presented, which, with the reply, we subjoin:

*To W. F. Allen, Esq., retiring President of the East Durham Agricultural Society.*

DEAR SIR,—It is with very great regret that the members of the East Durham Agricultural

Association have been made aware of your intention to leave the County, and that your business affairs require you to reside outside the limits of our Association, of which you have been, for the last seven years, a worthy and useful member.

We are proud to be able to say, that you commenced your career as an Agriculturist in connection with this Association, and that you have been treading in the footsteps of your father, who was for many years an eminently useful member of this community.

Agriculture is a noble employment. Men of all grades—some of them much distinguished for learning and refinement—after having employed their youth and early manhood in other pursuits, have devoted their declining years to Agriculture, believing it to be, of all occupations, the one best calculated to promote peace and domestic happiness.

It is pleasing to see young men of talent and education devoting themselves to this noble work. We hope that you will still be found in the ranks of the Agriculturist; and that your future life will be spent in carrying out those principles which you have advocated in the past.

We cannot allow you to retire from amongst us without offering you some mark of our esteem and regard.

Please accept this Address, as a token of respect from the Directors and members of East Durham Agricultural Association.

Signed on behalf of the Association,  
A. CHOATE, *President.*

Port Hope, January 16th, 1862.

#### MR. ALLEN'S REPLY.

I thank you for this generous expression of your esteem. I also thank you, Mr. President, for the kind manner in which you have alluded to the usefulness of my father as an Agriculturist. I am proud of being an Agriculturist, and, it gives me much pleasure to look back on my past connexion with the East Durham Agricultural Society, and I only regret that I have not brought greater ability to the furtherance of its interests. My energies thus far have been devoted to the interests of Agriculture; and although I have had flattering inducements held out to me to forsake this pursuit, still, I am determined to continue a farmer, believing it to be, as you express it, "the most noble employment we can engage in."

Please accept my warmest thanks for your kind wishes for my future prosperity and happiness, and I beg to remain, Your obedient servant,

W. F. ALLEN,

To the President, Directors, and Members of  
E. D. Agricultural Society.

#### Drainage.

We take from the *London Prototype* the following account of the trial of a new draining

plough invented by Mr. R. Robson of London Township, which, if it accomplishes all that is stated of it, may turn out a valuable implement:—

MR. ROBERT ROBSON'S DRAINING PLOUGH.—We were much gratified with the result of a visit paid the farm of Mr. Robert Robson, of London Township, on Monday, in company with Mr. John Carling, our city member. Having heard so much said of the properties of the draining plough, the effort of the inventive genius of Mr. Robson, we resolved to personally inspect the invention, and, certainly, at first sight, a person would naturally be led to smile at the novel appearance of this useful implement, mad up as it is in the most simple, unpretending, and in fact, entirely primitive build; but when placed behind two horses, and a careful ploughman disappoints the veriest sceptic in agricultural matters, and cuts a drain, which, for width and depth, truly marvellous, doing away with a large amount of manual labour, and consequently, expense. Every one acquainted with the nature of thorough draining will know the utility of the system, and successfully and perseveringly carried out. Smith of Deanston, Scotland, the world renowned plough-drafter, has given the farming community a criterion to judge by, in years past, of the wonderful success, as well as the advantages attending a perfect system of thorough draining. To him, we think in those modern times, is due to a large extent, the commendation for pushing this beneficial system of land culture to the very point of prosperity—and we all know he has reaped a rich reward, both as regards the benefits conferred upon the agricultural world, besides his own pecuniary advantages, which are handsome, and largely remunerative.

In Ireland, in 1843, we witnessed the excellent results and large profits which a large agriculturist reaped, after having for some years carefully copied Mr. Smith's mode of draining, coupled with subsoil ploughing; and now, in our neighboring London Township, we believe the same system may be adopted, and successfully carried out, with half the expense, time and labor, which had to be resorted to in the mode of a thing we have alluded to, if farmers will only adopt Robson's principle of thorough draining: and honourable trial. And on Monday last, our arrival at Mr. Robson's farm, we were surprised to see a number of intelligent and respectable gentlemen, farmers of course, who came to test the merits of the new farming implement, and give the people the result of their investigation. This, we believe, was done impartially, and with a desire to give the full of the soil and the inventor himself the advantage, if there were really any advantages in placing in the hands of the farmers a plough for draining purposes, calculated to lighten labor, save men's toil, and throw more of the benefit of it upon horses, while, as we have remarked, considerable economy is practised at the

time. The plough, which we observed for the first time upon the exhibition grounds, and, indeed, in concert with many others, smiled at, is, we repeat, a novelty in appearance, seems to be of the mediæval ages, and one would be more likely, when getting a first look of it to take up one of Wilkie's best axes, and "hack it down," with a fell sweep to the ground. Suffice it to say that it is formed of the roughest material, a simple piece of wood constructed in all points as a plough, *with two sides or mould boards*, which open up a drain three feet in width at the top, and thirty-two inches deep. A narrow spade, (much like that used for cutting turf,) is then taken with which the bottom of the drain is cut eight inches deep, and tapering on each side, about an inch and a-half at the bottom, and four and a-half inches wide at the top. Before this operation is commenced, we should remark that an ordinary plough precedes the draining plough, by running a furrow on each side, so as to prepare the ground for its reception. After the drain has been cut, a sod is cut with the operating plough, of four inches wide at the top, with one of its surfaces grassy; this is taken and placed by a man on the top of the water-course which has been made with the narrow spade, taking care to have the grassy side of the sod down, and when placed on the drain resembles such the slanting or oblique thrust of a bridge, or the key-stone of an arch, evidently locking the drain effectually, and although simple in appearance, apparently possessed of great durability, for Mr. Robson, after finishing the laying of the soil, placed one of the horses on the drain, made him walk over it, without the least detriment having been done. In cases where the soil is sandy, or quicksand, the inventor of the draining plough places a number of faggots, interlarded together, in the drain, with straw underneath and above, which he states, works remarkably well, and proves that the difficulties incident to land subject to slide, may be effectually removed away with, and a good substantial water-course secured for the carriage of the water.—The draining plough has been proved by calculation, able to do as much work per day as twenty-five men, with spades and shovels. Mr. Robson ploughed with his drainer two hundred and twenty-five feet, while five men dug during the same time, about fifteen yards, or fifty feet, of plough, it was remarked, doing the labor in much superior manner than that accomplished by the men.

In the matter of screened-gravel drains, we here state that the gravel is equally suitable for sewerage, and by computation Mr. Robson has ascertained that one bushel of gravel will fill fourteen feet of drain. As regards the probable cost of the drains, Mr. R. says that one man and a span of horses, (the latter working only two hours a day) can complete forty feet of draining in a day, and at this calculation, would not cost more than two dollars for ten rods or five cents per rod, the

lowest charge for making drains we have heard of in this fast age, and allowing all who are anxious to have well-drained farms the chance of making them at a price that "bangs Banagher." We strongly advise those who are in love with Mr. A. P. McDonald's theory of thorough draining to call on Mr. Robson, and after a trial of his scientific invention, which has been tested in various ways, they will have no reason in the future to cry out, "My land is too wet; I can't grow anything in it."

After the process of formation and closing of the drain was over, the gentlemen present adjourned to the hospitable home of Mr. Robson, where his health was proposed in a very flattering manner by Mr. Carling, with several well-timed remarks upon the success of his farming invention. It was then moved by Lionel E. Shipley, Esq., seconded by Wm. Balkwill, Esq., and

*Resolved*,—"That we, the undersigned, having been witnesses of the successful working of the thorough-draining plough, the invention of Mr. Robert Robson, of London Township, deem it a most useful auxiliary in farming operations, and cheerfully recommend it to the farmers of the County of Middlesex, and to the people of Canada generally, as a useful and suitable implement in agricultural pursuits, combining cheapness, economy and usefulness in the draining of land."—Carried.

Lionel E. Shipley, William Balkwill, John Beat- tie, Andrew Robson, Robert Williams, Lionel W. Shipley, Robert Waugh, John Lamb, John Bowman, Ogle Blair, John Calvert, Oliver Wilson, Hugh Kennedy, James Blair, John Eleback, Philip Rosser.

Geo. Robson, *Chairman*.

### Judging of Cattle.

At the last meeting of the Smithville Fat Cattle Show, Mr. Torr made in his speech one capital point:—"This was in denouncing the absurdity to which the use of the tape is now carried; and we quite agree with the speaker when he said that it not unfrequently tends more to destroy the correctness of a man's eye for form and general contour than of any absolute good. And yet how frequently do we find men, who should know better, rushing up to an animal that they barely look over, save for the purpose of throwing the measure round him? We were never inclined to believe much in a Judge whose best arguments for what he did were a knotted string and a pencil; and we hope the long-called-for rebuke from so able a Judge as Mr. Torr is himself, will teach others to rely more upon all the eye and hand can tell them as to form and character. Of course in some cases it might be as well to be armed with such precise information, like the carpenter under cross-examination, who, in answer to the

ques t w far he was from the prisoner when the assault occurred, replied in a moment, "Seven feet eight inches and three-quarters. I thought some fool or other might be asking the question, so I took out my two-foot rule and measured it."

**MINKS AS INSECT-CAT PERS.**—A correspondent of the Rural New-Yorker, who seems to make a business of raising minks for their fur, relates the following in regard to their catching grasshoppers and bee-moths:—"Two years ago last May, I caught seven young minks. I made a pen of boards near my bees, twelve feet square, and put them in it. About the first of July grass-hoppers would occasionally sail in, and they would jump and catch them very quick. It soon became sport for boys to catch grasshoppers and throw them on the side of the pen, to see the minks jump and catch them. Hearing the same jumping at night, I went out to see what was going on, and I found they were catching millers. The millers were so thick about my bees that I could catch about thirty or forty a night in a pan of buttermilk, and now I have no millers about my bees. My minks cannot climb a rough board fence four feet high. They have young once a year,—from five to eleven,—and before I take off their pelts I keep them in the dark for about one month, to make them darker than the wild ones."

## Horticultural.

### The New French Roses.

Scores of new roses are sent out by the French every year. Some of them, perhaps one in a dozen, prove valuable, and in a few years become popular, and their names are as familiar as "household-words"—like *Giant of Battles*, *La Reine*, *Caroline de Sansal*, &c.—but the remainder are forgotten in a few years. A correspondent of the London *Florist* who has made a sojourn among the rose-growers of the continent, names about sixty new varieties that are to be sent out this winter and next spring as candidates for public favor. He says:

"I thought that the best service I could render during my recent visit to France was to obtain such information upon the subject of the forthcoming roses as might gratify my own curiosity, and be somewhat of a guide to them. I have made the best use of my eyes and ears that I could; have visited Margottin, Verdier, Marest, Touvais, Troulliard, Portemer, &c.; have obtained lists of the new varieties, and, in fact, done my best to get together some information on the point, and the conclusion that I have come to is, that we are not to expect any very striking additions to our lists this season. There are some which promise well, but when I say that there are, I verily believe, nearly a hun-

dred new ones to come out, it will be seen how difficult is the task of selection, especially as one feels that under the most favorable circumstances not one-tenth of these will be retained in our lists; in such a case, one must rely more on the known characters of the vendors than on anything else. Men like Margottin and Marest will not willfully deceive; they may be mistaken but they regret it as much as the public when it is so. There was one matter in the cultivation of roses, which I heard from Troulliard, of Angers, which struck me forcibly as one likely to be of service to us, and this is to graft low on stocks of the Dog Rose, raised from *seeds*. However excellent the Manetti may be for strong, vigorous growing kinds, I think that no one can say that it is equally good, especially on strong soils, for the more delicate constitutioned kinds; for they, not having the power to receive the sap, are soon overpowered, the stock begins to throw up suckers, and the rose languishes and dies; while stocks of the Dog Rose taken from the hedges, are, on the other hand, generally so defective in root, that they answer badly for that purpose, but by sowing seed of the Dog Rose you obtain nice healthy stocks, with abundance of fibrous roots, not so vigorous in character, and giving a fine, healthy start to the rose; and is also more permanent than it is likely to be on the Manetti; it is, at any rate, worthy of the consideration of rose-growers, and I am not aware that it has yet been tried in England."

### Botanical Society of Kingston.

We observe that this valuable society has lately held its annual meeting for the election of officers. The following gentlemen were appointed for the ensuing year:—

PRESIDENT.—Pri cipal Leitch, D.D.

VICE-PRESIDENTS.—Prof. Williamson, LL.D.; Prof. Dickson, M.D.

#### COUNCIL.

Prof. Fowler, M.D.; W. G. Hinds, Esq.; Prof. Litchfield, M.D.; M. Flanagan, Esq.; Prof. Horatio Yates, M.D.; Wm. Ferguson, Esq.; J. Duff, Esq.; J. J. Burrowes, Esq.; Geo. Baxter, Esq.; Octavius Yates, M. D.; Thos. Briggs, Jr., Esq.; Professor Lavell, M.D.; Augustus Thibodo, Esq.; Rev. Prof. Weir, A.M.; John Watkins, Esq.; John Creighton, Esq.; Rev. Prof. Mowat; Arch. J. McDonald, Esq.; Recorder; J. Carruthers, Esq.; Hugh Fraser, Esq.; Jeremiah Meagher, Esq.; Hon. Alex. Campbell, M. L. C.

SECRETARY.—Prof. Lawson.

TREASURER.—Andrew Drummond, Esq.

#### CURATORS.

Mr. J. F. Ingersoll, Mr. John K. McMorin, Mr. Wm. B. Ferguson, Mr. John Bell, Mr. T. Drummond, Jr., B. A.

LIBRARIAN.—Mr. R. V. Rogers, B.A.

## The Dairy.

### Butter Making.

[The following statement is copied from the last number of the *Journal of the New York Agricultural Society*, and will throw some light on the mode of preparing the superior butter found in the Philadelphia Market]. Eds.

PHILADELPHIA, 10th mo., 21st, 1861.

*The process.*—After the milk is drawn from the cows it should be strained into pans properly arranged on a bench for the purpose, with a small quantity of fresh sour milk in each one, to hasten the raising of the cream, which should on all occasions be taken off from thirty to thirty six hours after being milked, it being found that, standing longer in a large dairy, more is lost by deteriorating the quality of the butter than is gained in quantity. When the cream is skimmed off of the milk into a large cream pot it should be put in the butter hole in the spring, and let stand one day, and then skim off, so as to remove any sour milk that may have settled from it to the bottom of the pot, and should be subsequently stirred every day until churned, to prevent rancidity from taking place on the top of the cream by too long standing, which is the main cause of all the rancid butter that is made. The cream should be churned twice in the week during the summer months, and all the year where there is a sufficient quantity to warrant it. The temperature of the cream and churn should be about forty-two degrees, so as to warrant the butter to come right, and in the proper length of time, which should be about thirty minutes. There is as much danger in having the butter come soft by over-churning as by the atmosphere being too hot. In order to regulate the temperature of the cream in the fall, winter and spring, should be set in a tub of hot water until it comes to the temperature above designated—the butter broken in the churn to the size of hazels and chestnuts. The buttermilk should be drawn off through a fine hair sieve from the vent of the churn, which should be about an inch deep. A sufficient quantity of spring water could then be put in, and a few revolutions of the churn, when it should be drawn off, and another quantity of spring water put in and allowed in the churn until gathered into a mass. The water should all then be drawn off and the butter cut into cracks, as it lays in the churn, to receive the salt, which should be a pint for fifty pounds, regulating below that, or above that, according to the quantity churned. The butter should then be tumbled in the churn until the salt is mixed with it, and it will then be taken out in ten or fifteen pounds, and pressed into pounds, ready for sponging, which could be done by having a sponge of proper

size enclosed in a linen cloth and passed over the lump, by pressure, to absorb the brine and moisture it contains, which should then be weighed and printed if intended for the market. The sponge should be frequently squeezed out of cold water as dry as possible during the sponging and weighing of fifty or one hundred pounds.

*Remarks.*—The buttermaker will see the advantage of this mode of salting and working butter over any other mode, and particularly of the lever or worker, as it is called, from the fact that less of it is exposed to a warm atmosphere at a time, as it must necessarily be where fifty or one hundred pounds are operated upon on a broad surface, making the butter soft and oily, which is detrimental to its quality, however carefully attended to, from the time the milk is taken from the cows. The above plan was perfected by experiment by me, and carried out for a succession of years, as thou knowest, with a success as to quality and sale of my butter not surpassed by any one at the time I was operating. Respectfully, &c.,

H. EUCHUS.

## The Poultry Yard.

### Spanish Fowls.

EDITORS OF THE CANADIAN AGRICULTURIST, —Gentlemen,—You copy in your last number under the head of "Profitable Poultry Keeping," a comparative estimate of several breeds of fowls from the *Journal of Horticulture*.—As the notice of one of these breeds is quite contrary to my experience, (I should rather say my wife's, as she is the chief lover and manager of the poultry,) I would guard your readers by being misled by such a statement.

I cannot pretend to give an opinion on the comparative profit of the different favourite breeds. We at first were contented with the common mixed kinds, which, with good management, answer very well, and are perhaps the hardiest. We tried the Cochin and did not like them, they are voracious eaters, which in a suburban abode, where food must be bought, is of consequence. They are always wanting to sit, are awkward nurses, and their flesh is coarse and inferior.

At length we obtained a fine and seemingly pure Spanish cock and hen. We continue to keep and admire them and their descendants, and from actual trial we say: good layers, steady sitters, kind nurses, eggs remarkably fine, flesh very good. We think the Spanish poultry somewhat more delicate than the common sort, requiring a comfortable house, and a little care; possibly the brood may be more difficult to rear than in some other varieties. I do not want to magnify their merits to the



discouragement of others, but having never had finer or more abundant eggs, and that even at the season when they are scarcest, I do not like to see them unjustly condemned, and should feel obliged by your allowing me to say what I have found them as a note on the article I have referred to.

H.

[Thanks to our correspondent for his interesting communication. We shall be obliged to any of our readers who may favour us with their views and experience on these matters. Eds.]

## Poultry.

*Concluded from Page 53.*

A very important essential in poultry keeping is a proper house. It is not at all necessary to be an expensive or fancy affair, but it must be comfortable, warm, and well ventilated. Heat is sometimes introduced by means of hot air pipes connected with some adjoining furnace; and small stoves are also used for heating. Earthen floors are preferred by many good managers to bricks, boards, or stones, and a quantity of fine sand should be laid down in a corner of the house, or under an adjoining shed, as this helps to preserve the poultry from insects, in consequence of their rolling in it, and using it as a sand-bath. The floor should also be thickly coated over with fine sand, when such can be procured, especially if it is formed of bricks, boards, or stones. The roosting perches are constructed in the form of a wide ladder, the frame in which they are inserted being set in a sloping position against the wall. The perches are placed at a foot apart and are from one and a half to two inches in diameter. "The value of low perching cannot but be known to most keepers of fine, large fowl, who are sure to break their breast-bone when coming down from high perching, and from which they scarcely ever recover." (Nolan). Boxes or baskets, set near the ground, and furnished with cut straw, must be provided as nests for laying and hatching, and the hatching nests should be placed, if possible, in a quiet place, apart from the other hens. Plenty of pure water is indispensable in a poultry-yard; the inside of the houses, perches, &c., ought to be whitewashed at least twice a year, and kept clean at all times.

**Ducks.**—The white Aylesbury is a large, fine, and valuable breed, of which the pale bill is a distinguishing point. The Rouen "resembles wild ducks in colour of plumage and bills. The larger they are the better"—and great size is characteristic of it—but no weight can compensate for faulty plumage, or green or leaden coloured bills in the ducks." The Rouen duck is an excellent layer. There are other breeds, but these are the most useful for ordinary purposes.

Duck eggs are generally set under a hen, the duck herself makes a good mother. Time of incubation is thirty days; being ten days longer than in the case of the hen's egg. The ducklings should be kept from water nine or ten days after being hatched, and their food should consist chiefly of soft, but at the same time nutritive matters; such as bar meal and water or milk, mixed thin, being a suitable food. Chopped egg—boiled hard for the purpose—with oatmeal, may also be given moderately. Ducks require little assistance in the way of feeding, if they are allowed to ramble through the fields, where they are of much service in picking up slugs and other insects; but if they are confined they must be regularly well fed on such food as we have mentioned in the case of fowls, and when fattening for use, it is recommended to mix treacle and chopped mutton fat with the barley meal, &c., upon which they are fed.

**The Goose.**—The common domestic goose is either of a white or gray color, the large white sort, called the Embden goose, being very superior. Still, the geese which are kept by the majority of ordinary farmers in the country are of a size—a very serious defect, for size is everything in geese; and, therefore the best breed cross with is the Toulouse, which possess great size, as well as other desirable qualities. "The prevailing colour is a blue gray, marked with brown bars; the head, neck (as far as the beginning of the breast), and the back of the neck as far as the shoulders, of a dark brown; breast is slaty blue; the belly is white, as under the surface of the tail; the bill is orange red, and the feet are flesh-coloured." (Nolan)

Geese are long-lived birds, and they do not reach their best as breeding stock until they are three or four years old. One gander is allowed to four or five geese, and if well fed, laying commences by the middle or end of January. Eleven eggs are a sufficient number to set under a goose, and the period of incubation is thirty days. Goose eggs are occasionally hatched under turkey hens, and common hens are also used for this purpose, but the latter will not hatch more than four goose eggs. The sitting geese must be regularly supplied with food, and their first food of the goslings may consist of bread soaked in milk, bran mixed with boiled potatoes, and some boiled vegetables,—cabbage, green peas, &c.—mixed with the food are very useful. The food must not be cold, but, at the same time, not too warm. If the weather is good, the goslings with their mother, may be turned out to grass field, when the former are ten days fortnight old; but if the weather is cold or they should be confined to a shed, and carefully fed. A good run at grass is of great service in fact, indispensable for young geese. Therefore, we generally find that numbers of them are reared near commons, or similar tract of ground; but when intended for an early market

They must be well fed in addition to what they get up. Boiled potatoes, or turnips, mixed with bran, barley meal, or oatmeal, and given in slightly warm state, will hasten the fattening process. Boiled rice is also excellent food, and with moderate attention the young geese may be made quite ready for use by the time they are three months old. Generally, however, they are kept over until the crops are reaped and carted, when a run on the stubble puts them in good condition, which may be still further improved by a subsequent confinement in a house for a fortnight or three weeks, during which time they are liberally fed on oatmeal, peas, beans, rye, or Indian corn meal, all mixed up with boiled potatoes or swedes. They must be supplied with water, gravel, and plenty of clean straw.

**THE TURKEY.**—This class of poultry is one of the most valuable, and, from the want of success which sometimes attends the rearing of them, they are often considered the most troublesome. The Cambridge breed is larger than any other, of a white and black color, sometimes gray, and occasionally mixed with copper coloured spots. The American turkey has a bright, metallic blue, and has more of the wild nature than any other variety.

Thirteen eggs are a sufficient number to set under a turkey hen, the period of incubation being from twenty-eight to thirty-one days. During incubation the hen must be as little disturbed with as possible, beyond what is necessary in giving her food and drink. When the chickens are hatched, leave them alone without meddling, do not offer them food of any kind for the first twelve hours, at least. "If you are foolish enough to cram pepper-corns down their throats to warm them; or to dip them, either over heels, or the legs only, into cold water; make them hardy; or to give them ale or beer to strengthen them; or to comply with the foolish notions of the old wives' senseless traditions, which really seem as if they were intended to prevent the rearing of turkeys—you must take the consequences. Many will die—some may survive; of these you may boast as specimens of successful nursing. But does the wild turkey, in any other bird in a state of nature, commit such perposterous outrages upon her infant brood?"—(Art poultry, *Morton's Cyclopaedia*)

The first food should be hard boiled egg, chopped fine, mixed with chopped lettuce, the green of spring onions, or chives. "Green food in abundance turkey-chicks must have, intermingled with their more nutritious diet." Moderate quantities of boiled rice and oatmeal, or barley meal, mixed into dough, may also be given to them. If you have a very old, rich, rotten dung-heap, spent hotbed, full of little worms, wood-lice, &c., &c., let the chicks have three or four handfuls of that also in the course of the day. Whatever you give them, it is of no use setting it down and leaving them to feed themselves;

you must stay and see them eat it, and watch that each chick takes its share. For if, by any chance, they have been neglected for an hour or two, and have fasted too long, they will then sulk, and perhaps refuse to eat at all. In this case they must be gently crammed, or they will surely not be reared; but it is a most blameable fault in the poultry-keeper ever to let his or her charge fall into this low, moribund state. The great secret in rearing turkeys is to be constantly tempting them with a variety of food; every half hour is not at all too often. They will do with somewhat less attention; but this untiring officiousness towards them quite pays; their little stomachs should always be full; their growth is most rapid, and, indeed, enormous, if we compare the proportions of a new hatched chick and a bird at Christmas fit for the spit, and weighing perhaps 15 to 16 pounds. Their growth must be unceasingly sustained as well as liberally supported; for if it be not, it is not the mere difference between fine and undersized birds, which the lazy and niggardly breeder will have to suffer from, but not half the brood, perhaps not one of them, will ever be reared in the 'shift-for-yourself' system. . . . As the chicks advance in growth, their feeding need not be quite so frequent, but it must be equally profuse; let them have plenty of green food, as well as of corn, wetted barley meal, boiled rice, and insects. A well-hearted lettuce, taken in one hand and shred to them with a knife in the other, is excellent; she next time you go to look at them set a bunch of the thinnings of the onion-bed be served out to them in the same way. Never appear before them without some present that they are likely to accept. So you will best make sure of attaining your object—a handsome flock in November. . . . The critical times with turkeys is when they are about the size of partridges, or before; their heads, which had hitherto been clothed with down alone, now began gradually to be covered with fleshy tubercles; the larger feathers, those of the tail especially, are making rapid growth, which is a trying drain upon the strength of the bird. You may, if you please, give them carraway seeds, rice; or other simple tonics; but the only efficient medicine is generous diet, and plenty of it, and that by itself will be quite sufficient."

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## Miscellaneous.

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### The Cerealia.—A Standing Miracle.

In treating of the Cerealia, or corn-plants, as special witnesses for God in relation to man, we pass by the fact, albeit important, that by nature man has no knowledge of his proper food—no instincts even to guide him in the choice of it; and that, had he been left originally to his own resources in respect of it, as the lower ani-

mals are, he would without doubt have perished of hunger or of poison, from eating at random of some deadly thing, or through sheer ignorance of wherewithal to fill his belly. And we pass by also a vast number of other, relative facts (their name is legion),—such as the use of *fire* in the preparation of man's food, including the whole art of cookery (simple or complex) as forming a part of the "conditions of his existence;" to say nothing of the necessary connexion that subsists between man's sustentation and man's own head and hands, or between it and his domestic and social relations; all which, bearing directly on the matter now in hand, serve to show that, in respect of that which cometh upon him daily—the care of his fleshy tenement—nature, on the one hand, has in a great measure left him out of her reckoning, while, on the other, God has in an especial manner been "mindful of," and has "visited" him.

All that we purpose doing is, to direct attention to the cerealia as a class of vegetable productions, which, as neither *natural* plants themselves, nor growing *naturally* in any part of the world, demonstrate by facts within themselves—facts which our modern science has ascertained, or has verified, and which may be seen and read of all men, that they must of necessity have been produced *miraculously*; and which furnish, moreover, with no tradition as to this, nor any specific reference to them in this relation by Moses, a proof the most striking that can well be imagined, and all the stronger that it is *indirect*, of a special exercise of the Creator's care for His creature man.

The cerealia, which comprises wheat, rye, barley, oats, maize, rice and millet, are beyond all doubt man's proper food—the food proper for civilized man—the possession and the use of which leave him free to devote his energies to the advancement of his being, the multiplication of his race, and the accomplishment of the main object of his existence in the world. Without corn, living on wild roots, or by hunting or fishing, and precariously, or from hand to mouth man is everywhere a savage and a cannibal—improvident, bestial, incapable of taking a single step towards a higher or a better condition. Animal food, indeed, civilized man eats, and was intended, doubtless, to eat; but not his brother's flesh. Such as it is,—beef, mutton, and the like—it comes to him remotely of a plentitude in corn; of the leisure for thought which this affords him; of the habits which tillage engenders; and in many ways besides. Yet corn is his staple food.

Comprised in the great natural family of *grasses*, the cerealia themselves are—all of them—*unnatural* species of this family! Their natural state, because their constant or presistent state—that in which alone they can be cultivated or will grow (unless they be *abused* by man),—and in which alone they are of any value

to him, is one which the botanist designates *normal*; the gardener, *monstrous*. And upon this central fact in their history, there cluster a number of other singular facts, all of which more or less, cause them to stand out upon every other kind of plant, invest them with a character altogether special, and, when fairly looked at, are seen to be plain and unmistakable "*marks of God.*"

2. Let it be noted, first all, as to this condition of *monstrosity*, that, as of holding of other kinds of plants, it is one which is *occasional* only, or *accidental* and *transient*, which can be kept up only by careful cultivation, and which continually tends, notwithstanding, to revert back to the natural and primitive condition. With the cereals on the contrary, this abnormal condition is manifestly *their* primitive or natural, and it is, moreover, their *abiding* state. They have no tendency to degenerate, or to assume a lower, and, relatively to other plants, a more natural grade.

2. Man, indeed may *degrade* them. By treatment of them of his own devising, steadily persevere in, but attended with some trouble to himself, because requiring several years for the accomplishment of the end aimed at, he can reduce them to the condition of a perfectly natural yet absolutely worthless grass. To understand how this may be done, one or two things may be premised. *Annuals* naturally, bearing seed of such a kind (so monstrous and so large, and withal in such abundance) as draws towards itself, or the ripening, all the available energies of the plant, they form no buds at the root (they have in fact, no surplus vigor during the ripening, to form any) whence new plants might spring up the following year. Therefore, their seed doth ripen they die, or rather are cut down in its turn, and then they *die out*, root and branch. They are *annuals of necessity*. They die of the exhaustion of seeding. They may be said, to apply an allusion of DeCandolle's, to perish in *child bed*. The natural grasses, however, they are *perennial*—the common grass of the field bear both seeds and buds, and they bring buds to maturity. Doing this they spring up year by year spontaneously from the buds they form and they thus *multiply* as well as thus *prepopulate* themselves, covering the ground as with carpet, and spreading over it a table of plenty for the cattle that feed on it, and that tread and repose upon it; and for whom, as they can neither sow nor reap nor gather into barns, to make themselves a bed to lie down on and sleep, the Creator thus provides.

Differing thus widely from the natural grasses, their congeners—differing from them, as we have seen, at this that they bear seed of such a sort, demands for the ripening of it, and exhaustion of their inherent vigour, and makes them *annuals*.—the cerealia may nevertheless, by man's industry, be converted in *perennials*. It is done by

debarring them from ripening their seed. Cutting off the ear, as the corn plant comes in flower, and so hindering it from seeding, the plant, thus treated, will form a bud at its root, and from this bud it will spring up again the following year. If now left to itself, this second year, it will flower and bear fruit. Yet, let it be carefully observed, neither will the fruit have the quality, nor the plant itself the character, which are natural to them. Both the plant and its seed will to a certain extent, have been degraded by the process.

But if again, this second time, the plant is prevented from seeding, by being again denuded of its flower, it will as before, put forth a bud at its root, and spring up the third year. And if year by year this process be repeated, then in the course of ten or twelve years (so it has been found by experiment), the plant will be reduced, bit by bit it will have been degraded, to the condition of a *naturally perennial grass*, bearing a seed which is good for nothing.

3. Thus degraded by the cunning craft of man, then another fact demands attention, namely, this, that by no care or skill of husbandry can man restore the plant to its pristine state. He cannot bring it back to the condition in which he found it—the state in which God made it and gave it to man. It will remain what man has made it, a wild and worthless grass, perennial indeed intrinsically, yet, vital, destined ere long, having no pith or stamina, “no root in itself,” to give way and disappear before the wild and natural grass. A thing of man, it shall not be allowed an abiding place in the world, to breed confusion in God’s own creation. Widely different in man’s power over other other plants, wild or cultivated, cultivated by himself, he may raise them above their wild state; it is the business of the gardener to do so; and so, in making them abnormal, he may render them highly useful to himself as food. At this done, he must keep them in that state by his own care, intermitting which they will lapse back into their wild state; or thus cultivated, made abnormal by himself, he may at his pleasure let them become wild, and then bring them up again to their cultivated state. Man, however cannot thus play fast and loose with the cerealia. A strange law it is, surely, that to which alone of all plants, the Creator has subjected His own *specially artificial* plant, the cerealia. Strange that with them man may not intermeddle as he will! “*Nemo me impune lacessit*,” is true of them in a divine sense. Man may not degrade them but at his peril, the forfeiture beyond regain of his staff of life.

4. Unknown, then, not growing anywhere as wild plants, are as mere grasses, which the botanist may point to, and which he may describe, as *types* and as the native *habitats* of the cultivated cereals, there is yet this further to be noted of them, namely, that they grow nowhere

*spontaneously* or of their own accord. They do not sow themselves, and so spread themselves by their seed over the earth, and to man’s vexation the thistle does, and as do other annuals. Left to themselves, they die out, disappear, and become extinct. Of this, tall and strong of stem and vigorous though they be, one cause is, that perennial plants of all sorts, weeds, thistles, the common grasses, “external agents which they are too weak to resist,” choke and supplant them.

5. The final cause, however, or the reason of the peculiarity now adverted to, as attaching to the cerealia, is to be found in the one appointed condition of their growth, a condition peculiar to them. “*In the sweat of thy face shalt thou eat bread*,” we have the divine expression of this condition, if, indeed in this other, “*Thorns and thistles shall ground bring forth to thee*,” we have not also the divine explanation of the fact that they will not grow spontaneously. Made expressly for man, given directly into his hands by God, man has himself been put in trust, for his own behoof, of their life and growth. “Behold, I have given you every herb bearing seed (seeding seed) which is upon the face of all the earth; to you it shall be meat,”—a kind widely different, so far, from the “green herb” which He gave for meat to every beast of the earth; (compare Gen. i. 29 with Gen. i. 30). Whether, if man had abode in the state of innocency in which he was created, thorns and thistles had not been, or the cereals had grown otherwise than they do, we are not informed, nor have we any data to go upon relative thereto. But now they are his for his meat on this one condition, that he sow them with his own hand in ground which his own hands have tilled; and such they have been in all his history that appears. “*In the sweat of thy face shalt thou eat bread*,” were the words spoken to him with reference to them after his fall—words true to this day—and scarcely uttered it would seem, with the addition, that “in sorrow” he should eat of that bread, when the Lord sent him forth from the garden of Eden to till the ground.

To sum up. Of the facts as to cerealia, this is the substance:—Cultivated varieties naturally, abnormal, monstrous states of some unknown and no where existing species of natural grasses (so the botanist, in words odd enough, gives expression to the fact),—they do not, as do the cultivated varieties of other natural plants, tend to revert back to their wild state, and thereby become, to man at least, and as regards his food, worthless. Such as they are essentially, in that

\* “Cultivated varieties of some unknown species, perpetuated as races.” “Wheat is an abnormal state of some plant.” “We are at a loss to know the original types and species.”—BALFOUR’S *Class Book of Botany*, p. 708. “The native countries of our more important cereals, or corn-producing plants, are altogether unknown.”—(BENTLEY’S *Manual of Botany*, 1861, p. 697.) “The corn-plants, such as they are found under cultivation, do not grow wild in any part of the world.”—(KING’S *Food of Man*, vol. i. p. 22.)

state they abide permanently. Again, bearing seed only, bearing no buds, they are strictly annual plants, growing up year by year from seed, and growing in no other way. Yet, withal, they do not grow, as do other annuals, of their own accord, or by the natural dispersion and germination of their seed. Cast on themselves, left to nature, they quickly disappear before the perennial wild plants and become extinct. The one condition of their permanency in the world; of their diffusion; of their growth in quantities adequate for man's needs,—a condition of existence, as we have said, peculiar to them, is, that they be sown of man in ground carefully prepared by him for them beforehand and duly fitted to receive them.

Can it be that any one, duly reflecting on the facts now stated in regard to the cerealia, should fail to see—*first*, that nature never could have provided or have preserved these plants for man; and, *secondly*, supposing as we must, the cerealia and man to have been coeval, that if man had been himself beholden to nature *alone* for what he is,—if, under her, he were and had been the *sole* architect of his fortunes in the world, the cerealia must have passed away and been lost to him, irrevocably and forever, long before he could have raised himself from a state of nature.

This being the case, the character of the "conditions of existence" of the cereals being such as we have affirmed, and man's natural ignorance of their use and value being such as the history of the savage tribes demonstrates,† it surely needs no argument to prove, that not only must these plants have been *speciully* created by God for man, and created, too, at the time when he brought man into the world, but that man himself must have been *directly taught* of God, as well as the use and exceeding value of them, as the way to grow them. The history given us in the book of Genesis, of their relation to man, and man's relation to them, as is that of the Creator's converse with man respecting both, is in fact such a history, short as it is, as our modern science, if true to herself, must needs accept as *genuine*. No account of the matter other than given by Moses, will explain the known facts of the case. Had God not specially created the cerealia, nature never would have produced them. Had God not said to man, "Behold, to you have I given them for meat," man never would have *discovered* while yet he had them, their use as food. Had God not sent

man forth to till the ground, acquaint'ing him<sup>t</sup> thus only, even to the sweat of his face would the cerealia grow, there would at this present be no corn in the world.

Nay, but for this, there would have been corn in Egypt, 3500 years ago, when God, of a purpose, "broke the whole staff of bread," a "famine was all over the face of the earth;"<sup>a</sup> when, nevertheless, of His great mercy—for His mercy endureth forever—He sent a man, or Joseph (sold to be a bond servant) beforehand into Egypt, who forewarned of Him, gather up all the food of seven years of plenty which were in the land, laying up in the cities the food of the field which was round about every city, and who, when the evil days came, and the dearth was in all lands, and was sore and grievous, opened all the store-houses, and sold corn to the Egyptians, and to all countries which came into Egypt to him for to buy thereof: time when Israel (in whose loins lay the promise seed, the desire of all nations), that he might *not die but live*, also came into Egypt, and Jacob sojourned in the land of Ham.

A time it was, when making His own cerealia or one of them, namely wheat, the occasion, God turned the current of human affairs into a channel altogether new, making also Egypt the cradle and the wisdom of the Egyptians the school, in which to raise up and to rear and civilize the children of Jacob, his chosen; while yet, by signs and wonders, *miracles*, which wrought among them, He made known to them, and to the Egyptians themselves no less—a people civilized were always slow at heart to believe, that verily there is a God that ruleth in the earth, the Lord of Heaven and earth, and that this God is a Lord.

And these times, and the wondrous things that were done during them, have descended even to us. We have heard with our ears and our fathers have told us, how, aforesaid in Egypt, God, by the hand of Joseph, saved man from perishing from famine, as once he perished by water; and how, beginning therewith and thence, he opened a chapter in human history which is not yet finished. And if now, in these days, His strange work had ceased, and we see no signs, wonders visibly attesting His presence and His agency in the world, it is not as if they had been; "They have left behind them a way which still bears us along with it." Yet even as it is, as day by day we eat our bread with cheerfulness and singleness of heart, giving thanks, we may see on that same bread, if we will but look, the impress of a *miracle*, and an attestation of a *providence*, both still in operation around us. And if so,—then, in this sense of *Real Presence* of God in our common bread, we shall feel it to be but a small demand on our reason to believe (to single out of those early transactions) that by the space of forty years in the wilderness, wherein nothing

† "When some European missionaries introduced into New Zealand the culture of wheat, telling the Maories that bread is made of it, they were rejoiced, for bread, in the form of ship-biscuit, they had often tasted and much relished. But when the corn was tall, they dug some of it up, expecting to find eatable roots; and when they found only fibres, they thought the missionaries were making game of them. . . . The Maories had derived all their vegetable food from roots; and therefore naturally supposed bread to be made of roots. That little hard seeds were to be ground (a process they had never seen, or imagined), and the powder made into a paste with water, and then baked was what could never have occurred to them."—ARCHBISHOP WHATELY, *Lessons on Mind*, p. 113.

that man could eat, God miraculously fed chosen people with manna; believing which, may well believe also all else that we are, and may read for ourselves in His blessed word, as to the "wondrous works done by Him the land of Ham, and the terrible things by Red Sea," in behalf of a people whom He loved, and with whom were bound up His purposes of mercy to the whole family of man.—*Edwards.*

ALEXANDER HARVEY.

### Scientific Jottings.

the relations which exist between the natural sciences are, perhaps, greater than at first sight appear: it is only after having made oneself somewhat familiar with most of the separations of physics, &c., that one is able to form an idea how closely they are related to one another, and more strictly called "natural sciences," a chain of relationship connecting the whole, so that it is difficult to have even a good popular account of the one, without some knowledge, however slight, of the others. As an acquaintance with these subjects is considered necessary to a man of a liberal education, and as the taste of the public is inclining so much in that direction now-a-days, it may not be uninteresting to take a short glance at the connection existing individually and collectively, between geology, mineralogy, chemistry, crystallography, and zoology, (both animal and vegetable) and in as clear and succinct a style as possible to impress upon the reader of any of these divisions of natural science, that he should not, through any inclination towards one particular department, deprive himself of the pleasure of its application to the others; and, since *application* is the whole use of practical science, that he should neglect no opportunity of bringing his knowledge of one to increase that of the others.

It is that wide and interesting study, geology, for instance, its study, however useful, without great expounder paleontology, would be one of the tamest and most uninteresting, and its practical application nothing but the work of a dog or deliver, save for the small light that is thrown upon it by the minerals which might meet, and which of themselves would have little value but for the rigid chemical and crystallographic laws to which they are subject, paleontology itself would be useless and guess-work—you might have piles of shells, and slabs of fossil reptiles and animals which would surpass those in the British Museum, and had you not zoology to identify your specimens, and comparative anatomy to correlate their structures, you would be simply in the dark as regards the great problem of geology, the history of life on the globe.

Even the most trivial and apparently despicable instances relating to animal life should not

be passed over heedlessly when you come to apply your mind to the great problems which will be laid before you; and the very best exercises to which the young student in geology can apply himself are the works of the most eminent labourer in this field of science—Professor Owen. He will see there that the work he has before him is not that which a young lady would adopt to pass away her time, but something like reality, which will require the whole of his energies, and good will to boot. Inferior, certainly to the remains of animal life, but still affording an immense amount of information as to the former condition of the world, both as to climatology and structure, the beds of fossil plants and trees require to be studied with even more attention, inasmuch as there is less known about them, and that little requires to be well improved before anything like a definite classification of the flora and fauna can be arrived at. Of course this is the highest perfection of botany, and on which the most eminent naturalists have been, and are engaged. Thus a very fair botanical range is to be attained, and will repay the trouble of gaining it, without fear of limitation as to the number and description of specimens.

Zoology and botany being generally studied together, each will contrast well with the other, and render the somewhat tedious labor, an agreeable recreation. The other ally of geology before mentioned, namely, mineralogy, is only another name for applied chemistry; and some of the nicest and most difficult operations in chemical analysis must be performed before we can tell the name of a mineral, which, perhaps, to all appearance is the same as one of our every day friends; besides, the subject of mineralogy in its present rather crude state is one which by itself will be found highly interesting, as in it every one can indulge his fancy on certain points which are not very definitely arranged, and in which speculations he may, by attention and study, both theoretical and practical, effect something which may really advance one of the most attractive subjects in nature.

The grouping of the various elements of minerals into their proper formulæ gives occupation to heads which in point of ability are second to none; while not one of those men whose names will be seen in every book on mineralogy could tell the composition of even the simplest granite which we kick along the road were it not for the assistance of a few agents and simple manipulative operations. Chemistry is so wide a subject, it would be out of our power here even to hint at even the heads of its many relations; but from what has been said above, it may be supposed that the study of chemistry is absolutely necessary to one who wishes to have an intimate acquaintance with the crust of the earth; and the advantages to be gained in every day life from an intimacy with chemical phenomena can only be appreciated by those who have received its benefits.

Physics, including in its wide range electrical and magnetical disturbances, changes and appearances, with the theory of heat and meteorology in their relations to chemistry, are most marked and intimate; a thorough knowledge of either demanding a fair knowledge of the other, some of the most fundamental principles in the former being totally inexplicable without the assistance of the latter, and *vice versa*.

From the very short sketch above given of a few of the relations of the natural sciences, it is evident that a subject so wide and so respectively intimate in relations should be pursued with a view to the ultimate end—an equal knowledge of them all.—*Irish Farmer's Gazette*.

REMINISCENCES OF SMITHFIELD.—About 1100, Smithfield was little better than a swampy meadow, where certain smiths and armourers had set up their shops and forges, on which account it early became a place of considerable resort; but, shortly after, Henry I. granted a charter for a Priory of Black Canons, under the guardianship of St. Bartholome. It became yet farther frequented when Henry II. permitted the monks to hold a fair, for three days annually, which ultimately grew into an important commercial gathering, as well as the occasion of general festivity. To the fun and frolic of the fair we may make allusion hereafter, but shall at present confine ourselves to the more serious incidents of the Smithfield chronicle. The open space afforded here to the Londoners was, for several centuries, used by them, in common with Finsbury-fields, for archery and athletic sports generally. Nearly all the Court military holidays were held here. Scarcely a tilt, joust, or tournament came off in any other quarter of the town, for it pleased the citizens to witness such scenes, and their presence made them more impressive. Appeals to the judgment of God were often decided here; and the ordeal by fire and water was of daily occurrence, as well as the duel, or kamp fight of the Saxons. We have alluded to the great Edward's presence here, after the victory of Cressy; and, in 1374, when he had fallen into "second childishness," though only in his sixty-second year, insatuated by the charms of Alice Pierce, he brought her hither in a splendid open car, sitting by her side; and calling her the "Lady of the Sun," he conducted her to the lists, followed by a train of knights, each leading by the bridle a beautiful palfrey, mounted by a gaily dressed dameel. This festival lasted seven whole days, and, according to the annalists, was marked by the most profligate expense. Here, too, his grandson, Richard II., held an unusually magnificent tournament, early in his reign. "There issued out of the Tower of London," says Froissart, "first, threescore coursers, apparelled for the jousts, and on every one a squire of honour, riding at a soft pace; then issued out threescore ladies of honour, mounted on fair palfreys, and

every lady led a knight by a chain of which knights were apparelled to joust." tainly the dissipation of those early time partly rendered excusable by a spirit of gall and unse fishness, The gentry of the land even the merchants and workers of London the great towns, were all deeply imbued love of warlike exercises, not unmixed chivalrous generosity which made Englishriors the admiration of the world. We only refer, as a proof of this, to the conduct the Black Prince to his prisoner, King Jo City Press.

SHOES.—It is amazing the misery thereof of civilization endure in and from there: Nobody is ever, as they should be, comforted at once in them; they hope in the long-run after much agony, and when they are done make them fit, especially if they can get once well wet, so that the mighty knob of big toe may adjust itself and be at ease. My part, if I were rich, I would advertise clean wholesome man, whose foot was of my size, and I would make him wear my till I could put them on, and not know it them. Why is all this? Why do you every man's and woman's feet so out of all? Why are their corns, with their miserable malefactions? why the virulence and unwholesomeness of those that are 'soft'? Why do nails grow in and sometimes be torn right off? Why are shoes so dear? All be the makers and users of shoes have not common sense, and common reverence for God's works enough to study the shape and manner of that wonderful pivot on which we tread progress. Because Fashion—that demon saw dressed in her own crinolines, in bad a man's old hat, and trailing petticoats with her, (for she must be *her*) waist with a circle of nails with the points inward, any other of the small torments, mischievous absurdities she destroys and makes fool with,—whom, I say, I wish I saw drummed, blazed and shrieking out of the —because this contemptible slave which sneers over her makers, says the shoe maker, elegant, must be so and so, the beautiful foot must be crushed into it, and human must limp along Princess Street, and a life natty and wretched. It makes me when I think of all this.—*Dr. John Bru*

THE CAT AND SPARROW.—A cat and a sparrow, and was about to devour it, the sparrow said: "No gentleman eats and washes his face." The cat, struck with mark, set the sparrow down, and began to wash his face with his paw, but the sparrow away. This vexed puss extremely, and said, "As long as I live, I will first eat and wash my face afterwards," which all cats do to this

NOT A BAD MISTAKE.—We have seen some of the most typographical errors in our day and generation, but seldom any more absurd than the following. An editor, wanting a line to fill up a column, gave:

"Shoot Folly as she flies."—POPE.

setting up the above, the printer had it thus:

"Shoot Polly as she flies.—POP!"

### International Exhibition, London, 1862.

THE Commissioners for Canada at the INTERNATIONAL EXHIBITION of 1862, give notice to all parties desirous of exhibiting Canadian products, whether application has been already made for the exhibition of the same or not, that such articles may be sent in for examination and approval to the following places, at a certain time between the TENTH DAY of FEBRUARY next, and the undermentioned dates,

**CANADA WEST.**—London, 18th February; Hamilton, 20th February; Toronto, 24th February; Kingston, 25th February, and Ottawa, 28th February.

**CANADA EAST.**—Quebec, 14th February; Three Rivers, 18th February; St. Hyacinthe, 22nd February; Sherbrooke, 25th February next; and Montreal, 3rd and 4th March next. Articles will be received and stored at the depots of the Grand Trunk Railway Company at London, Toronto, Kingston, Quebec, Point St. Charles, Sherbrooke and St. Hyacinthe.

The Commissioners will begin their examinations at 10 o'clock, A. M., of each day named. Exhibiting exhibitors must deliver the articles for exhibition at the above named places, free of charge. Should they not be approved, the Grand Trunk Railway will return them free of charge, to any depot on their line from which they have been sent.

Parties sending in Grain or Woods are requested to transmit a certificate, stating the species and varieties, and where grown. Woods should be sent of the usual dimensions for commerce, and Her Majesty's Commissioners have expressed a desire that they be shown in planks three inches thick, showing the sap on both sides, or in scantling, and accompanied, wherever practicable, by twigs with leaves or flowers.

Parties desirous of further information, may apply to the following: concerning Minerals and Specimens of Economic Geology, to Sir W. E. Logan, Montreal; concerning products of the Forests and Minerals, to Dr. Tache, Quebec, or Dr. Hurlburt, Montreal; concerning Agricultural produce, to Mr. L. V. Sicotte, St. Hyacinthe, and Col. G. M. Brown, Toronto concerning articles of Canadian Manufacture, to Dr. Beatty, Cobourg, or the Secretary, Montreal, to whom also, communications on all other business of the Commission are to be addressed.

R. CHAMBERLIN, Com'r, Secretary.  
London, December 12, 1861.

### BOARD OF AGRICULTURE.

THE Office of the Board of Agriculture has been removed to 188 King Street West, a few doors from the late location adjoining the Government House. Agriculturists and any others who may be so disposed are invited to call and examine the Library, &c., when convenient.

HUGH C. THOMSON,  
Secretary.

Toronto, 1861.

### Notice of Co-Partnership.

THE Undersigned have entered into Partnership as Seedsmen and dealers in all kinds of Agricultural and Horticultural Implements, under the firm of James Fleming & Co.

JAMES FLEMING,  
GEORGE W. BUCKLAND.

### NOTICE.

JAMES FLEMING & CO., Seedsmen to the Agricultural Association of Upper Canada, will carry on the above business, wholesale and Retail, at 126 Yonge-st., 4 doors North of Adelaide-street, until next July, when they will remove to the new Agricultural Hall, at the corner of Queen and Yonge-streets.

JAMES FLEMING will continue the business of Retail Seedsmen and Florist at his old stand, 350 Yonge-street.

Toronto, January 1st, 1861.

### FOR SALE.

AT

WOODHILL, WATERDOWN P. O.

MR. FERGUSSON expects to have several pure Durham bull calves to dispose of next Spring, 1862, not intending to raise any this season. These calves will be all of the well known DUCHESS tribe, and will be put on the G. W. R. R. at six weeks old for eighty dollars each.

N. B.—First come, first served.

Waterdown, Nov. 14, 1861.

4-t.

### THOROUGH BRED STOCK FOR SALE.

THE SUBSCRIBER has for Sale Durham and Galloway Cattle, male and female. Leicester, Cotswold, and Lincolnshire Sheep, male and female.

January 1, 1862.

JOHN SNELL,

at

Edmonton, P. O., C. W.



**VETERINARY SURGEON.**

**A**NDREW SMITH, Licentiate of the Edinburgh Veterinary College, and by appointment, Veterinary Surgeon to the Board of Agriculture of Upper Canada, respectfully announces that he has obtained those stables and part of the premises heretofore occupied by John Worthington, Esq., situated' corner of Bay and Temperance streets, and which are being fitted up as a *Veterinary Infirmary*.

Medicines for Horses and Cattle always on hand. Horses examined as to soundness, &c.

Veterinary Establishment, Corner of Bay and Temperance Sts.

Toronto, January 22nd, 1862.

**FOR SALE.**

**A FEW PURE-BRED SOUTH-DOWN RAMS** and Ewe Lambs, from

**IMPORTED STOCK,**

Selected from the Best Flock-dealers in Dorset, Wilts, and Hants.

The Subscriber will Warrant these Lambs to produce as much Wool and Mutton, and of equal Quality, as those of Jonas Webb, or any other Flock of the same kind and number in England.

JOHN SPENCER,  
Brooklin, Post Office,  
Ontario County C. W.

Oct. 12th, 1861.

**THE**

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**A** LOT of thorough bred **ESSEX Pigs**,—bred from recently imported 1st prize animals and who have this season taken premiums at both Township, County, and Provincial Exhibition.

JAMES COWAN.  
Clochmber, Galt P. O., Oct. 19, 1861.

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**Editors**—Professor Buckland, of University College, Toronto, and Hugh C. Thomson, Secretary of the Board of Agriculture, Toronto, whom all orders and remittances are to be addressed.

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