

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- | | |
|--|--|
| <input type="checkbox"/> Coloured covers/ Couverture de couleur | <input type="checkbox"/> Coloured pages/ Pages de couleur |
| <input type="checkbox"/> Covers damaged/ Couverture endommagée | <input type="checkbox"/> Pages damaged/ Pages endommagées |
| <input type="checkbox"/> Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée | <input type="checkbox"/> Pages restored and/or laminated/ Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> Cover title missing/ Le titre de couverture manque | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> Coloured maps/ Cartes géographiques en couleur | <input type="checkbox"/> Pages detached/ Pages détachées |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> Showthrough/ Transparence |
| <input type="checkbox"/> Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> Quality of print varies/ Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> Bound with other material/ Relié avec d'autres documents | <input type="checkbox"/> Includes supplementary material/ Comprend du matériel supplémentaire |
| <input checked="" type="checkbox"/> Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure | <input type="checkbox"/> Only edition available/ Seule édition disponible |
| <input type="checkbox"/> Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées. | <input type="checkbox"/> Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible. |
| <input checked="" type="checkbox"/> Additional comments:/ Commentaires supplémentaires: | Continuous pagination. |

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 10X | 12X | 14X | 16X | 18X | 20X | 22X | 24X | 26X | 28X | 30X | 32X |
| | | | | | ✓ | | | | | | |

THE

Canadian Agriculturist

AND

JOURNAL OF THE BOARD OF AGRICULTURE

OF UPPER CANADA.

VOL. XV.

TORONTO, AUGUST, 1863.

No. 8.

THE PROVINCIAL EXHIBITION.

We beg leave to remind farmers, and all others who may intend to be exhibitors at the approaching Provincial Show at Kingston, this autumn, of the necessity of making timely preparations for the same. The Show takes place on the 22nd to 25th September. The entries of Cattle must be made by the middle of August, and of other articles shortly afterwards. Prize Lists and entry forms, with full particulars and directions, have been sent to the Secretaries of Agricultural Societies all over the Province, from whom exhibitors who have not received them otherwise may obtain them. The Local Committee on their part are making ample and substantial preparations for the accommodation of stock and articles, by thoroughly repairing the buildings already existing, and erecting extensive additions to them, as well as some entirely new structures. The subjoined article, which we cut from the *Kingston Daily News*, describes in detail the works in progress, or completed:—

PREPARATIONS FOR THE EXHIBITION.—To Kingston belongs the honor of erecting the first permanent buildings for the purposes of the Agricultural Association of Upper Canada.—Previous to the Exhibition of 1856, the Government of the day granted a license of occupation, for the term of twenty years, of an area of about twenty acres on a portion of the Penitentiary farm lot, and on this the Local Committee raised a handsome and substantial cruciform structure of wood and glass; also ranges of commodious buildings for cattle, horses, pigs, sheep, &c., and a Mechanics' Hall

for machinery and agricultural implements—the whole costing about sixteen thousand dollars. The main building, or "Palace," though not so extensive as its heavy, ungainly rival at Toronto, is a light and elegant structure, and well adapted for the purposes for which it was erected. The transept is 190 feet long and 56 feet wide; the general height of the building 34 feet, and that of the cupola about 60 feet. There is in the whole structure about 24,000 feet of fluted glass, being more than double the quantity in the Toronto Palace. The building is undergoing various repairs and improvements, and additional room will be secured by the removal of the unsightly and useless orchestra which now occupies a large space in the nave. The repairs to the wood-work, under the superintendence of Mr. Geo. Brown, are rapidly approaching completion, and Mr. Wm. Robinson has made good progress in the painting and glazing. In the interior the roof has been colored a pale yellow, the ribs vermilion, and the elliptic sweeps and posts a bright blue, the contrast being exceedingly lively and pleasing. The coloring of the outside is blue and white, and when finished, the exterior of the building will present a clean and attractive appearance. The Mechanics' Hall, a neat and substantial two-storey structure lying to the southeast of the Palace, is being extended by an addition of sixty feet to its length, its original dimensions being 108 feet by 26. It, also, will be colored outside and in—the interior red, white and blue—which will greatly improve its appearance. The old cattle sheds have been thoroughly repaired and strengthened, and the accommodation for this class of animals has been largely increased by the erection of a new range of buildings on the west side of the grounds. The old range is 428 feet long by 32 broad, and the new 300 feet by 12, both being capable of housing comfortably upwards of two hundred

head of cattle. On the west side have also been erected new sheep and pig sheds and a capacious carriage house. The dimensions of the former are 300 feet by 12, the capacity being sufficient to accommodate about 500 animals. The carriage shed is 400 feet long by 16 wide, and will, no doubt, afford ample room for the class of manufactures which it is intended to accommodate. The old horse stables at the south end of the grounds are in pretty good condition and will require but few repairs. The range is 660 feet long, and can house comfortably about two hundred animals. The ventilation, however, is very imperfect, but the evil will be remedied to some extent by cutting an aperture in each door and inserting therein a strong wire grating, which will also increase the facilities for viewing the horses. Another old range of stables, on the east side, is in a very dilapidated condition, and extensive repairs and alterations are needed to render the stables serviceable. It is believed, however, that they will not be required, but it is the intention of the committee to have them thoroughly repaired in case the other stables should prove insufficient to accommodate all the horses entered for exhibition. This second range is 300 feet long, and when put in order will house about one hundred animals. On either side of the Mechanics' Hall are two tiers of poultry coops, each 108 feet long, and containing 54 compartments—the whole four tiers being capable of holding upwards of two hundred pairs of fowls. These coops are in a fair state of preservation, and need very few repairs to render them secure. In addition to the buildings already noticed, it is intended to erect another, to be devoted to various purposes. It will be 35 feet long and 20 wide, and will comprise, among other apartments, a refreshment room and a retiring room for the ladies. All the buildings on the ground are substantial permanent structures, and when the repairs and improvements they are now undergoing are completed, will compare favorably with any similar buildings in Upper Canada. Mr. Power, the architect, and the contractors, Messrs. Brown, Robinson, and R. M. Horsey, are pushing forward the work in their respective departments with great vigor, and in a few weeks everything—so far as the buildings and ground are concerned—will be in readiness for the coming Provincial Exhibition.

FLAX.

We had the pleasure of seeing, a few days ago, two or three very fine samples of flax, in the green, nearly mature state, just pulled from the ground; one of the samples, furnished by Mr. J. A. Donaldson, having been grown on the farm of Mr. Robert Watson, of Whitby,

and the others furnished by Mr. Mitchell, of Norval, grown on farms in that vicinity. The samples are about $3\frac{1}{2}$ feet in length, and the fields from which they were taken present beautiful, even crops, which would be considered excellent in any flax producing country. Mr. Donaldson estimates that the Whitby field will produce 20 bushels of seed to the acre, and fully 500 lbs. of scutched fibre. This, at \$1.50 per bushel for the seed, and only 10 cents per lb. for the fibre, will give the nice return of \$80 per acre, an amount not easily realized from farm crops. The crops at Norval are represented as equally good. Experiments in flax culture are rapidly convincing the farmers that it will soon be found the most remunerative crop that they can cultivate.

TREATMENT AND CULTURE OF THE POTATO, WITH REFERENCE TO THE PREVENTION OF DISEASE.

Although we have not heard as yet that Potato disease has manifested itself to a serious extent in Canada, it may not be unreasonable, judging from the past, to call the attention of our readers to some facts recently observed by distinguished men in Europe in reference to one of the most difficult problems belonging to scientific and practical agriculture.

Much interesting information has lately been elicited in connection with this important subject, of which we purpose here to give a brief *resumé*. At one of the Council Meetings of the Royal Agricultural Society of England attention was directed to a method of treating potatoes for "sets," discovered accidentally by Professor Bollmann, of St. Petersburg. The process consists of subjecting the potatoes to high temperature, which dries and shrivels them. Even when this was carried to the "charney point," the vitality of the tubers was not destroyed, for some which were planted much charney produced as good a crop as those which were merely shrivelled. This method of heating potatoes was discovered in 1853, and so completely established does it seem in practice that it is stated that in Russia on many estates, drying houses are being erected. The principle seems to be the getting rid of the superfluous moisture, which is found in all potatoes affected, or disposed to be affected, by the disease, which moisture is said to be always in exce-

compared with the healthy tubers. It was stated by Mr. Williams, of Chester, as the result of his observations in Anglesca, that "Those parts of potato fields where there are most weeds, such as grass, chickweed, and the like, suffer least from the disease; that the haulm decays many weeks earlier than it used to do before the disease came in, and the young tubers thus deprived of their natural shelter from the sun, may profit by the protection given them by the weeds."

An intelligent correspondent of a British paper remarks in reference to the best time for kiln-drying potatoes:—"According to the practice of Professor Bollmann, the operation was performed as soon after digging time as it happened to be convenient, and that the potatoes were dried in single layers on a heated floor, the temperature of which was gradually increased to the maximum of 140 degrees Fahrenheit. After being submitted altogether 24 hours to this process, the tubers will be dry enough to be replaced by a fresh supply, which of course will have to be repeated until the whole stock of seed potatoes have been heated in a similar manner.—The seed may afterwards be put in sacks or bins, or disposed of in heaps on the floor of a dry loft. For the convenience of cottagers or others whose stock of seed potatoes may be small, the common oven will answer the same purpose. It is now a well established fact in vegetable physiology that tuberous rooted plants especially perform the functions of suction after the stalks have died away, and the roots to outward appearance are fully ripe. In the case of late potatoes, therefore, the deposition of the organic matter cannot be reckoned to begin until the first week in November, and as this most important process in most vegetable structures is not completed until the end of January, we may safely determine the latter period to be the best for kiln-drying the potatoes.—Again, early potatoes should be dried in the same way any time between the middle and end of October. Let the process be carried out according to the rules here laid down, and the manner of the operation will be found to be in harmony with the revelations of Botanical science. Besides, the cultivator should never lose sight of the fact that the potato loses nothing of its moisture by drying, and seeds are not considered saleable until carefully dried. One of

the causes of disease is thus removed before planting. It often happens that seed potatoes have to be spritted at least once before planting, an operation which afterwards greatly impoverishes the crop." Our readers will of course make the necessary allowance on account of the difference of climate between England and Canada, in reference to the periods of the year mentioned in the preceding extract.

Several artifices have been employed by different individuals, with more or less success, for the purpose of evaporating the excess of moisture which always exist in tubers pre-disposed to disease. It is a good plan when digging potatoes to leave them a while in the field in small lumps but slightly covered with the haulm, and afterwards store them away in a dry and airy situation. Much of course will always depend on the nature of the soil, time of planting, manure and cultivation, and the character of the season. Wet, stiff land will never produce sound and nutritious tubers. Hence the necessity of draining; and in many situations the application of lime previous to planting, will be found exceedingly beneficial. No plant perhaps has received such neglect and unreasonable treatment as has this plant for the last half century, and what was formerly a certain and profitable crop has of late become the most precarious and unremunerative.

TAR AND TURPENTINE.

Recently some parties in Michigan have turned their attention to the manufacture of tar in the pineries of that country. The product appears to be obtained in paying quantities, and sells readily at \$1 per gallon, American money. It seems that the parties who have entered into the manufacture are Norwegians, who settled at Grand Traverse last fall. If this manufacture proves profitable in Michigan, there is no reason why it should not be equally so in Canada. The following article on the production of turpentine and tar is from the N. Y. *Scientific American*.

The immense forests in North Carolina which cover the sandy ridges between the swamps and water-courses, consist almost wholly of the long-leaved pine, the *Pinus palustris* of the Southern States. From them is gathered one of the great staples of North Carolina—the turpentine. These trees at maturity are seventy or eighty feet high, and their trunks eighteen

or twenty feet in circumference near the base. They grow close together, very straight, and without branches two-thirds of their height. Overhead their interlocked crowns form a continuous shady canopy; while beneath, the ground is covered with a thick, yellow matting of pine straw—clean, dry, level, and unbroken by undergrowth. The privilege of tapping the trees is generally farmed out by the landowner, at a stated price per thousand, about from twenty to thirty dollars. Under this privilege the laborer commences his operations. During the winter he chops deep notches into the base of the tree, a few inches from the ground, and slanting inward. Above, to the height of two or three feet, the surface is scarified by chipping off the bark and outer wood. From this surface the resinous sap begins to flow about the middle of March, at first very slowly, but more rapidly during the heat of the summer, and slowly again as winter approaches. The liquid turpentine runs into the notches, or boxes, as they are technically called, each holding from a quart to half a gallon. This, as it gathers, is dipped out with a wooden spoon, barreled, and sent to market, where it commands the highest price.—That which oozes out and hardens upon the scarified surface of the tree is scraped down with an iron instrument into a hod, and is sold at an inferior price. Every year the process of scarifying is carried two or three feet higher up the trunk, until it reaches as high as a man can conveniently reach with his long-handled cutter. When this ceases to yield, the same process is commenced on the opposite side of the trunk. An average annual yield is about twenty-five barrels of turpentine from a thousand trees, and it is estimated that one man will dip ten thousand boxes.

The trees at length die under these repeated operations. They are then felled and burned for tar. The dead trees are preferred for this purpose, because when life ceases, the resinous matter concentrates in the interior layers of the wood. In building a tar kiln a small circular mound of earth is first raised, declining from the circumference to the center, where a cavity is formed, communicating by a conduit with a shallow ditch surrounding the mound. Upon this foundation the split sticks are stacked to the height of ten or twelve feet. The stack is then covered with earth, as in making charcoal, and the fire applied through the opening in the top. As this continues to burn with a smouldering heat, the wood is charred, and the tar flows into the cavity in the center, and thence by the conduit into vessels sunk to receive it.

AGRICULTURE OF NATAL.

[We take the following interesting letter from a recent number of the *Scotch Farmer*, written by a former resident of Warwickshire, England,

who emigrated to Natal some years ago. The communication will afford our readers some idea of the state and capabilities of agriculture in this new and rising Colony on the south eastern shores of Africa.—Ers.]

“Richmond, Port Natal, Feb. 25, 1863.

MY DEAR SIR,—Your letter of December last is duly to hand, and I proceed without delay to answer your inquiries.

Your first query as to the advantages and disadvantages of this colony, I presume you mean in comparison with England. In a young colony the common luxuries of Europeans have, of course, to be imported. It may be therefore allowed as a fair average that the purchaser from a retail dealer of imported goods gives about double their ordinary retail price at home.

I consider, however, that no emigrant need spare more than ten per cent. of his income on imported goods. We can produce all the common necessaries of life. With a semi-tropical climate on the coast, and an English, or speaking more locally, a Devonshire climate on the uplands, we can produce many things unknown to most Englishmen. There are doubtless many advantages in England above those of any colony; one thing, however, is very certain, we are not a quarter so taxed, half so worked, and not near so unhealthy as the people of your pushing, elbowing, heel-kicking, over-crowded manufacturing towns, which I think, in a few words, shows no small advantage.

The greatest disadvantage we feel is want of more population of the right colour and stamp. I am glad, however, to observe that Natal is now fast drawing crowds of emigrants to its shore, and many of them of the right stamp with capital, and the right sort of pluck to carry them through first difficulties. We have thousands and thousands of acres lying ready for the pushing emigrant to turn into thriving homesteads and blooming corn fields.

Your Warwickshire farmers could for one year's rent (and for much less) buy a freehold farm within an easy distance of market. Some of your farmers think it a fine thing to farm 20 cows and 150 acres. I know parties who were common clothhoppers in one of the southern counties, and who were sent out here out of charity, who would rather grin at the old master's ideas of farming. A six thousand acre farm (equal to any farm in your county for richness of pasturage, &c.), with a hundred or even two hundred head of cattle running upon it, is thought no great thing of, as you may be sure, when many parties have as much 20,000 or 30,000 acres. Thousands of Kaffir families (those *poor* creatures of whose lamentable condition Exeter Hall gentlemen so frequently descant) are squires of the land in that kind of wealth.

There is another disadvantage we suffer from

—viz., want of reliable labour. The Kaffir population is our labour market; but, like all blacks living a pastoral and nomadic life, they are very adverse to long periods of work. Emigrants soon settle down to be their own masters, as by dint of hard work, with a little scheming and friendly helps from settlers, in two or three years you would observe quite a change in their affairs for good. A Kaffir works one month and rests six. He gets as much in that month as serves to buy him his blanket and few rinkets for his six months of idleness. After marriage a Kaffir is seldom found to work; his wife, or rather wives (for he is a staunch polygamist, and has as complete a harem as many Grand Turk) do all his laborious work—he is wood, draw his water, plant his crops and gather them, while our sable Othello sits re-driking and snuff-taking. You may be sure, then, that while the gentler sex are really the only working class of Kaffirdom, there will be little chance for white settlers to do great things in the way of agriculture—say such as cotton or sugar growing. It riles a colonist, more particularly an emigrant's feelings, to see thousands of those able-bodied coloured gentry spending their days away while his fields are lying idle for want of more hands. This is often a real cause of bitterness between the two races, whose feelings and tendencies are so widely different. A colonist is often obliged to resort to bribing a native chief or head man to get affairs to turn out to gather his crops. It may seem strange to your years to hear the cry of want of labour while so many thousands of our fellow-countrymen are starving for want of that which brings them bread-work. Would to God that a few thousands of the more able-bodied of the Lancashire operatives were in Natal.

And now as to your second query as to the comforts and discomforts of the colony. An emigrant would not think of building a fine house unless he had a superfluous supply of cash. A man with two or three hundred pounds would not well only to put up a hut or cabin of two or three rooms, just to shelter him and his goods until he could set about more permanent work. Many people with soft hands this would be considered roughing it, but which old colonists would, of course, treat as a mere trifling discomfort. If an emigrant chooses to rent a farm at once, which can be done on very reasonable terms, he would then have time to look about him for a suitable farm. It is, however, a very bad plan for new-comers, who look to country for a place to settle down in, to remain long the seaport of Durban or Maitzberg, as the retail charges would ruin a small purse in no time. I do not think you would feel any great discomfort from the hot weather. The coolies from Madras wrap up here like a Londoner would in the Highlands—Natal is too cold a climate for them. I have felt it quite as hot in London as ever I have felt it here, but the suc-

cession of hot days is, of course, more numerous than in England. I am now about sixty miles from the coast and have found it so cold to-day (February, our hottest month) that I have had to put on an extra coat. There is a long succession of frosty nights here in winter. Hoarfrost is often very thick upon the grass in the villages. I have seen ice half-an-inch thick, and snow six inches deep on the hills within an hour's ride from this place. Fortunately, the summer is the wet season, and the copious rains and thunderstorms refreshen the atmosphere, and make the evenings generally very cool and pleasant. The average yearly temperature is about 60° and the thermometer seldom reaches to more than 90° or 95° in the hottest months—January and February. In winter it is often as low as 34°.

There is a long range of mountains running parallel to the coast called the Drakensberg, about 7,000 or 8,000 feet high from the sea level; these mountains are generally covered with snow during winter. The prevailing winds in winter are from the Indian Ocean in the day time, and in the winter months, immediately after sunset, the wind suddenly turns to the west, off the snowy tops of the Brakensberg. This wind has a very invigorating effect upon the climate, and if you were upon the hills in the face of this wind you would feel as much taste of frost as you would in a north wind in March at home.

From April to the end of September is one succession of beautiful sunshine; seldom a shower of rain falls in all these months. This has often a very charming effect upon the new-comers, as it is so very much at variance with an English winter sleety, sloppy, rainy days. We have, therefore, a comfortable winter, which is a fine season for shooting, as you may be sure. This country abounds with partridges, pheasants, quails, wood-pigeons, poves, wild turkeys), snipes, parrots, rabbits, various specimens of the wild antelope, &c. There is therefore, a comfort in that you can go out at leisure and shoot, and not fear being trapped up by a gamekeeper.

Notwithstanding that Natal is, as far as situation upon the earth's surface is concerned, almost in the tropics, yet it is free from the more virulent forms of disease. From returns of mortality amongst the troops situated in the various colonies, it appears that out of every 1,000 men 120 die yearly in Jamaica, 78 in the West Indies, 48 in the Madras Presidency, 28 in Bermuda, 16 in Malta and Canada, 14 in Nova Scotia and New Brunswick, 13 in the Cape Colony, and only 2 in the thousand in Natal. Consumption is all but unknown here, and even persons who had strong tendencies towards that disease at home do not feel the least inconvenience from it here. The most dangerous diseases in this colony are a kind of low fever and dysentery. These are generally brought on by intemperate habits (colonial

spirits are to be shunned by emigrants), low state of the blood, too much exposure to the sun in hot days, and general neglect of the ordinary precautions necessary to good health in any climate. Small-pox, cholera, and the more infectious fevers are unknown here. Settlers here being mostly men living upon their own estates, and with no one to bind them in their arrangements for their own pleasure, spend a great portion of their time on horseback, either shooting or enjoying themselves in a canter to friends, or a trip into the towns and villages to hear the news, &c.

Very few people here but have horses. It is generally the first outlay, and is a prudent one, as the people in the country are generally so scattered that footing it would be out of the question.

Farmers have suffered a great deal from pleuro-pneumonia, a disease which is very disastrous to horned cattle, but as inoculation is found to be a great preventative of the disease, it will probably die out in a few years. I see from the papers that Australia and New Zealand are also suffering from this curse of the farm. The requirements of the colony are, doubtless, many, but these are being gradually applied. We have tolerable roads, and the rivers are fast being bridged over. The government are now spending about a quarter of a million in improving and extending the harbour of Port Natal, and we hope in a few years to have a railway from the seaport of Durban to the city of Maitzberg. These two places are improving wonderfully; there are some very fine both public and private buildings, and the outlying settlements are gradually filling up.

What we require more than anything is more white people—capitalists, tradesmen, artisans, and farmers. Young men of the lighter employments, such as clerks, assistants to drapers, &c., are not wanted.

To begin with farming off hand, you would require, say—

| | | |
|-------------------------|-------|-----|
| 10 cows, at £5 each | | £50 |
| 8 oxen at £7 each | | 56 |
| A cart | | 20 |
| Plough and harrow | | 10 |
| 100 acres of land, 10s. | | 50 |
| Oblong hut or cabin | | 5 |
| Pigs and poultry | | 5 |

£196

For £100 you would be able to buy 300 acres in some places, if not more; it would buy 500 acres of Crown lands, but then you would have to go a little further from a market.

If a man wishes to go into sheep farming, he should, of course, have a large capital at his disposal. I think, however, it is as well to go to work gradually and surely. I could point to parties here now, after ten years' residence (and who came out with all but empty purses), with their 2000 head of cattle, large troops of horses and mares, flock of sheep, large farms of 3,000

or 6,000 acres, and comfortable homesteads. Farmers will often give a helping hand to new comers. Artisans can always find employment. Carpenters, wheelwrights, smiths, stonemasons, bricklayers, &c., can earn their ten or fifteen shillings a day.

The price of land varies according to situation; Crown lands are to be bought on frehold for 4s. per acre, but farms may often be bought upon the land sales or long credit, and for cheap rate. Land in the chief towns is excessively dear, and anywhere within eight or ten miles from them.

The products of the colony are, upon the coast lands, sugar, tobacco, arrowroot, ginger, cayenne pepper, cotton, Indian corn, indigo, &c., &c.; in the way of fruits, pine-apples, bananas, oranges, lemons, nectarines, mulberries, mango, and many others.

In the uplands, wheat, barley, Indian corn, native sugar canes, potatoes, wool, cotton, most English vegetables, and apples, pears, peaches, lemons, oranges, quinces, Cape gooseberries, pomegranates, and a whole list of others.

As a rule, emigrants ought to bring out with them everything they find useful at home. Do not neglect warm clothing, as well as light, air clothes, crockery well packed, and all sorts of enamelled wares are very useful in colonies. Carpenters' tools, a good fowling-piece and rifle, odds and ends of the utensils of the farm are handy, plenty of shirts, fustian; calico print and flannels should be brought out.

I am, dear sir, affectionately yours,

D. T.

For the Agriculturist.

SOUTH RIDING OF LANARK COUNTY SOCIETY.

Management of Agricultural Societies, Stock Seed Wheat, Provincial Exhibition. Professor Buckland, Ottawa.

We would like to know a little of the experience of others in managing their Agricultural Societies, and your journal affords a means of communication.

In South Lanark under able guidance we have some years had good success, and again we have fallen low enough.

Formerly our annual subscription was a dollar, and it required near 270 members, if paid only \$1 to keep us afloat, and to participate to their full extent in the government bounty. By holding our annual exhibitions in different localities and thus extending the interest to the neighbourhoods, we succeeded well. At this time we distributed monthly some 90 periodicals.

This change of locality had its disadvantages as we could not have permanent buildings. The Society afterwards chose Perth as its place of exhibition, and put up temporary buildings, but again the interest flagged and our members reduced in numbers.

We have now raised the annual subscription

2 as the minimum. Last fall we had a very successful exhibition and large numbers attended. One of our mooted points is, the propriety of crop and farm viewing or not. One class of members objects on the grounds that it is un- to them who have not good farms, and which are broken by rock, stream and lowland, stating that they cannot successfully compete with their brother members who have fine land, broken fields, and where farms are in consequence more regular and better looking to the spectators. They say the only fair way is by bringing in the bag at the annual exhibition. Other parties approve of both methods and would have both the show and the crop viewing. A great deal of warmth has been displayed among the members, and we would like to hear the views of other societies and a little of their experience. We cannot do without the exhibition; Can we do without the crop farm viewing? An opinion from abroad would prove an authority and help us to settle the controversy.

Our societies have at different times brought in bulls, the Ayrshire being the favourite, some fine grade cattle are the result. They are only grades after all. In the west you are so fond of having the Provincial Exhibitions, because you have good ones, our western farmers have pure breeds, their imported thoroughbreds, Ayrshires and Galloways. Having done so well and gained renown, and we trust you enlighten us as to the best mode of producing pure breeds amongst us by means of society. We will suppose the farmers either to be rich enough or unwilling to pay the high prices asked for stock-getters. Shall we proceed? Give us advice or us a lecture for not being up to the times, something to bring us up to the mark. It is that females as well as males must be selected, in order to have pure breeds. Support the society to be purchasers, we find the expenses of keeping considerable. What is your experience elsewhere? Have you enterprising men, who undertake this duty at reasonable rates, or will it do for the society to purchase and then sell by auction to the highest bidder among the members?

One of our societies has authorized a member to attend a sale and purchase; intending to select the animals for competition among its members afterwards.

The Ayrshire is the favourite here, both milk and beef being looked for. We have a good country and substantial farmers, but the winter is a drawback. There is a determination to move forward, and if any of your society can give us advice or direction, we will be better off of it and a little plain speaking will do no harm.

Very but little fall wheat has been raised. Canadian Fife has been a great favourite, I think, I think, supply good seed even to us, if applied for in time. Some brought

in from there, did not appear to be any improvement. The Golden Drop is now attracting attention, and it has been noticed as being quoted a few cents higher a bushel in the western market, than the other variety. Why? Does it yield more and better flour? And can you recommend any other variety of spring wheat to us?

Kingston seems to be fixed as your most eastern point for the annual show. Why not Ottawa some time? Have we no reason to get jealous of our western brethren, and shall we not put in our claims for a little more attention? We wish to bring them all down to central Canada occasionally, in the hope that they will think more of us on better acquaintance. The value of the great Ottawa region, its influence and capacity for agricultural and manufacturing purposes will some day flash in upon the intelligent men of the west. The workers here, if not so far on in their agricultural standing yet as their more western brethren, are nevertheless accumulating influence and means, and will not be much longer in a position to be overlooked in the estimate of the progress of agriculture in Canada.

You are pushing up the flax question and have got your scutching machines, not forgetting to make us pay our part of the cost, but it does not appear to have occurred to the managers of the movement, that our Ottawa region was the place to send one of the machines, and that the flax culture could be as well if not better introduced amongst us, then in more favoured regions west. We purposely put in this hint, and wish to send it abroad wide through the columns of your *Agriculturist* and *Journal of the Board of Agriculture of Western Canada*.

Now that a cry to aid the emigrant is abroad, and a desire shown to bring him to Canada, where is he to be planted if not in our Ottawa region of country along and inland from this other frontier of our country? The mighty St. Lawrence has had its day, its canals and its railroads, and the future of the Ottawa bids fair to out rival it yet. The judges of the land will soon find it necessary to preside in halls of justice built on the shores of the upper Ottawa, and we trust that the future Boards of Agriculture will have a sprinkling of Ottawa men amongst them. It will be our own fault if this is not so.

Professor Buckland once paid us a visit, but it is long, long ago, and our eyes have not been delighted with any accredited agents of the great agricultural movements of the day emanating from the Bureau of Agriculture or its Boards. But they gather themselves together up westerly and around Toronto, and we go in for reversing the order of things by which the wise men came from the east, and put in a plea for a visitation and recognition from the west.

Other points might be noticed, but this letter is already long enough for the *Agriculturist*.

W. O. BUELL, Pres. of Ag. Society.
Perth, 15th April, 1863.

ON THE BREEDING OF HUNTERS AND HACKS.

Perhaps the best introduction to this paper would be a reference to the prize-sheet of the approaching Exeter Meeting of the Bath and West of England Society, where two handsome premiums appear for "thorough bred stallions best calculated to get hunters and hacks." In a national point of view the good policy of calling more attention to this subject cannot for a moment be questioned, while the duty of doing so comes quite as legitimately within the scope of an agricultural association. All the rest of the world is even more inclined than ever to turn to us for their best cattle or sheep. There is, in fact, no breed of animal that commands so ready a market as a good riding-horse; and yet, strange to say, there is no other branch of business so fortuitously supplied. Saving in Yorkshire Lincolnshire, and parts of "the Shires," the breeding of horses is mere chance work; and the very gentlemen of the district, when they are in want of a promising hunter or clever hack, have but too often to import him from elsewhere. The mere rumour, indeed, of a smartish four-year-old will bring Mr. Oldacre or Mr. Weston some two or three hundred miles specially to look at him; and dealers and their agents now attend our great summer shows as regularly as they do the autumn fairs, just for a glance over the hunting classes, already so attractive a feature in the proceedings.

And yet farmers will tell you that, as a rule, breeding "nags" does not pay; as, under the circumstances, it would be rather a curious thing if it did. As a rule, breeding such stock does not answer, because they are bred without any rule at all. In these days, if a tenant wishes to rear a good beast, he takes especial care to secure the services of a good bull, as with the same ambition he will bid up for a Cotswold shearer or a Southdown ram. If, moreover, he really means to succeed, he will be almost as scrupulous in selecting a dam, and thus provided, he gives the principle he is testing a fair trial. But take the case of rearing a riding-horse, and how does the self-same man proceed? In nine times out of ten "just anyhow." He puts anything he may happen to have with anything that may happen to come in the way. As often as not, he scarcely looks at the horse he uses, but takes the word of some roving blacksmith, or broken down cooper who travels the country with an animal "best calculated to perpetuate the breed" of weeds and screws. Then the foal, when he does come, is cultivated much after the same fashion, or, that is, left pretty much to shift for himself. You will see him fighting for his own in the farm-yard amongst a lot of store-bullocks, as likely as not with a hip down, or a hole in his side from a playful Hereford, and doing as well as he can on that grand specific, a due allowance of bean-straw. The result of this wonderful system

is surely logical enough. At a year old the young nag is a half-starved, sulky-headed, bellied, narrow-framed thing, with most probably a blemish or an eyesore of some sort: complete his personal appearance, and with general expression and carriage as lively as that of Rosinante, or Doctor Syntax's Dapple. Naturally, the breeder of such a prodigy is more than anxious to sell him, but quite as naturally can find nobody willing to buy him, until, we get out heart, mouth, or action—under-bred, unfed, and half-broke—the butcher gets him thrown in with his next half-score of beasts, or the village apothecary, on the spur on some happy moment, is brought to believe that the colt *suit* him. And thus it happens that breeding nags does not pay—with rather less outlay of attention devoted to such a business than one would bestow on a sitting of Cochon d'Inde eggs, or a litter of terrier puppies.

It may be argued fairly enough, that a farmer does not and cannot make the same whole business of breeding hunters and hacks as does of producing cattle and sheep. Still, something that is worth doing at all is worth doing well, and this might be put yet more emphatically in a pecuniary point of view. There scarcely an occupier of any position but who always a goodish animal or two that he rounds his farm, drives in his dog-cart, or, to it out, rides with the hounds. Let these some of them in continual succession, be men that from use, age, or accident, get beyond work, and what then becomes of them? Their owner cannot sell them, and he will not keep them; so that almost as a matter of course and necessity he proceeds to breed from them. Let us not stay here to inquire whether they are just the sort for such a purpose; but let us take the initiative, follow out the line of the social and show our friend that he should do, in contradistinction to that he too commonly does. The great improver, then, of his species is the thorough-bred horse; and as a maxim you expect the produce of a half or even three parts bred mare to be worth rearing, you will put her to a sire who is as pure-bred as she is herself. There may be occasional exceptions but these are not to be trusted or taken as precedents. A country mare crossed by a country stallion may now and then throw a good hunter but we shall generally find that such cocknags are as nearly thorough-bred as possible, after all, it is safer to keep to the genuine article. I cannot here but congratulate the Council of the Society on the wording of their regulations for this class, as not admitting the production of a half-bred horse to get good hunters or even clever, fashionable hacks. When, naturally, we see a fine powerful three-parts horse, with plenty of substance and style—him, a good head, fine shoulders, clean legs, and so forth, we feel willing enough to have a few more like him. But in this case we have a very forcible illustration of a fallacy of a

erb; for "like does not get like" Put the ever three parts bred stallion to the equal ever three-parts bred mare, and can we do so with the assurance that they will reproduce anything as good as themselves? Most decidedly not. The great point, the very foundation of the personal excellence of the animal we have before us, centres on his being by a thoroughbred horse—a recommendation of which his stock in turn would be as signally wanting. Nothing can be finer, as the experience of our last Christmas shows went to prove, than the first cross between the short horn and the Aberdeen cow; but what would be the result of crossing these crosses? Disappointment, uncertainty, and thorough sacrifice of all purity of type either on one breed or the other. A man who went in this way for generations might eventually be something towards establishing a new variety of breed; but this, with such sorts as the short-horn and polled, already at our hand, will be scarcely worth the time and trouble; and I am not very sanguine of any enterprising individual venturing a better material for making a hunter than that he can get direct from the thoroughbred horse. What are the three great essentials of the modern hunter but speed, power, and courage? and where shall we get these but direct from the sire? There is nothing less warranted than the supposition that the English race-horse has deteriorated in strength or endurance. If you begin galloping him at a year and a half old, to wear him out in running and "rying" before he is three years old, and his legs furnished, this is no proof of all he might have been had its powers been husbanded, like those of his ancestors, any of which, under like circumstances, he would have fairly distanced over a four-mile course. *Pace* is now the sword of the chase, and the best hunters in Westeshire, either for fencing, weight-carrying, or stoutness, are and long have been pure thorough-bred. These are the horses that take money, and next to these the three parts bred, by a thorough-bred stallion out of a well-bred mare.

But Jonas Webb, even at the acme of his success, culled his rams, and many a short-horn that we never see, has, like Brummel's neckties, been fastidiously put aside as "a failure." With the thorough-bred horse, however, it is not so; here, unfortunately, there are no failures. Those of the highest degree go to our famous turf studs to serve at their fifty or thirty years; others of almost equal excellence are sought up for the foreign market; while many of a similar stamp are put at prices varying from ten to twenty guineas. Such horses are beyond the farmer's reach; but instead of looking for something in the next degree—and without the charge of mere fashion or high performance, might well answer the object—our dealer is too often content with the very worst cast-offs. People who live by travelling stallions are not often men of much capital, and

they go as a consequence, more for a cheap horse than a good one. With a flaming card of all a great-grand-sire has done, or what this very horse may have accomplished over a short course at a light weight, they associate an animal whose appearance alone should condemn him—narrow, weedy, and leggy, with scarcely a point in his favour for getting hunters, and very possibly full of all sorts of defects, natural and otherwise. The fee still is a small one, and so the mischief is done. A man pays 25s. where five guineas would have been a saving, and the thorough-bred horse gets a bad name, plainly and very palpably, if a customer would only make use of his eyes, from being unfairly represented. Considering the infinity of good or evil they are capable of producing, it is really a question whether horses ever should be allowed to travel without a license, the more particularly when we see how few people take the trouble to judge for themselves. It is said that every Englishman is either a judge of a horse or thinks he is; but one can scarcely credit this when we find such a number of weeds and cripples year after year earning incomes for their owners. Although nag-breeding may not pay, it is remarkable how many men still continue the unprofitable pursuit.

And now as to the remedy. The notion of encouraging farmers to breed a better sort of horse is by no means a novel one. The offer comes, in the first instance, by way of some recompense for the privilege of riding over their land, or to ensure their good-will for the hunt. Hence we have had Farmers' Plates and Hunters' Stakes, neither of which can be said to have thoroughly answered their object. The so-called hunter just "qualified" by showing at the cover-side a few times, and then went back to lead gallops for a Derby favourite, or to vary his performances in the field by winning a Royal Hundred. The Farmers' Purse, given by the gentlemen of the Hunt, has been often enough still further from its original intent. A sporting inkeeper or a hard riding townsman would just "qualify," again, by taking the requisite number of acres of ground, and bargaining for a plater in due time previous to the race coming off. Then, by the aid of a *quasi* gentleman rider who could sit still at a finish, the "bona fide farmer" Boniface would pocket the purse, as the donors looked on year after year in glum disappointment, murmuring occasionally to each other that this was not exactly what they meant either! Perhaps, however, next to losing, the most unfortunate thing that could ever happen to a real tenant farmer was to win one of these same Farmers' Plates. It has given more than one man of my acquaintance his first taste for the turf: another result as little intended by the founders of the prize. But, let the members of the hunt not yet altogether despair of what they may do in this way. Of late years the purse has taken a far more popular form, and in place of being contested as a plate on a race-course, it is

now offered as a premium on a show ground. To the growing interests and success of such a system I have already spoken; but we have scarcely yet got so far as the show-ground. Before we venture into public, we must see if we cannot set to work, and breed something fit to place before the judges. And here, too, the hunt may help us. Let it be admitted that, in a free country like this, the licensing would hardly be practical, and that any man may still "travel" any brute he chooses. Surely the fitting way to meet him will be to start a better horse in opposition. Let the master and the managing committee of the county fox-hounds make it part of their business to see that the district is never without the command of a good, sound, thorough-bred stallion, "calculated to get hunters and hacks." Let such a horse, if necessary, be even the property of the hunt, to stand at kennel stables; and let him, moreover, serve farmers' mares at a certain moderate figure. Never, however, under any circumstances, let his favours be given gratis; for people are very apt to estimate that which they get for nothing at what they pay for it, and such a practice would only tend to make men more careless over a matter which they are only too indifferent about as it is. The principle I would here recommend has already been tried. It was only within the last year or two that I was staying with a friend on the borders of Shropshire, who was then looking out for another stud-horse for the country, as they had just lost the one they had been using for some seasons. Baron Rothschild, who hunts the vale of Aylesbury so handsomely, takes especial care that a thorough bred one is ever within the graziers' reach at Mentmore; and the Duke of Beaufort has now always a stallion, which serves mares within the boundaries of the Badminton, at a trifle over a merely nominal figure. I had the honour last autumn of awarding his Grace's premiums for the best yearlings by his Kingstown, as well as for the best mare with a foal at her foot by the same horse, when the following suggestive incident occurred. The prize for the yearling went to a really blood-like filly, with fine, free action to back her appearance. In the course of the morning I was accosted by her owner, a perfect stranger, who after a word for the young one, added, "But you would not give her mother a prize, sir." I did not know that I had ever had the opportunity of doing so, until my new acquaintance explained to me that she was in the brood-mare class, acknowledging at the same time, "I know why she did not get it; she is not quite well-bred enough, nor active enough to be either first or second of her order; and that wonderful nick with the thorough-bred horse had done it all—a fact which even a possibly partial owner saw as plainly as I did.

This brings me to another branch of my subject. Having secured the use of a good, promising horse, let us as early as possible go on to prove him. The four-year-old hunting class is

the favourite one at our agricultural meetings; but I am not quite sure but that the yearling or two-year-old classes are not more advantageous in their effects to the breeders. In the first place, if a man has a tolerably good-looking foal he may begin to keep him rather better than fear many farmers are inclined to, if he thinks exhibiting him as a yearling. Then, if he chooses, this said exhibition may be something of a market. It is not every man who has the time or ability to "make" young horses; and there is always some risk in breaking, and so forth. A fair offer should consequently seldom be refused, especially if it comes at an early period in the colt's career; but this is a part of the business, again, that agriculturists are scarcely up in. If they have a good-looking yearling one they are terribly apt to overstay their time with him, and to keep him about home until he gets thoroughly blown on. A dealer has the opportunity of shifting a stayer that a farmer can possibly command; and even further this "making" of a hunter of a very necessity implies a deal of knocking about. A friend of my own once refused an offer of between two and three hundred guineas for a prize two-year-old from a neighboring master of hounds, or to keep him until, from a series of misadventures, his chestnut horse became almost unsaleable, and never afterwards worth a fifth of what was bid for him. Others will become yet more enamoured with their own, and turn all their geese into ganders. Such a man will look at his colt as he finds him to be too good either to ride or sell; and the coarse, fleshy, cocktail course stallion is the consequence. His owner's immediate influence in the neighbourhood is to get him some mares, and as he has never a day's work in his life he is possibly free from any very visible strain or blemish, a point the equally certain to be made the most of. It is almost needless to say that the presence of a stallion does infinite injury in a district; and if the weedy thorough-bred should not be taken down without a license, it would be advisable to do so. Some gentlemen without any direct call of the M. F. H. will offer to friends the example of a proper model of their own free will. An enthusiast like Mr. P. Snaith, with a horse so well selected as Theon—Captain Barlow, with Robinson reph. by Middlesex—and, I must add very appreciably here, Captain Watson, with the Bishop of Romford's cob, followed by Hungerford—inculcate a most useful lesson in their several districts. Theon did wonders in this way at Boston; and, despite their vicinity to the fatal of the turf, the farmers of Suffolk, within a very few years back, were quite willing to try and breed a hunter "anyhow," and anything that came in their way. The improvement, thanks to the opportunity at Hasketon can say, from personal observation, is remarkable; while the Devonians must know

ter than I can tell them how much they in turn owe to the Dorsley Stud farm, which I had the pleasure of inspecting a year or two since. I have also seen the Beauties of Mamhead, where a similar principle is upheld; for though the illustrious Gemma di Vergy may be beyond our reach, I am glad to hear that since I was there Sir Lydston Newman has provided a second horse with such good stout blood in his veins as the Dupe, who will, no doubt come within the farmer's figure.

It will be gathered that the point of this paper is a reliance on the use of the thorough-bred horse for improving our breed of hacks and hunters. Other crosses, with the *sine qua non* purity on one side, are of course available, such as putting the cart stallion on to the blood mare; but these extremes rarely meet or "nick," and are not to be recommended. A better plan would naturally be to associate the thoroughbred dam with the cocktail sire; but this, so far as the tenant-farmer is concerned, is practically impossible. It would require far too large an outlay to buy in the stamp of running mares to breed hunters from, and we must be content with what I believe, after all, to be the very best means for the purpose. No animal leaves stronger *imprimatur* of himself than the race-horse; and though he may not be big and bulky, he will often throw back to more size and power. The cross put the other way is not common, either can I remember any such striking examples of its success as, even if possible, to warrant its more general adoption. Nearly all our steeplechase horses, if not themselves quite thorough-bred, have claimed thorough-bred sires; and I may cite an example in this way that came personally under my own observation very early in life. My father had for many years his stud a thorough bred mare called Pintail, "Pioneer, that, just towards the close of her career, threw that famous steeplechase horse, The British Yeoman," by Count Porro. Her previous produce, however, had been anything but superior, and as a chance for imbuing them with a little more stoutness and substance, she was put one season to a good-looking three-quarter-bred stallion that was travelling in the district, the result being unquestionably the very best of the whole family. As for the Yeoman himself, light, wiry horse as he was, nothing but pure lineage could have carried him through land and under weight in the way it did.

To be continued,

dissatisfaction at the award of prizes at the late Battersea Show, both as regards cattle and sheep; for, independently of the fault that was then found with the first prize short-horn aged bull, and the first prize Leicester shearing ram, they have both proved unworthy the distinctions they have obtained, by the opinions shown (by breeders) when they were put up to public sale, and also by the disgraceful figure the shearing ram presented at the Warwickshire Show at Birmingham. Prize animals ought to be perfect models for breeders to copy, and not like the short-horn bull with too weak a middle piece to tie his quarters together, nor the Leicester ram, whose defects were too numerous to mention. Enclosed I submit to the attention of Leicester breeders a list of the necessary points for a Bakewell Leicester, with their appropriate value, in the hope that more able judges than myself may take the matter into consideration to suggest alterations and improvements to the plan:—

| | | | |
|--|---|---|----|
| Head | 2 | Belly | 2 |
| Neck | 3 | Leg of Mutton | 4 |
| Collar | 2 | Hock joint and hind legs | 2 |
| Blades | 3 | Flesh | 6 |
| Chines | 3 | Wool | 4 |
| Back | 3 | Symmetry, namely, straight line from back of poll to near the rump | 3 |
| Loins | 2 | Girt at back of foreleg, close to elbow, so great that the hind quarters are hidden when facing the sheep | 6 |
| Hips | 2 | Size with symmetry | 5 |
| Rump | 2 | Depth of rib | 2 |
| Shoulder kernel | 1 | | |
| Outside shoulder | 1 | | |
| Setting on and form of fore-legs | 2 | | |
| Width and length of breast | 2 | | |
| Depth of rib | 2 | | |
| | | | 63 |

Twenty-three points, sixty-three marks.

A sheep possessing any one of the following bad points should be excluded by the judges, however good it may be in its general points:—

1. Want of girt at back of elbow to make its fore hide its hind quarters.
2. Bad neck.
3. Badly placed blades.
4. Deficient chines.
5. Bad leg of mutton.
6. Narrow breast, with badly placed forelegs.
7. Deficient wool.

I shall feel much obliged if you will favour me by inserting the above remarks in your next *Messenger*. I am, sir, yours, &c.,

J. G. WATKINS.

Woodfield, Droitwich,—*Bell's Messenger*.

STEAM CULTIVATION.

The question is asked—How small a farm may profitably be worked by the steam plough? Probably the right way to answer it would be to consider how large a capital may be profitably employed on any farm in question. Considering the facilities for disposing of its produce, and the best possible mode of turning its productive powers to account, what is the sum which may be the most profitably employed in its cultivation? This would decide the question

WARD OF PRIZES TO CATTLE AND SHEEP BY POINTS.

Mr. I was much pleased some years ago with an pamphlet which described the plan adopted in the Channel Islands of awarding prizes to cattle the greatest number of marks, according to points, and it has occurred to me that if such a plan were adopted by the Royal Agricultural Society it might prevent a recurrence of the

whether such an addition to the capital employed upon a farm as steam cultivation necessarily involves is consistent with farm profits.

But there is another point which materially affects the answer such a question should receive; for, supposing it determined that steam cultivation shall be adopted, its profitableness or otherwise depends more than any other thing on the possibility of working the apparatus pretty constantly throughout the year. We know of one example where 30 or 40 working oxen have been dispensed with by the use of a 10 horse power engine in cultivation, and where, therefore, unquestionably a direct saving has followed its adoption. This is where the soil is so dry and easily worked that, except when heavy rain is actually falling, or the land is covered with snow or bound up in frost, the cultivator could be kept constantly employed throughout the year. In other cases we know of the engine having been employed in cultivation with a comparatively small displacement of animal power, and where, nevertheless, the tenant is perfectly satisfied with his enterprise. This, on the other hand, is where the soil is so stiff and difficult to work that the advantage is derived especially from the superior quality of the work accomplished on it. There is a limit placed upon the diminution which steam tillage effects in the horse power of the farm by the quantity of other work—carriage, &c.—which remains to be done. Where a great deal of this has to be accomplished, as in a case we know of, where 30 or 40 acres of mangel wurzel are carted to the homestead every winter, and where 20 loads of dung per acre upon, perhaps, 80 acres of a farm of 200 acres have been carried from the homestead every winter—where the market town is 14 miles off, and so on—it is plain that, taking the work of the farm alone into account, it will not pay to procure the services of a steam plough, except by way of hire. This the tenant has done to his great advantage, as he believes, notwithstanding that he has paid from 10s. to 20s. an acre for its work, together with all the coals consumed in the operation. He had 40 acres of wheat stubble ploughed in this way with Fowler's apparatus last year, and notwithstanding that we have known the farm all our farming days, ever since, 20 years ago, it was broken out of grass, yet we have never seen a better crop of mangel wurzel, swedes, and turnips than there is upon those 40 acres now. Another quarter of the farm had been steam ploughed the previous year, where turnips had been fed off and where mangels had been drawn, and first-rate crops of barley, wheat, and oats had been taken. The seeds sown with the two former crops had yielded more green food and hay over 30 acres than the tenant had previously known upon the whole 50 belonging to that quarter of the estate. The oat stubble, which, being somewhat foul, had not been sown with clover, was ploughed by steam last autumn, and a crop of peas, the like of which was never

seen upon the farm before, was grown there this year. The tenant declares that the straw was 8 feet lying, and podded more heavily than any stuck peas in a garden; he fully expects 8 quarters per acre. It is certain that he has found it profitable to hire the steam plough, notwithstanding the heavy charges for it. And indeed, notwithstanding the limited extent of the land in his occupation, he would, did the means at his disposal allow his doing so, purchase the apparatus, even for the 200 acres of plough land to which he is confined.

A farmer must have horses enough to do the carriage of his farm; and he must have horses enough to work a drill and do the harrowing before and after it. To be sure, Mr. Smith, of Woolston, has a combined cultivator and drill which is worked very efficiently by steam power. But apart from this, the sowing of the land, its harrowing, and the carriage of manure and produce will generally remain to be done by horses. Let any tenant consider how many horses he may dispense with, retaining enough for this, and he will soon learn what saving will be made by the adoption of steam culture. That he must add whatever advantage he may obtain by letting out his apparatus on hire, is far more than this, the advantage which, especially if his land be stiff and clayey, he will derive from the superior quality of the cultivation done by the steam-driven apparatus; and he will then be able to determine for himself the probability of steam cultivation answering his purpose. Fowler, Smith, and Howard all compete on very even terms as to mere cost of apparatus for the custom of the really small arable farms, to which steam cultivation is thus probably applicable; and, without attempting to state the precise circumstances under which given acreage will or will not yield a satisfactory interest upon an investment in steam cultivation, it seems plain that a much smaller extent of arable land will in most cases pay for the expense than is now generally imagined.—*Agricultural Gazette*

THE VINE LANDS OF LAKE ERIE

On a pleasant afternoon, last week, we to a drive through the sand region which skirts the city of Cleveland on the east and south; and were struck by the evidence, on all sides, of an increase of the Grape Culture. Scarcely a farm homestead, holding of any sort, be it a few rods, a few acres, or a larger farm, but exhibited evidences of new, or increased, attention to the cultivation of the grape. Without the public specially noting it, the portion of Cuyahoga county immediately surrounding this beautiful Forest City, is fast becoming a continuous vineyard. The grape crop is proving a sure-lucrative one; and land owners are not slow to note and profit by the fact. The experience of the vintners of Kelley's Island, proving that

lake region is almost if not quite free from all the drawbacks of blight and frost, and the other evil which occasionally try the patience of the vintners in Southern Ohio, has had it influence here;—but there is yet another influence to which due credit should be given. Settled in and around the city is quite a large population of Germans; and hardly one of them who possesses a rod of ground, but has a grape vine, well trimmed and trained, and annually filled with the laughing fruit. The success of these children of the "Fatherland" has taught a lesson to the Yankee element—an element quick to grasp at any idea that has success marked or indicated upon its features;—and the consequences bids fair to be, a continuous vineyard in city, suburbs and country, to the outermost skirts of the warm sand soils of the Cuyahoga.

This grape fever—a very healthful disease, we hold—is not confined to the Cuyahoga region. We have already alluded to the extension of the culture on the Islands above us; and our cotemporary of the Sandusky *Register* notes that tens of thousands, perhaps hundreds of thousands of cuttings are going into the ground about that city; and the epidemic, it says, "is sweeping all over this region and involving land holders and cultivators alike. Large quantities of land are being divided up into small parcels and sold out for vineyards. The whole peninsula over the Bay, is becoming involved, and the Islands and main land alike feel the impulse of the epidemic. With a good crop of fruit this season, another year will witness a great increase of the fever. We know no reason why there should not be a good crop, but there will doubtless be failures in the future. With the impulse that the grape culture now has, there will neither be that care in selecting land for grapes, in preparing it and in cultivating and tending the vines, necessary to insure uniform success—even if general success should remain the rule. The reckless, the careless, the slovenly and the negligent will be pretty sure eventually to fail—as they would fail in almost everything else."—*Onio Cultivator*.

SCOTCH FARMING IN THE OLDEN TIMES.

The first of the "Fordyce Agricultural Lectures," delivered at Aberdeen in Scotland last month, was devoted to a review of the history of Agriculture in that country. Parts of this history are instructive here: for there are some features in the Scotch farming of last century to which our own farming now bears too great a degree of resemblance. The intercal confusion and wars that raged so long, left the country in a wretched condition, and it was not until about the year 1782 that many signs of improvement began to be visible.

"Up to that period it was the practice to divide the arable land of each farm into what was called *infield* and *outfield*. The infield, or

intoon as it was sometimes called, was that part of the ground which lay nearest to the *toon* or farm-steading, and usually consisted of about one-fifth of the arable land of the farm. As draining was little known or practiced in those days, the farm offices were pitched in the drier spots of land, often upon the top of some eminence or little hill. This infield land received most of the manure, all, in fact, that was made at the steading, and was likewise further replenished from time to time with earthy stuff, brought from the mosses and places. It is generally said to have been kept under a continual course of crops, although this, I think, can hardly be true, and was generally manured every third year; the dung being applied to the bear, after which came two crops of oats. A good deal of bear, or barley, was cultivated in those days for making malt, and much smuggling o. whiskey and illicit distillation was practiced in some of the more secluded districts. The perpetual cultivation and frequent manuring which the infield land received, had the effect of giving the soil a dark colour and friable loamy texture, but it was quite overrun with weeds, which sprang up freely under such a system of management, little attention being paid to cleaning the ground in those days. *Spurrey*, or *Yarr* as it is here called, used to be so great a pest that in some seasons the corn was completely choked by it. The *outfield* land, which formed by far the greater portion of the farms, was managed upon a different plan. A good deal of it consisted of what was called *rig and baulk*. The baulks were wide spaces between the rigs or ridges, from which the soil had been gradually carried off by continual gathering up the ridges. So that the ridges had not only their own soil, but also that of the baulks or intervening spaces which were thus left bare, and grew no crops whatever. Any large stones or boulders that infested the ground were usually rolled into these baulks to be out of the way. Successive crops of oats were taken off this outfield land as long as they could grow. After three or four, they scarcely returned more than the seed, and they were then allowed to rest. That is to say, they were abandoned and left to cover themselves with such weeds and grasses as their exhausted nature were capable of producing. Thus they lay for perhaps five or six years, and they were again ploughed up and subjected to another series of crops.

"The outfield land usually consisted of two divisions, called *faulds* and the *faughs*. The faulds or folds were about half the extent of the other, and generally were divided into ten parts, one of which was ploughed up every year. Before this was done, it was enclosed with a turf wall and the cattle folded up during the night and for a few hours at noon. In this way a good deal of dung was left upon it, which served to recruit its exhausted powers

and enabled it to produce better crops. The *faughs*, on the other hand, got none of this beneficial treatment, and received no manure of any kind. When broken up, it was by the method known as *rib-plowing*, which was then called *faughing*, and hence the name applied to this ground."

In those days, "carts being scarcely known, the dung and peats were carried in creels, and the corn or meal in sacks laid across the horse's backs."

The rent was largely paid in kind, so many "weddres, lambs, poultry, &c." The results of the kind of cultivation described, are still perceptible in the condition of the land. The sterility of some fields is plainly to be ascribed, not to any lack of fertility, but to the exhaustion of the ancient outfields," or to the abstraction of the soil from the "baulks." The old "intoon" land, on the other hand, is still considered the most valuable of all; and it is interesting to observe," said the speaker, "that the continual cropping it underwent does not seem to have at all impoverished it, owing to the abundant supplies of manure with which it was so frequently replenished. In point of fact, the result of the farming system in those days was to enrich the infield at the expense of all the rest of the farm. These infield portions were of comparatively small extent, forming, as it were, crofts around the farm houses. When new crops were introduced, and these bits of intoon land were cleared of weeds, stimulated with lime, and sown for the first time with turnips or grasses, they yielded most luxuriant and abundant crops; instances occurred of upwards of 470 stones of 22 lbs. each (say 5 tons) being got from an imperial acre of ryegrass in the finest places. A crop of this amount was actually measured and weighed on a quarter of an acre, on the farm of Monkshill, in Buchan, in the last century—the coles being taken when dry and ready to go into the stack, the weather having continued fine from the time of cutting. The ryegrass in these cases was uncommonly strong in the stalk, and bore up the crop without lodging badly. Most of it was about 3½ feet in length; but in some of the moister portions of the field, where it continued to grow longer, some stalks of it measured 6 feet 2 inches. This was the *Lolium perenne* or common ryegrass."

May we not learn from this bit of agricultural history, a new lesson of the efficacious results of the careful and liberal application of manures? The better farming of fourscore years has not, yet sufficed to obliterate the traces of the once prevalent negligence of the farmer, where he did little or nothing to replace the crops he harvested; and where fertilizing materials were put on, continued cultivation during the lapse of the same eighty years, has only served to increase, rather than diminish, the productive effects of their regular employment.—*Country Gentleman*.

GYP SUM AS A FERTILIZER.

To the Editor of the Canadian Agriculturist,

SIR,—I would feel much gratified were you, through the medium of your valuable periodical, to set at rest a question that has been agitated here respecting the properties of Plaster of Paris. Some are of opinion that it is advantageous only in the production of one crop, whilst others contend that it is beneficially productive in a succession of crops. You, Mr. Editor, or some one of your numerous correspondents, who have tested the growing qualities of this fertilizer, might be able to give us information upon this subject; by so doing you will very much oblige.

Yours respectfully,

JAMES TORRANCE.

Goderich, June 21, 1863.

REMARKS.—We scarcely feel ourselves competent "to set at rest" the question which our correspondent has proposed. The action of plaster, both in this country and in Europe is often attended with peculiar difficulties, alike to the scientific chemist and the practical farmer. In some localities its application produces no sensible effects whatever, while in others the results are of a most striking character. Along the sea coast it produces generally little or no effect, while in situations remote from oceanic influences its fertilizing power is quite marvellous. As a sulphate of lime it supplies to plants two important ingredients,—sulphate and lime—which some soils do not possess in sufficient quantity. But it would also appear that gypsum acts beneficially in attracting moisture from the air, and in fixing ammonia and other gaseous bodies floating in the atmosphere, and in bringing them within the available requirements of growing plants. The small quantity usually applied as a top-dressing in spring, to clover, &c., although frequently attended by marked effects on the first crop, can produce, we should imagine, but little influence on the second. But when larger quantities are applied, as is sometimes done to the hills of Indian corn, the effects are frequently visible, within their limited areas, in the succeeding crop. We should be happy to receive a statement of the views and experience of practical farmers on this subject.—[Eus.

Agricultural Intelligence.

MEETING OF THE BOARD OF AGRICULTURE.

A meeting of the Board of Agriculture took place at Kingston, 23rd ult., at 10 a. m., at the British American Hotel. The Board commenced its session

AS COUNCIL OF THE AGRICULTURAL ASSOCIATION, The following members being present:—Messrs. E. W. Thomson, President; Wm. Ferguson, Asa A. Burnham, R. L. Denison, Hon. H. Rutlan, Professor Buckland, and Rice Lewis, Vice-President of the Board of Arts.

Letters were received from the following members, regretting their inability to attend the present meeting, viz.: Hon. Mr. Christie, owing to urgent business; Dr. Richmond, personal illness; Dr. Beatty, illness in his family.

The minutes of the previous meeting were read and approved.

The following communications were submitted by the Secretary.

From Mr. Geo. Prentice, of Whitby, expressing his dissatisfaction with the mode of testing the ploughs at the Provincial Exhibitions, and suggesting some improvements.

From Mr. S. Fairbanks, of Whitby, suggesting that the Council should use its influence to endeavour to procure a law to compel every one keeping a stallion for hire, to pay an annual license of not less than \$40 for the same, in order to prevent the breed of horses being deteriorated by the use of very inferior stallions at a low charge.

From Hon. A. J. Fergusson Blair, M. L. C., stating his wish to continue for this year the "Fergus Cup" given by his father, the late Hon. Adam Fergusson, for the past two years.

From Mr. J. E. Pell, accepting the appointment of Superintendent of the Arts Department of the Exhibition.

From Thos. Wilson, Esq., Secretary of the Kingston Electoral Division Society, requesting to know whether family tickets for the Provincial Exhibition would be furnished by the Association to the members of that Society on the payment of \$1 for each member.

From Mr. H. K. Parsons, of Guelph, in reference to the judging of Cheeses at the Provincial Exhibition, requesting that care may be taken to appoint judges thoroughly acquainted with the different kinds of that article.

From Mr. W. A. Cooley, Ancaster, agreeing to continue to act as General Superintendent of the Exhibition.

From Mr. J. B. Aylesworth, Secretary of the County of Addington Agricultural Society, stating that that Society had resolved to hold no show for the current year, but to give their funds in aid of the Provincial Association.

From Mr. D. W. Beadle, St. Catharines, stating it to be his intention to assume the offer of Prizes made by his father, the late Dr. Beadle, for Pear Culture, and requesting that the same should be inserted in the Prize List.

From the Secretary of the Lower Canada Board of Agriculture, dated May 28th, requesting to know what action the Council proposed to take in reference to the Exhibition, in view of the funds not having been voted by Parliament.

From the Hon. Mr. Alexander, of Woodstock, dated June 17th, suggesting for consideration whether it is expedient to give the same amount of prizes for sheep in the classes in which the competition is very limited, as in those in which the entries are numerous; also stating it to be his intention to move a resolution to prevent the Exhibition being infested with gambling tables, &c.; and suggesting the holding of a meeting, on Thursday evening of the Exhibition week, by the Delegates, to discuss any matters affecting the interests of Agriculture.

From Mr. I. H. Anderson, of West Flamboro, dated June 19th, offering an explanation of circumstances which occurred at the Exhibition of 1861, in consequence of which the Canada Company's prize was withheld from his wheat after being awarded to it, and requesting to be again permitted to become an exhibitor at the Provincial Exhibition. In this explanation Mr. Anderson alleged that his wheat had been maliciously mixed with impurities by another party, after being brought into the Exhibition Building.

From Dr. Beatty, suggesting some internal arrangements of the Exhibition Building.

The following motions were then agreed to:

Resolved,—That this Council employ a team and ploughman to try the ploughs entered at the next Provincial Show, and that the decision of the Judges be given on the trial made with such team and man only, and in no other way.

Mr. Fairbank's communication on the subject of stallions was referred to the general meeting on one of the evenings of the Exhibition week.

The thanks of the Council were voted to the Hon. Mr. Fergusson Blair, for his liberality in continuing the "Fergus Cup."

Mr. Wilson's letter, in reference to the Kingston Electoral Division Society being considered, it was decided that the practice of giving family tickets having been discontinued for many years it could not be revived under any circumstances.

Mr. Parson's letter on cheese was referred to the committee for appointing judges.

Hon. Mr. Alexander's letter being considered, the suggestions on sheep were referred to the Committee on next year's Prize List; the Secretary was instructed to request the attention of the Local Municipal authorities to the suppression of gambling tables and

similar nuisances at the Exhibition Grounds as much as possible; and it was *Resolved* that arrangements should be made for the holding of meetings for discussion on the evenings of Wednesday and Thursday of the Exhibition week.

Mr. Anderson's letter being considered, it was *Resolved* that his request to be again admitted as an exhibitor cannot be acceded to this year.

Resolved.—That the Judges for the Exhibition be appointed in the same manner as heretofore for the Agricultural Department, by requesting the County Societies to nominate competent persons for certain classes, and the Board selecting from such nominations such names as may be necessary, and that a committee be appointed for the purpose, consisting of the President of the Board, the President of the Association, Professor Buckland, and Mr. Denison; and the judges for the Arts Department be appointed by the Committee of Boards of Arts.

Resolved.—That the President of the Association be requested to communicate with His Excellency the Governor General, and such other distinguished persons as he may think proper to include, inviting them to visit the approaching Exhibition.

On motion Dr. Beatty's letter in reference to internal fittings of the Building was referred to the Local Committee.

Resolved.—That Messrs. Thomson, Burnham, Christie, Ruttan, Buckland, and Denison, be authorised as Delegates to the New York State Show at Utica in September next; and Mr. Ferguson, Dr. Richmond, Dr. Beatty, and the Hon. Mr. Alexander, to visit the Lower Canada Provincial Exhibition at Montreal, taking place at the same date.

Moved by Professor Buckland, seconded by Mr. Lewis, and

Resolved.—That a public trial of Mowers, Reapers, and Ploughs, be conducted under the direction of the Board at the most suitable period next summer, at which the awards of the Provincial Exhibition shall be given, on the condition that all prize implements shall be exhibited at the Provincial Show.

On motion the Secretary was instructed to make arrangements for getting Posting Bills of the Exhibition printed and distributed.

The Council then adjourned at 12 o'clock to 3 p. m., then to meet and join the Local Committee at the City Hall.

AS THE BOARD OF AGRICULTURE,

The Board met, at 12 o'clock, noon. Present: Messrs. Thomson, Ferguson, Burnham, Denison, Ruttan, and Buckland.

The following communications were submitted:—

From the Bureau of Agriculture, dated 27th Feb. 1863, stating that the following gentlemen had been elected members of the Board,

viz: Hon. David Christie, Wm. Ferguson, Esq., Asa A. Burnham, Esq., and Dr. Richmond.

Copy of letter to the Hon. Mr. Eventure, Minister of Agriculture, in accordance with instructions at last meeting of the Board, applying for the 2½ per cent. which had been withheld from the Agricultural grants in 1862, for purposes of agricultural instruction.

From the Secretary of the East Riding of York Agricultural Society, in reference to receiving the Report of York Township Society, a part of such Township being in the East Riding, and a part in the West Riding of York.

From Mr. Henry Strickler, of Waterloo Township, to whom the Flax Scutching Machine belonging to the Board had been lent, reporting favourably in regard to the working of the machine.

Telegraph messages from the Bureau of Agriculture, received by the Secretary in February last, asking for returns of the harvest of 1862, and also a letter of a later date, acknowledging the receipt of such report as the Secretary had been able to forward from the materials at command. These communications were submitted with the view of eliciting the opinion of the Board, as to the propriety of adopting measures for annually obtaining complete and reliable agricultural statistics as soon as possible after harvest.

A letter from Mr. Chamberlin, Secretary of the Canada Commission for the International Exhibition at London, 1862, accompanying specimens of many varieties of seeds, which had been shown at that Exhibition from different countries, and now forwarded for distribution to Upper Canada contributors to the same of grains; also, letters from parties amongst whom these seeds had been distributed, acknowledging receipt of the same, and promising to experiment with and report upon them.

From the President of the County of Grey Agricultural Society, desiring to be informed whether the Mount Forest Branch Society, consisting partly of members residing in the County of Wellington, and holding their exhibition within the County of Wellington, is entitled to a share of the Government Grant from the County of Grey Society, in proportion to the number of members.

From Mr. C. Knowlson, of Peterborough, calling in question, at considerable length, the soundness of the principles upon which the Agricultural Societies of the country are organised and supported by Government, and imputing to some societies, especially in the County of Victoria, gross abuses in the management of their affairs, and suggesting the necessity of due enquiry into the subject.

From Messrs. Wrench & Sons, Seedsmen London, England, with excellent samples of

wheat and other seeds, exhibited by them at the International Exhibition of 1862, and now forwarded for distribution.

From Mr. Jas. J. Ryan, Secretary North Hastings Agricultural Society, desiring to be informed whether the Townships of Hungerford and Iluntingdon could be united for the purpose of forming a Branch Agricultural Society in opposition to the wish of the latter township.

From Messrs. Austin Baldwin & Co., New York, Agents for the Hamburg International Agricultural Exhibition, taking place in July, 1863, several letters, printed circulars, and other documents, requesting the co-operation of the Board in the objects of the Exhibition.

From Mr. C. Sibbald, Brockville, with a sample of exceedingly fine wool, from the Negretti sheep, in Pomerania, Prussia, sent out by a gentleman from that country, with the view of ascertaining the adaptability of the breed to Canada.

From the Treasurers of several Agricultural Societies, desiring to be informed how soon the Government Grant to such Societies will be available, and what will be the amount of the same.

From Mr. Richard Chaloner, Secretary of the Mount Forest Agricultural Society, enquiring as to the efforts of the County of Grey Society to exclude the Mount Forest Branch from the full benefits of the Government Grant, on account of the latter Society consisting partly of members from the County of Wellington.

[The Secretary stated that he had replied at length to this communication, and that from the County of Grey Society, as well as to the enquiries from the North Hastings Society, stating the requirements and limitations of the law in each case.]

From Mr. F. Shanly, lessee of the buildings and grounds lately occupied by the Board as an experimental farm, asking for a certain reduction of rent, on account of repairs and improvements made to the said buildings.

From Mr. John A. Donaldson, of Weston, urging upon the Board the great importance to Canada of promoting the cultivation of flax as a staple crop, and soliciting the influence of the Board in advancing the same. This letter was accompanied by a very superior specimen of raw flax, of nearly mature growth, just pulled from a field in Whitby, and also another sample from Mr. Mitchell, of Norval, of equally good quality, testifying strongly to the adaptedness of the soil and climate to this article of produce.

From the Bureau of Agriculture, Quebec, stating that the grants to the Agricultural Societies would take place at an early day.

From Hon. Mr. Christie, urging the importance of completing the arrangements for the publication of the Canada Short Horn Herd Book.

From Messrs. W. C. Chewett & Co., Toronto, an estimate, obtained in accordance with instructions at last meeting of the Board, of the cost of printing and binding the Herd Book.

From Mr. Denison, as Report of Committee, a rough draft of plan of fittings for the Museum in the Agricultural Hall.

The Board then adjourned to 7 p. m.

MEETING OF THE LOCAL COMMITTEE.

At three p. m. a meeting of the Local Committee took place in the City Hall, according to appointment, the Council of the Association being present as ex-officio members. The Secretary of the Committee read the minutes of the past proceedings for the information of the Council, and several tenders were opened for additional works required on the exhibition grounds. The Committee then proceeded to the grounds, and examined fully the preparations for the Exhibition, which were found to be in a satisfactory state of forwardness and completeness. The Committee then adjourned.

THE BOARD OF AGRICULTURE.

At 7 p. m., to which hour the Board had adjourned, there not being a quorum of members present, an adjournment took place to next morning at 10 o'clock.

FRIDAY, July 24th, 10 a. m.

The Board met this morning, according to adjournment.

Present: Messrs. Thomson, (President), Ruttan, Denison, Burnham, Ferguson, Buckland.

Minutes of yesterday were read.

Resolved.—That a sum not exceeding Two Hundred Dollars be appropriated by this Board to be expended in preparing and fitting up the Museum in the Agricultural Hall, at Toronto, and that the following Committee be appointed for that purpose, viz.: The President of the Board, Professor Buckland, Mr. Denison, Mr. Ruttan, and Mr. Burnham.

Mr. Donaldson's letter on the subject of Flax Culture being considered, it was

Resolved.—That Mr. Donaldson's efforts in promoting the culture of flax entitle him to the thanks of this Board and of the country at large, and the Board will willingly do all in its power to forward any feasible plan that may be proposed by Mr. Donaldson with the view of attracting the attention of Agriculturists to the advantages of devoting a portion of their farms to the cultivation of this product.

In reference to the samples of flax submitted it was also

Resolved.—That the Board desires to express its satisfaction at observing the excellent samples of flax, the growth of this year, submitted by Messrs. Donaldson & Mitchell, as an evidence, if evidence were necessary, of the fitness of the soil and climate of this country for the production of this article.—The Board

trust that the culture of this crop will receive the attention from farmers of which it is worthy, and feel convinced that flax may be made a most important article of export from Canada.

Resolved,—That so soon as a sufficient number of the cattle breeders throughout the country, and of the County and Township Agricultural Societies in the Province, shall each bind themselves to take a copy of the Herd Book of Canada Short Horned Cattle, this Board will undertake to publish such a work, and offer the same at a reasonable price, probably not exceeding \$3 per copy.

Mr. Knowlson's letter on the subject of the organization and management of Agricultural Societies generally, and particularly in regard to the Societies in the County of Victoria, having been considered, it was

Resolved,—That as certain abuses stated by Mr. Knowlson to prevail in the management of the affairs of the Agricultural Societies in the County of Victoria appear to be altogether of a local character, the remedy appears to the Board to lie in the hands of the intelligent and influential individuals residing within the limits of each Agricultural Society, and the Board recommend united efforts to dispel such abuses, if they really exist, on the part of all the real friends of Agricultural progress, and the Secretary is hereby instructed to communicate with the Secretary of the County Society, calling his attention to the alleged abuses, and particularly to any inaccuracies and omissions which may be found to occur in the statement of receipts and expenditures accompanying the annual reports.

On the question of Annual Agricultural Statistics the Secretary was instructed to correspond with the Bureau of Agriculture with the view of ascertaining whether the Government designs to undertake the collection of such statistics in future.

In reference to Mr. Shanlay's application it was

Resolved,—That one quarter's rent be remitted to Mr. Shanlay in full satisfaction of his claim for repairs, in addition to the remission of any charge for fodder remaining in the outbuildings when he entered into possession.

AS COUNCIL OF THE ASSOCIATION.

Mr. Ferguson submitted an account for the services of guards employed at the Exhibition of 1859.

Moved by Mr. Ferguson, seconded by Mr. Buckland, and

Resolved,—That the account remaining over since last Exhibition at Kingston for services of guards employed by the Local Committee, amounting to \$86.75, be paid.

On motion, the Secretary was instructed to procure suitable badges for the members and officers of the Council and the Local Committee during the Exhibition.

On motion, it was **Resolved**—That Dr. Beatty be requested to visit Kingston at an early day for the purpose of giving directions in reference to the internal fitting up of the Exhibition Building.

The Board then adjourned to Saturday, September 19, at the Exhibition Grounds, Kingston, at 2 p. m.

CHEMICO AGRICULTURAL SOCIETY OF ULSTER.—NEW FLAX MACHINE.

We observe from the Journal of this important and useful Society, that the culture and production of Flax occupies a large share of its proceeding, and that its able and indefatigable chemist, Professor Hodges, continues to devote himself to the amelioration and advancement of agriculture, both as a science and an art. At the recent annual meeting of this Society, held in Belfast, we find from the Report that a new American Flax Brake was spoken of in highly commending terms:

MR. GUILD—I beg to bring under the notice of the Chemico-Agricultural Society a new American invention for more thoroughly breaking flax straw, and so preparing it for the operation of scutching that the adhesion of the boom or shoove to the fibre is so slight that the scutching can be performed in less time, and the yield of fibre will be greater, than if the breaking be performed by any machine now in use. Nearly two hundred of Sandford & Mallory's flax and hemp breaks are at work in America, and the saving effected by their use is such that the machine is paid for in from twenty to thirty days. They are simple in construction, portable, no weighing over 10 cwt., do not occupy more than five feet square, require less than one hour power to drive, and no skilled attendance, will break from twenty to thirty cwt of straw per day, taking from it in the operation from 34lbs. to 50lbs. per cwt. of shoove, and will give an increased yield of fibre of from 6 to 38 per cent according to the nature of the straw. No particular machine is required to scutch with afterwards—that operation can be performed by hand or by the ordinary mill stocks; if by the latter, much less speed will be necessary, at least one-third less than if the straw were broken by ordinary rollers. The flax produced is also softer, and more stones can be cleaned to the hand per day, whilst the tow left is clean, and worth nearly double the common scutching tow. The machine consists of an iron frame, carrying two pairs of fluted metal rollers, the flutes being of a peculiar shape; to these rollers is communicated a rapid vibrating backward and forward motion, whereby the straw is crushed and reduced so as effectually to loosen and shake off the shoove, and by an ingenious arrangement a continuous progressive movement is given to it

rollers, as well as the vibrating motion, whereby the straw is fed through in a steady stream. No more hands are required to work this brake than those now in use; the straw is streaked ere being presented to the rollers, and is ready for the scutchers as it comes out. The machine arrived here at so late a period in the season, when most of the scutch mills had ceased working, that I had difficulty in getting the trials I wished. Still, through the kindness of some gentlemen, I am able to give the Society a statement of a few. The Rev. Joseph Bradshaw, Milecross, Newtownards, writes me, under date March 7:—

“SIR,—The flax straw (112lbs.) which was put through your brake (Sandford & Mallory's Patent) produced, when cleaned or dressed, 22lbs. 4ozs.; whilst another lot of exactly the same kind of flax, and same weight, produced 20lbs. 10ozs., thus showing a difference of 1lb. 10ozs., in favour of the American brake.

“I superintended the operations of both parcels from first to last, so that I can guarantee the accuracy of the result. The second lot was done in the ordinary way, having been rolled by wooden rollers, and afterwards scutched at three handles driven by a water wheel; the first lot after being passed through your brake, was likewise scutched in a similar manner by the same men at the same stands, so that I consider there could not have been a fairer experiment than the one I made—I remain, &c.,

“JOSEPH BRADSHAW.

“Mr. Alex. Guild, Belfast.”

And Mr. John Williamson, Roughport, at whose scutch mill a machine has been at work for a month, says in a letter dated the 9th inst.:

“ROUGHPORT, April 9, 1863.

“DEAR SIR.—I have to report to you on the merits of Sandford & Mallory's American brake, which has been at my scutch mill for the last three weeks. I have tried it on various kinds of straw, and find the results as follows:—On very poor and hard straw I found a gain of 1lb. per cwt. over the same broken by ordinary rollers; on medium quality of straw a gain of 2lbs. 4ozs. per cwt., the yield by your brake being 18lbs. 4ozs. against 16lbs. on same straw broken by ordinary method: on very tender straw over-watered the gain was 3½lbs. per cwt. the yield by your brake being 14½lbs. against 11lbs. by ordinary method. I find the flax from your rollers easier scutched, and the yield softer to feel and the quality improved than that rolled in the ordinary way.—Yours truly,

“JOHN WILLIAMSON.

“Mr. Alex. Guild, Belfast.”

It will be seen that the saving in over-watered and tender straw is very great. In America, even better results have been obtained, and I have several certificates to that effect, but I prefer that the machine should make its way here on its merits, as tested here; and I shall feel under obligations to the Society if they will appoint suitable parties to test the merits of the

invention in a thorough manner. There is a machine at work every day at Messrs. Thompson & Co's Foundry, Brown Square, and any gentleman is welcome to bring his own straw and experiment for himself. Mr. Williamson has also kindly offered to show the one at his place at work to any one calling. I may mention here that the machine breaks nemp so thoroughly that little or no scutching is required afterwards. The price complete is £50.

We subjoin the following remarks on Sandford & Mallory's Flax Brake, taken from the last number of the New York *Working Farmer*.

From the inquiries which prevailed among farmers a few months since, upon the subject of Flax Culture, we presume that much more than the usual breadth of land has been devoted to this crop, the present season. We expect to receive shortly the reports of the Commissioner of Agriculture for the month of June, in which the statistics of the Flax crop, so far as ascertained, will be presented, and we shall then be enabled to judge of the prospective yield of this great staple for the year 1863.

We have every reason to believe, however, that the crop of 1863 will be enormous, as compared with that of other years, and consequently, we desire again to call the attention of Flax growers to the unprecedented merits of SANDFORD & MALLORY'S NEW FLAX BRAKE. On page 161 will be found a fine representation of this ingenious and efficient machine, and also many flattering testimonials from those who have used it for months, showing its great superiority to any Flax Brake previously in use. In our August number we shall publish similar recommendations from other parties, as the proprietors desire that the public shall become fully acquainted with those *practical tests* and well authenticated *facts*, which furnish an indisputable criterion of the great merits of their machine. Over SEVENTY of these Flax Brakes have been sold in various sections of the country during the past eight months, and no better test of their efficiency can be asked, than the uniformly favourable reports and opinions of the different operators.

Messrs. SANDFORD & MALLORY are now manufacturing a small machine—costing only \$155—admirably adapted to the wants of the FARMER. We witnessed its operation a few days since, at their rooms in the Harlem Railroad Building, corner of White and Centre Streets, New York, and while the work it performs fully equals in quality that of the larger machines, the labour required to drive it is hardly as great as that of turning a grindstone. Every farmer who has a crop of flax to prepare for market, should order one of these small brakes immediately, as it will pay for itself in one season in the saving it will effect in the preparation of his Flax, and its transportation to market. We ought to thank the persevering industry of the inventors, who

have brought out this new Flax Brake in the very nick of time, when the demand for Flax as a substitute for Cotton, and the scarcity of labourers on account of the war render a machine of this description a prime desideratum in the economy of the FARM.

REARING CALVES ON MILK AND LINSEED MEAL.

When a calf is first dropped it is covered with a thick slime which Dame Nature teaches the cow by instinct to cleanse by licking it off; and if she shows any disinclination, the country people, to induce her to do so, sprinkle it with a little salt and fine oatmeal. This is necessary for the calf's comfort, cleanliness, and health, and is thought by many usefully medicinal to the cow, and on every account should be encouraged. If the calf is permitted to suck the cow it will be more difficult to make it take its meals from the pail, and also fret and annoy the cow, which will not give its milk freely, but retain it for its offspring. But though it will be necessary to prevent the calf sucking its dam for these reasons, it should be fed on the cow's first milk or beestings, which nature designs as its most nutritious food; it is also medicinal, cleansing the bowels of the pent-up meconium or fecal matter secreted there during its confinement in the womb. It should, therefore, get a sufficient portion of this naturally medicinal aliment four times a day, say a pint and a half at a time, so as not to keep it fasting too long, and, at the same time, not to overload the stomach. The calf should get a portion of its own dam's milk as long as it retains its peculiar medicinal quality, which may be known by its coagulating upon being heated or boiled; but older calves should not get any of it, as to them it would be injurious.

When the calf is a week old a little skim milk may be gradually mixed with the new milk, and after a fortnight, a little fine oatmeal, Indian, bean, pea, or linseed meal mucilage may be added gradually, which will enable the industrious and economical housewife to save her milk for the production of butter or cheese, and rear her calves also.

No doubt but the best and most proper food for the calf is its own dam's milk; for it is a true food, in which the components of nutrition are so nicely balanced by the all-wise and beneficent Creator as to set at nought all human compositions; but it is of so much value for human consumption that it becomes necessary to economize it, and make imitations of it, though at a very humble distance; and thus it is that science comes to our aid. Professor Johnson says, in his "Lectures on Agricultural Chemistry," "that while the calf is young, during the first two or three weeks, its bones and muscles chiefly grow. It requires the materials of these, therefore, more than fat, and hence half the milk it gets at first may be skimmed, and a little bean

meal may be mixed with it, to add more of the *casein* or curd, out of which the muscles are formed. The costive effects of the bean meal are to be guarded against by occasional medicine if required. In the next stage more fat is necessary, and in the third week, at latest, full milk should be given, and more milk than the mother supplies, if the calf requires it; instead of the cream a less costly kind of fat may be used. Oil-cake, finely crushed, or linseed meal, or even linseed oil, may supply at a cheap rate the fat which, in the form of cream, sells for much money; and instead of additional milk, bean meal in large quantity may be tried, and if cautiously and skilfully used, the best effects on the size of the calf and the firmness of the real may be anticipated."

This scientific note from Professor Johnson has engaged the attention of many stock masters in Ireland, and, amongst the rest, Mr. C. Beamish, of Cork, who adopted it and brought it to a regular system on an extensive scale. His formula for compounding the mucilage is as follows:—Thirty quarts of boiling water are poured on three quarts of linseed meal and four quarts of bean meal. It is then covered up close; and in 24 hours added to 31 quarts of boiling water, then on the fire, pouring it in slowly, and stirring it constantly to prevent lumps, with a perforated wooden paddle, so to produce perfect incorporation. After boiling 30 minutes, the prepared mucilage or gruel is put by for use, and should be given blood-warm to the calves, mixing it in small quantities at first with milk, say one-fourth mucilage with three-fourths milk, progressively increasing it, so that by the end of a fortnight it will be in equal parts; by the end of the third week, one and a half mucilage to one part milk; by the end of the fourth week the mucilage may be given in double the quantity of milk, as skim milk may be substituted for new milk, and by the end of the sixth week the mucilage will be gradually increased in the proportion of two and a half to one of milk, and from that out to the tenth week, the milk may be gradually reduced, so that by that time they may be fed wholly on mucilage till they are fifteen or sixteen weeks old, when they may be weaned.

During all this time, if too early in the season to put out the calves, they should be comfortably housed, well ventilated, and kept perfectly sweet and clean, with a little sweet hay tied in bundles, and suspended so that they may play with it, and learn to nibble and eat it, and little pounded chalk mixed with salt, given in troughs to lick at pleasure, which prevent acidity in the stomach, and undue formation of curd, small lumps of linseed cake should also be given in other troughs, which they will so learn to suck, if a little pains are taken to put bit in their mouths after they have taken their meals of milk and mucilage. When housed will be advisable to have a separate pen for each calf, of sufficient size to walk about in; to

vent them getting into the habit of sucking each other, and swallowing the hair which, mixing with the curd, by the regurgitating process going on in the stomach, forms round balls, which are indigestible, and which is the fertile cause of the death of so many promising animals. The following scale of the quantity of milk, or milk and mucilage combined, for each calf may be useful, but should be altered according to circumstances:—For the first week the calf may get from 3 to 4 quarts daily; for the second week, 4 to 5 quarts; the third and fourth weeks, 5 to 7 quarts; fifth and sixth weeks, 8 to 10 quarts; six to eight weeks, 10 to 12 quarts per day, and so on, increasing the quantity about 1 quart per week per calf till weaning time, dividing the above quantities equally, and feeding the calves four times a day.

Some parties do not give so much liquid food per day, but make it up by giving them finely cut roots, dry oatmeal, &c.; but the animals are much too young for such food, though they may eat the minced roots, so as train them into their use. Hay tea is an admirable thing also to mix with the mucilage and milk, as it contains a larger amount of nutriment in a soluble form.

In the summer time the calves may be left out on the grass, both day and night, in a fortnight after they are calved, and fed as already described they should be in the house; but a warm, sheltered paddock should be provided for them, and in wet weather they should have access to a covered shed.—*Irish Gazette*.

EXTRAORDINARY OATS.

A correspondent sends us a rich sample of prolific oats, accompanied by the following note. Having heard of a wonderful field of oats on Mr. Gibson's farm of Tullyquhairn on the estate of Argyllland in the "garden parish" of Kirkbean, I visited it, and found that rumor had not exaggerated the produce. The field, sixteen acres in extent, has a crop which rises on an average 6 feet 6 inches in length, and on an average ears I counted respectively 154 and 29 prickles. This fine crop is ready for reaping, and if weather permit, will be in stock before this intimation can appear in your columns.—*Dumfries Standard*, 1862.

THE GREAT INTERNATIONAL WHEAT SHOW.

We have much pleasure in calling the attention of our readers to the spirited enterprise of the Monroe County Agricultural Society, in organizing a great International Wheat Show to be held in Rochester, N. Y., September 8th, 9th and 10th. Our friends on the other side of the lake seem to have taken a course somewhat

similar to our Provincial Association, aided by the Canada Company, in offering large prizes for the best samples of wheat, exhibited in large quantities, especially adapted for seed. We trust that as the competition is open to the British Provinces some of our Upper Canada farmers will enter the lists, with a good chance, we think, of bearing off a prize. Whether they do so or not, they may safely reckon on disposing of their grain at a remunerating rate. Every practical man knows full well the advantage of a change of seed. We wish our neighbors, in this important undertaking, every success.

The following premiums are offered:

| | |
|--|----------|
| For the Best 20 bushels of White Winter Wheat, | \$150 00 |
| For the Second Best do. do. | 75 00 |
| For the Best 20 bushels Red Winter Wheat, | 100 00 |
| For the Second Best do. do. | 50 00 |
| For the Best 2 bushels White Winter Wheat, | 50 00 |
| For the Second Best do. do. | 25 00 |
| For the Best 2 bushels Red Winter Wheat, | 40 00 |
| For the Second Best do. do. | 20 00 |
| For the Best 2 bushels Spring Wheat, | 20 00 |
| For the Second Best do. do. | 10 00 |

Competitors for these prizes will be required to furnish samples of the wheat in the ear and with the straw attached, (say 50 ears of wheat and straw), also furnish a written statement of the nature of the soil on which the wheat grew, method of cultivation, time of sowing, quantity of seed sown, manures (if any used,) and mode and time of ripening and harvesting, and the yield per acre, with such other particulars as may be deemed of practical importance; also the name by which the variety is known in the locality where it was grown.

The Wheat must be one variety, pure and unmixed. The prize to be awarded to the actual grower of the wheat, and the wheat which takes a prize is to become the property of the Society.

It is hoped that farmers in all sections of the United States and Canada, who have good samples of wheat, will compete for these Prizes. It is highly important that the wheat growers of the two countries should meet together and compare samples of wheat raised in different sections. We understand that the money for these premiums has been raised by subscription, among the friends of Agriculture in Western New York, and the time of holding the Fair has been fixed so as to enable farmers to purchase their seed from the wheat entered for competition. A change of seed is also desirable, and it is believed that all the wheat of good quality sent to the fair will find purchasers at a high price. Full particulars can be obtained by addressing the President of the Society, Joseph Harris, Editor *Genesee Farmer*, Rochester, N. Y.

THE CROPS IN NORTHUMBERLAND COUNTY.

We have received a letter from an esteemed correspondent at Cobourg, under date of July 10th, from which we make the following extract in reference to the crops in that vicinity:—

“As I am writing I may state that crops in general look very well here this season, with the exception of hay, which will be light. Our spring was fine and all our crops were got in in fine order, and though the season and ground have been rather dry the crops have grown very well. There was some damage done by both the grubs and wire worm, especially on dry ground, and now I have heard of the *Aphis*, or louse, that did so much damage last year, having been seen on some fields in the neighbourhood. I carefully examined my own fields yesterday but saw none of them. Our spring wheat is just beginning to head out, and is in that stage when the wheat fly damages it. I see a few flies among mine, but I think they are less in number than I have seen them for some years, so, that should nothing unforeseen occur, we have the prospect of an abundant harvest.

The weather has been very warm for some time past, and is forcing our crops forward very fast; fine weather for corn, of which there is more planted this year than usual.

Our root crops are looking well, potatoes unusually so. There is some complaint of the fly taking the turnips, and some farmers have had to sow a second and third time, but this is the case more or less every season.

W. R.

CURIOUS FACTS IN FRENCH AGRICULTURE.

One of the most singular peculiarities of French Law and custom is that which leads to an almost infinitesimal division and sub-division of agricultural lands. M. Pinard, Procureur General of the Court of Douaid, recently gave an interesting account of this remarkable fact in the social system of France, and of its results.

A law, introduced at the time of the first French Revolution, and still in force, decrees that the property shall, at the death of the proprietor, be *equally* divided among his children, and that no deed shall exceed the half of the testator's property if he leaves one child; the third, if he leaves two children; the fourth, if he leaves two or more.” There are thus perpetuated and increased an immense number of small peasant proprietorships; a state of things which is generally held to be a curse on the prosperity of France.

M. Pinard says that the number of proprietors assessed to the land tax was, in 1842, 11,511,841; he adds that each of these estates consists in fact of several parcels, not lying con-

tiguous, or compactly, but in detached portions—probably brought under one hand by intermarriage. Thus, while in 1842 there were over eleven and a half millions of land owners taxed, in 1834 there were of these *parcelles*, or parts of estates, 123,360,338. Deducting from this number everything proper to be deducted, and the rural property of France is believed to be divided into 100,000,000 *parcelles*, and the average area of each *parcelle* is not greater than one and a quarter acres—half a *hectare*.

About five million families, or three-fourths of all the inhabitants of France are engaged in agricultural pursuits. The French peasant clings with singular tenacity to his small estate; he will not sell it; he scorns to be a hired laborer; he is bent on remaining proprietor. He has no capital; often his land does not afford him a livelihood, then he goes to the usurer and borrows. Peasants whose estates yield two and a half per cent. at most, do not hesitate to borrow at the rate of six or seven per cent., rather than sell their land. The end is easy to see; the money-lenders at last get the property. But so poor are the peasant proprietors, so unenterprising, that “landed property is mortgaged to such an extent that the interest payable in consequence is actually equal to one third of the estimated rental of the Empire.”

THE GRUB—A CURE.

During most of past week the grub continued its ravages to an increasing and nearly alarming extent—being almost universal throughout the whole of the northern countries, the cold backward weather very much weakening the plants, and allowing the worm greater freedom for its ravages. Curious enough this year the greatest amount of destruction has been upon dry and early soil whereas in former years the grub used to commit most ravage in heavy wet soils. All this experience tends to show that the only safeguard against grub is to secure good soil, seed, make the land well, and add manure which will aid in quickly advancing the crop. On one farm on which there has been a great deal of injury done by the grub, the farmer having apprehensions that a particular field in which there was a good deal of foggs, would be very bad with the grub, had the land thoroughly harrowed, and before sowing the oats he mixed with the seed a quantity of guano equal to about 1 cwt. to the acre land to be sown, and sowed by the hand the seed thus prepared. The seed was the same that he had sown in several other fields; and while in those where no guano was used the ravages of the grub are extensive, on this field laid down with seed mixed with guano, and on which he apprehended such injury, there is not the slightest appearance of the grub, and the crop promises to be a good one.

other farmer on Deveronside took the same plan with two of his fields, and these are quite free from grub, and exhibit great luxuriance, while the rest of his crop is much injured. We know of other cases where the same plan has been equally successful.—*Banffshire Journal*.

THE FLAX CROP IN CANADA.

The cultivation of flax is increasing every year in several portions of this Province, and the present condition of the growing crop is generally of a very encouraging character. With proper care and handling it will no doubt be turned to a profitable account, as prices must rule high in consequence of the great dearth of cotton. We take the following paragraph from the *Toronto Leader*, of July 21st.—

NEW FLAX.—We have examined a splendid specimen of new flax, grown by Mr. Robert Watson, of Whitby. The stalk averages between three and four feet in length, and will prove of a quality equal, if not superior, to that grown in Ireland, or any other flax growing country. The ear, even at present, is large and heavy, and the crop promises to be most abundant. The quantity of seed expected may be safely estimated at twenty bushels per acre; and the quantity of fibre, when properly prepared for market, not less than 500 lbs. The seed is now worth \$1 50 per bushel of 50 lbs., making the yield \$30 per acre. The fibre is worth \$10 per cwt., which would yield \$50, making, in all, \$80 per acre. These facts should be most encouraging for the farmers of Canada, and devote their earnest attention to such a productive field for the development of their skill and industry, as the cultivation of flax would undoubtedly prove. We are indebted to Mr. John A. Donaldson, of Weston, for information on this subject, on whose authority we have to state that a more beautiful field of flax has ever come under his observation in any county. We shall be happy to afford all interested, the opportunity of examining a fine specimen now in our office.

THE FLAX CULTURE.

We may now safely number flax as one of the crops of this country, as we find the cultivation of it has greatly increased, and we hope, therefore, permanently established. It is a pleasing duty to notice the excellency the crop wherever it has been grown, and we have now before us a sample from the farm of Stephen Wade, Esq., measuring upwards of three feet in length; also a sample grown in a piece of land at the back of the residence of B. Walker, in this town, measuring forty-six inches in length.

The latter is grown from white seed bearing a white blossom, and is said to be a very valuable variety on account of the length and fineness of the fibre.

We hope to hear that there is sufficient energy amongst us to establish retteries and scutching mills, so as to render the flax grown by the farmers a marketable commodity.

The Flax-Scutching machines imported by Mr. Walker, last year, are, without doubt, the most labour-saving and effective for this country, and we have much pleasure in making the following extract from a Belfast paper:—

This superior machine, which carried the prize medal from all competitors at the show at Lille, has borne high testimony to by a gentleman, in a letter read by the chairman at the special meeting of the Munster Flax Improvement Society, held on Monday, in Cork. The following are extracts from the letter referred to:—"The late improvements," says the writer, "made in the machine by the patentee so alter the working power of the machine as to double the quantity of work thrown off by it formerly, giving a superior finish, and requiring much less skill in the operatives." "I consider Rowan's Machine a positive acquisition, and feel confident that at no distant day it will be adopted in this country by those most deeply interested in the prosperity of the linen business.—*St Thomas Home Journal*.

A WONDERFUL EWE.

Our readers, we doubt not, will find the following extremely interesting. There is in the possession of James Boyes, Esq., of Whitehill, Middlebie, a fine old Cheviot ewe, which has obtained the remarkable age of seventeen years, and has given birth to forty lambs. It is reported she is in lamb this year also, and promises, with the kindly attention of Mr. and Mrs. Boyes, to hold out for some years to come. The number of her years on the one hand, and the number of her progeny on the other, render the case of this fine old sheep rather remarkable, and such as, we believe, is but seldom paralleled.—*Annandale Herald*, Jan. 31, 1863.

EXHIBITIONS TO TAKE PLACE THIS AUTUMN.

PROVINCIAL AND STATE:

Upper Canada, at Kingston, September 21 to 25.

Lower Canada, at Montreal, September 15 to 18.

New York, at Utica, September 15 to 18.

Ohio, at September 15 to 18.

COUNTY AND TOWNSHIP:

Lanark County, at Almonte, September 15.

Wentworth and Hamilton, at Hamilton October 14 and 15.

Toronto and West Riding York, at Toronto, October 6, 7 and 8.

South Lanark, at Perth, Sept. 17 and 18.

Durham West, at Newcastle, October 8 and 9.

Officers of Agricultural Societies will oblige by informing us of the days in which their shows are to take place.

The Dairy.

MILK.

There are but few of the natural productions of the animal kingdom more subject to diversity of quality than cow's milk. According to the old saying, "it's what goes in at the mouth that makes the cow;" but the truth of the adage depends upon many other conditions than the quantity and quality of the food consumed. Thus different breeds are not more diversified than are individuals of every specific breed, and this is equally applicable to the quantity of the milk as to the quality. But singularly numerous as these diversities may be, they are all subject to certain chemical and physiological laws, although such as yet may not be properly understood.

The chemistry and physiology of milk are two important topics, and it is very desirable that a knowledge of both were much more extensively and generally cultivated. The motto of the Royal Agricultural Society, "*Practice with Science*," is a golden one; but when we begin to apply the will to the investigation of either the chemistry or the physiology of this important secretion, the natural food of all young animals, we at once find ourselves in the dark, emerging, as it were, from under the canopy of night, into a region where the rays of science are only beginning to shed their enlightening influence upon the face of things. No doubt of late years chemistry has done much in the analytical investigation of the subject, while physiology has been making equally laudable progress; but, as the old proverb, "a little knowledge is dangerous," here applies, this only renders our position at the present time all the more unsafe, and every step we take in advance in a higher degree dangerous.

An instance of this has just occurred at present, a continental chemist having made the discovery, in his laboratory, that the milk of the evening milking is richer than that of the morning! One of our medical journals lays claim to the priority of the discovery, such having been made by its analytical commissioner some ten to twelve years ago. Now as regards the facts here discovered, most intelligent farmers have long been familiar with them, so that neither of our would-be chemical teachers have any right to lay claim to the discovery. We ourselves, for example, were thus taught when serving an apprentice-

ship upwards of thirty years ago—not as a secret, but a fact generally well known; although the contrary doctrine is often advocated by those who dispose of the morning milk, and reserve the evening for throwing up cream; and which, we aver, is highly credited by an unthinking public, who thus allow themselves to be imposed upon.

But although the doctrine is generally sound as to the richness of the evening milk, there are, nevertheless, many individual exceptions to it amongst milch cows, especially under certain artificial systems of management, where food and treatment are both of an abnormal character; and to this it naturally follows, as a corollary, that the degree of richness is widely diversified.

It is this exception and diversity in the degree of richness which renders the course of teaching pursued by the above chemists dangerous, and therefore highly objectionable, when received as a general rule of guidance. In short, granting that the milk of every individual cow in a large herd were analyzed with the utmost accuracy, as to the per centage of butter and cheese, the experiment would only be applicable to that herd, and not to another. And even in this limited light the analytical investigation falls far short of complying with the golden motto, "*Practice with Science*," already quoted. In other words, the practice performed by the chemist in his laboratory differs widely from the practice performed by the cow in the manufacture of milk; but the doctrine taught by the former is evidently the science of the latter practice, so that our objection when reduced to its simplest form, is the appending to the tail of one practice, if we may so speak the science of another.

The reader will readily perceive that the more commendable course advocated, is for chemists to confine their labours to their laboratories, in the advancement of the practice and science of chemistry, and to let physiology and farming alone. Applied to milk, the churn and the cheese-vat tell us better than they can do the quantity of butter and cheese which our milch cows daily and yearly give. Two samples of milk may possess equal quantities of butter and cheese, and yet the value of the two, when sent to market, may be very different in the estimation of competent judges. The difference is equally great in the rearing of calves at home. As to the butter and cheese, the difference of value in the market is often as great as three hundred per cent. Nothing can be more fallacious, practically speaking, than to judge of the quality of the milk exclusively by the quantity of butter and cheese which it contains. "Galen placed a newly-dropped kid near three vessels—one filled with milk, another with honey, and another with wine after smelling at all three, it presently bega-

to drink the milk" (Todd's Cyclopædia, article Smell). It was not the butter and casein that led the kid to prefer the milk, but its odorous properties. Nature hath implanted in animals the organs of smell and taste, and these have their corresponding qualities in the odorous and sapid properties of the food they consume. And milk is no exception from this natural law, its quality and value depending as much if not more upon its odorous and sapid properties than its butter and cheese; for however essentially necessary the latter may be, it is only when accompanied with the former that they possess their real value, giving richness of quality to the natural dietetic beverage. Now, what are these odorous and sapid properties, chemically speaking, upon which the value of milk so much depends? Again, we are all familiar with the difference between the odorous and sapid properties of milk, when the cows are fed upon grass, turnips, grains, hay, or oil-cake and barley-straw, &c.; but we do not know what those differences chemically are, although this is the kind of knowledge farmers stand most in need of, from the laboratory of the chemist.

The practice of the cow involves the conversion of the food she consumes into milk; and when we consider the diversity in the quality of the former, and the comparative uniformity in that of the latter, there must of necessity be a corresponding diversity in the process. But, as has been already shown, this uniformity is more apparent than real, there being a corresponding difference in the colour, smell, taste, and consistency of milk to that of the food; and it is more than probable that this harmonizes with the health of the cow and calf, and the normal quality of the milk, in all cases where the difference in the quality of the food is natural—the opposite being true when it is unnatural. Now we have here normal and abnormal food, processes, and milk; but as yet we are not sufficiently versed in physiology to distinguish the one from the other, so as to choose what is natural, and shun unnatural food—unhealthy cows, calves, and bad milk.

Again, as to the richness of the evening milk, how is this accomplished? Can we by any artificial means so coax the cow as to make her give as rich milk in the morning as in the evening? One reason why the morning milk or that secreted during the night is thinner, may be traceable to the abstraction of more of the food to the reparation of the body. So far, this suggests an equilibrium of forces, or a more equitable distribution of the efforts of tear and wear, and reparation. But how is this to be effected? If the reparation is greater in poor cows than in fat ones, the milk of the former will be thinner. Query, is this the case? Has Mr. Forsall, who fattens his milch cows, done anything to the solution

of the problem relative to an equilibrium of forces? What reply does his churn and his cheese-vat give?—*Farmer's Magazine*.

TREATMENT OF MILCH COWS.—A dairyman noted for the large amount of cheese yielded by his cows, told the editor of the *Dairy Farmer* that one of the secrets of his success in this respect was the careful manner in which he treated his herd. His cows were driven to the stable leisurely. No dogs were used for the purpose of driving the cows, and persons in his employ who were caught striking or in any way abusing a cow, were discharged on the instant. Let the cows have an abundance of food, and take their time in coming to the barn, especially in hot weather; milk clean and regularly; and from fifty to a hundred lbs. more cheese can be made per cow, than when the animals are dogged out of the fields night and morning.—*Boston Cultivator*

TEN RULES TO BE OBSERVED IN MAKING BUTTER.

In making good butter, there are several nice operations to be gone through with which require an eye to cleanliness, forethought, and some little experience.

1. On milking clean, fast, yet gently, regularly twice a day, depends the success of the dairyman.—Bad milkers should not be tolerated in a herd; better pay double the price for good ones.
2. Straining is quite simple, but it should be borne in mind that two pans, about half full each, will produce a greater amount of cream than the same milk if in but one pan; the reason of this is the greater surface.
3. Scalding is quite an important feature in the way of making butter in cool weather; the cream rises much quicker, the milk keeps sweeter much longer, the butter is of a better color, and churns in one-half the time.
4. Skimming should always be done before the milk becomes loppered; otherwise much of the cream turns into whey and is lost.
5. Churning, whether by hand or otherwise, should occupy forty to fifty minutes.
6. Washing in cold soft water is one of the preserving qualities of butter, and should be continued until it shows no color of the milk by the use of the ladle; very hard water is highly charged with lime, and must in a measure impart to it alkaline properties.
7. Salting is necessarily done with the best kind of ground salt; the quantity varies according to the state in which the butter is taken from the churn—if soft, more; if hard, less; always taking the taste for the surest guide.
8. First working, after about twenty-four hours, is for the purpose of giving the butter greater compactness.

9. Second working takes place at the time of packing, and when the butter has dissolved the salt, that the brine may be worked out.

10. Packing is done with the hands or with a butter mall; and when butter is put into wooden vessels they should be soaked two or three days in strong brine before using. After each packing, cover the butter with a wet cloth, and put a layer of salt upon it; in this way the salt can easily be removed at any time, by simply taking hold of the edges of the cloth.

Butter made in this way will keep any length of time required. (J. C. Adams, in *Genesee Farmer*.)

CREAM CHEESE.

Such of our readers as are fond of this luxury, and can procure the materials for it, are requested to try the subjoined recipe, cut from an Irish Journal, the editor of which highly recommends it:—"Take a quart of cream, or if not desired very rich, add one pint of new milk, warm 't in hot water (if necessary) until it is the temperature of milk from the cow. Add a tablespoonful of rennet, let it stand till thick, then break it slightly with a spoon and place it in a frame eight inches square and four inches deep, in which a fine canvass cloth has been placed. Press it slightly with a weight, let it stand twelve hours, then put a finer cloth in the frame—a little powdered salt should be put over the cloth; it will be fit for use in a day or two."

Horticulture.

BLACK KNOT OR CANKER IN FRUIT TREES.

EDITOR OF THE AGRICULTURIST.—SIR,—Desirous of making known to the public, through your useful journal, the cause of the black knot or canker in our fruit trees, according to my observation, so destructive to the plum and cherry tree of this country, I beg to say that I have watched and examined with considerable care for the last six or seven years the progress of this disease, and I have come to the conclusion that it arises from the ova of the curculio, an insect that infests our gardens and orchards during the spring and summer. They not only destroy our apples and plums before they come to maturity, but actually attack the bark of the tree, by making deposits with their stings in the spring of the year, when the trees are in bloom, and when the bark is both tender and juicy, and easily perforated by the tube or sting of the insect. From the time the impregnation is made till the worm or grub is formed, the bark becomes poisoned from its effects, spreading and oozing itself out on the branches and body of the tree, like a spongy

exerescence, till the grub absorbs the entire substance of the sap. The knots then become black, and dry up, and in a short time the vitality of the tree is destroyed. About this time the insect leaves the knot and fallen fruit, and changes itself to its original form, the veritable curculio. In the fall they bury themselves in the ground, or under the decayed bark of the trees, till the following spring, when they again resume their destructive course. I have often discovered from three to five grubs in some of the knots in the fall, resembling in every particular those that affect the young plums. I am therefore well convinced in my own mind that the curculio is the sole cause of the black knot, (and not the tree borer, as some may imagine) and is the cause of losing our fruit and so many of our valuable trees. Now, Mr. Editor, can any of your enlightened readers suggest a remedy by which this evil might be stayed, and thereby serve the cause of the fruit grower, and promote the general interests of Horticulture.

I am, &c.,

THOMAS WILSON.

Kingston, 30th July, 1863.

FRUIT GROWERS' ASSOCIATION OF UPPER CANADA.

The Midsummer Meeting of this Association was held in the Agricultural Hall, Toronto, on Wednesday the 15th day of July last.

The President, Judge Logie, took the chair and after the reading of the minutes of last meeting by the Secretary, the committee, to which we referred the matter of making suggestions to the Board of Agriculture, in relation to the Prize List of the Provincial Agricultural Association reported that the Board of Agriculture had given great consideration to the suggestion presented by the Fruit Growers' Association and had adopted them, with very slight alteration, in the Prize List for the present year. The committee on the Agricultural Bill reported progress made in securing the placing of the Association on the same footing as Agricultural Societies, and the committee was continued.

The subject appointed for discussion at the last meeting was announced to be "Small Fruits," and the Association first took up

THE STRAWBERRIES.

Mr. Leslie reported a new strawberry, "Myatt's Prolific," imported from England two years ago, but had not found it to be very productive.

TROLLOPE'S VICTORIA.

Mr. Arnold, of Paris, said it did pretty well the garden, but if planted in the field, he considered it a very useless berry. It was not to be compared to Wilson's Albany. He could gather a bushel of the latter where he could not hope to get more than a quart of the former.

The "Victoria" was very tender in the winter, and even when carefully covered with straw or bark, the runners were apt to get destroyed.

Mr. Leslie said he had found it a very valuable plant, and as to its hardiness, he thought it was hardier than anything else. It was hardier than the "Hooker," and nearly as hardy as the "Wilson." He would put it next to the Wilson. He spoke of it when grown in soil damp and low.

Mr. Arnold—Mine is a dry, light soil.

Mr. Humphreys said he had not grown it much, but he had found it a very valuable fruit. He would not recommend it for general cultivation, but for amateur cultivation he must recommend it highly. It was a magnificent fruit.

Dr. Johnson said he did not think it a hardy berry. It required much protection during the winter, and was by no means so good a bearer as the Wilson. He would not recommend it for market purposes.

Mr. Fleming said Hooker's berry was quite hardy with him, so was the Triumph de Gand.

Mr. Laing thought it an excellent strawberry, but a very shy bearer. He did not consider it worthy of general cultivation.

Mr. D. W. Beadle would not recommend it for general cultivation. He was afraid it would not give satisfaction in that character. It was almost a shy bearer, certainly not prolific.

Mr. Leslie said it had taken far more prizes than any other strawberry at present cultivated in Canada.

It was determined to leave it upon the list of the Association for another trial.

TRIUMPH DE GAND.

Mr. Arnold said it was not a hardy berry, and the day after it got ripe it turned exceedingly bitter.

Mr. Humphreys had a few only in his garden. He had, however, seen some very fine ones in the garden of a neighbour, Mr. Small. His soil was much heavier than that of Mr. Arnold's.

Mr. Leshe thought it came next to the Wilson as a bearer, and it would keep bearing fully three weeks in good soil. It beat the Wilson in that respect. He thought it was one of the best crops cultivated, so far as his experience went.

Mr. Tyrrell agreed with Mr. Leslie; but he was not acquainted with it sufficiently to recommend it for general cultivation.

Dr. Johnson said it was one of the best berries of the earth. He had picked a crop of it for six weeks in succession. It was one-third more productive than the Wilson, at least. It was sweeter than the Wilson, and quite as hardy. He recommended it for market cultivation.

Mr. Leslie said he would like to add to what he had already said, that it was one of the hardiest berries. It stood the winter as well as Wilson's Albany.

Mr. Fleming thought it a first-rate strawberry, and one which should be cultivated for market purposes. But he must certainly give the Wilson the preference for hardiness.

Mr. Laing considered it one of the first strawberries. It required a strong soil. He recommended it for general cultivation.

D. W. Beadle said his experience was very favourable. He thought very highly of it. It stood next to the Wilson in his estimation; and for productiveness and flavour he preferred it. It made a good market berry. It had a sort of glazy coating, which appeared to protect it from injury in carriage.

Voted upon the list for general cultivation.

MACAVOY'S SUPERIOR.

Mr. Holton said it was an old variety, but a good hearer and of excellent flavour.

Mr. Humphreys questioned whether it was a hardy berry, but it was a very good one.

Mr. Laing thought it ought to be placed upon the list for further trial.

Mr. Leshe said it was an old berry, and it had been dropped by the country. It might answer well some parts. He would like to see it tried.

Mr. Fleming thought it was not worth while to revive it.

Mr. Johnson favoured its being placed upon the list for trial.

Mr. Arnold had an idea that the Society was travelling backwards. He thought there were at least a dozen other varieties that were better.

Mr. Beadle said that unless it were planted near some strong fertilizing variety it would not yield any fruit.

McAvoy's Superior was therefore allowed to drop.

EARLY SCARLET.

Mr. Laing would recommend it for general cultivation.

Mr. Arnold asked whether it was superior to the Jenny Lind? This was earlier, more productive and quite as large.

Mr. Holton thought that both ought to be placed on the list for further trial.

Dr. Johnston said the "Jenny Lind" was the small Early Scarlet. It was about ten days earlier.

Mr. Leslie would recommend the large Early Scarlet for general cultivation. It held its crop longer than any other berry.

Mr. Humphreys would recommend it for general cultivation.

D. W. Beadle thought it was the hardiest berry we had. It stood the most abuse. It would grow amidst shrubs and grass, and in the shade, just where farmers were in the habit of planting strawberries. It was a farmer's fruit. It would grow in spite of all ill treatment, and its flavour was excellent.

Voted on the list for general cultivation.

Russell's Strawberry was mentioned by some of the Members.—D. W. Beadle said he saw it on exhibition at Western New York Fruit Growers' Meeting, in June last. The fruit was pronounced to be better in flower than Wilson, and the size averaged larger. One plant on exhibition had on it 226 perfect berries. Mr. Charles Downing stated to Mr. Beadle that he

had seen the beds at Seneca Falls, and that there the variety evidently succeeded well, and gave great promise.

Raspberries were then discussed, and Brinckle's Orange, Fastolff and Belle de Fontenay were placed on the list for general cultivation.

The Secretary called the attention of the meeting to some berries which Mr. Arnold, of Paris had laid on the table to shew his success in hybridizing. It had been questioned whether the native Black Cap could be hybridized with the Antwerp, and it was a very desirable thing to procure a raspberry as hardy as the Black Cap and possessing its flavor, and having at the same time the size and pulpiness of the Antwerp.

Mr. Arnold said he had carefully hybridized with the "Belle de Fontenay." The specimens were from seed raised in 1860. Last year the pistils had scarcely developed themselves at all. This year they were much larger. He lived in hopes that next year they would be much more perfect than they are now. There was nothing so far gained, only it showed the possibility of hybridizing. The canes were now standing seven feet high, and were totally uninjured by the frost.

GOOSEBERRIES.

Mr. Fleming recommended the growing of the stronger kind of gooseberries, in clayey soil, and then he thought mildew was not to be feared.

Mr. Arnold said his experience was different.

Mr. Humphreys said he had cultivated gooseberries for ten years in a clayey soil, and had never had a mildew.

Mr. Fleming would recommend the Ploughboy, Phoenix, Langley's Green, large Early Yellow, and Late Yellow.

Mr. Leslie recommended the "Yorkshire Lad."

Mr. Arnold spoke favourably of the Downing's seedling.

Mr. Johnston recommended Houghton's seedling, as good for light soil, and not subject to mildew.

Mr. Arnold said he had no trouble in raising any quantity of gooseberries of any sort for the first two years, but after that he was bothered with mildew.

Mr. Fleming said he had cultivated these gooseberries for ten years in succession, and always had heavy crops.

After discussion it was agreed to place the "Ploughboy," the "Irish Red," "Langley's Green," "White Smith," "Warrington," "Crown Bob," "Sulphur Yellow," "Heart of Oak," "Phoenix," "Late Yellow," "Early Yellow," and "Houghton's Seedling," upon the list for cultivation.

Dr. Johnston said he would give a receipt for preserving gooseberries from mildew. He took a pine board, bored a two inch augur hole through the centre, and then cut the board through the centre of the hole. He then put the boards under the bushes, with the stem of the tree in the centre of the hole. About the

time mildew came he sprinkled the bushes with a mixture of two quarts of salt, one quart of slacked lime, and three gallons of water.

Mr. Fleming said the late Hon. Mr. DeBlaquiere used a couple of shingles instead of expensive boards. He thought Dr. Johnston's plan was too troublesome and expensive.

A letter from Andrew Murray, Esq., Assistant Secretary of the Royal Horticultural Society, England, was handed to the Secretary by Mr. Leslie, inquiring what was the effect produced by our Canadian climate, soil, &c., upon varieties of Apple introduced from England, and what upon returning the same variety back to the place of its nativity. The letter was referred to a committee, composed of Messrs. Fleming, Leslie and Humphreys.

It was resolved to discuss grapes, peaches, pears and apples at the next meeting.

A vote of thanks to the Board of Agriculture, for the use of their commodious room, was passed, and the Association adjourned, to meet in St Catharines on Wednesday the 11th day of November next.

FRUITS EXHIBITED.

Mr. George Leslie, Toronto, exhibited 14 choice varieties of cherries, including "black Tartarian," "Fellowes' Seedling," "Waterloo," "Carnation," "Mayduke," "Large red Bigarreau," "Black Eagle," "Elkhorn," "Elton," "Napoleon Bigarreau," "White French Gaique," "Belle de Choisy," and two very fine new seedlings: four varieties of strawberry, viz "Triumph de Gand," "Wilson," "Myatt's prolific," "Trollope's Victoria," and five samples of the cherry and white grape currants.

Mr. J. Johnston, of Norval, exhibited four varieties of currants, viz., black Naples, white grape, Prince Albert, and Victoria, and five varieties of gooseberries, including Crownbob Whitesmith, Houghton seedling, white eagle and yellow sulphur.

Mr. J. D. Humphreys, of Toronto, shews five varieties of cherries, viz., black eagle; black Tartarian, belle de choisy, Fellowes' seedling and Napoleon Bigarreau, the white and red Antwerp raspberries, and the white and red grape currants, with four varieties of gooseberries, viz., sulphur yellow, red Warrington, Whitesmith and ploughboy. His fruits were as usual fine and choice.

The Secretary exhibited two specimens of currants of the cherry variety, very large and fine.

CULTIVATION OF THE FILBERT.

[Having received several enquiries respecting the culture of the filbert in Canada, I transfer to our columns an article from the *Journal of Horticulture*, from the able pen of Mr. Robson, head gardener to Viscount Holmesdale, of Linton Place, near Maidstone.

Kent, the most celebrated fruit district of England, and for the growth of filberts in particular. Much of the success of filbert culture depends on a correct system of pruning; a matter, to which from the little we have seen on this side of the Atlantic, too little attention is paid.—Eds.]

Whatever differences of opinion may exist respecting the management of most of our hardy fruits in regard to the amount of pruning they require, there is no question that the knife, or it may be the saw, is more freely used in the treatment of this tree than in that of any other. It is not too much to say that in the case of the filbert fully nine-tenths of every year's growth are cut away, and often more than that; and, if we except the grape vine when pruned on the spur system, there is certainly no other fruit tree on which the knife plays so conspicuous a part. As the filbert is in general a free and rather fast-growing tree, the abundance of wood to choose from enables the cultivator to select that which is best adapted to give the shape he wants. This is done with so much exactness, that, in a well-managed orchard of this fruit, one tree so much resembles another that the cursory observer might suppose that they had all been turned out of one mould. A glance at the way this is done in Kent, where so many acres are under this crop, will assist the amateur in keeping the trees within reasonable bounds, and also in making them more fruitful than if allowed to run rampant amongst other trees less rigorous than themselves. To make this more clear, we will divide this subject into the following heads:—

SOIL AND SITUATION.—Although occasional plantations of this fruit may be formed on stiff, heavy ground, such plots are the exception, or they rarely prosper and are fast disappearing. A dry, stony soil, not too shallow, without anything pernicious in the subsoil, is the one the filbert likes best; and many hundreds of acres of the best plantations in Kent are on the slopes of hills having limestone at no great depth below. Occasionally they are also planted over the chalk, but the result is less satisfactory.

Generally speaking, the soils which overlie Kentish ragstone, or its substitute, which in local language is called "Hassock" (a soft tone unable to endure frost), are the best; and in tillage quantities of such stones as large as a half-brick are turned up and mixed with the surface soil, presenting anything but an inviting appearance. In such soils both the Bert and Morello cherry seem to thrive better than in ground of any other description, and, what is equally important, they bear well so. Such a soil is, of course, a stranger to stagnant water; and though the substratum is hard when first broken up, there is nothing

in it pernicious to vegetation, as seeds will vegetate in it soon after being thrown to the top. Being of a half-sandy nature, it may with advantage be used as a fertilizer to soils of a contrary description. All the filbert plantations are not on soil of the above description, but it is generally admitted that on such the best crops of fruit are produced. The nearer, therefore, that it can be imitated elsewhere, the greater the chance of success.

Situation has also something to do in the matter, and when a choice of this exists the western slope of a hill is the best position; but in the valley of the Medway plantations are formed on all inclinations, dryness of bottom being one of the conditions first of all insisted on, and a soil not by any means meagre in regard to depth is also necessary. The other conditions are all subservient to them. Shelter from very high winds may be useful, but this is of less consequence than for most other fruits; but very exposed places, as the tops of naked hills, are too cold and ungenial, and, though the tree will thrive there, it is seldom fruitful enough to be satisfactory. Though blooming amongst the earliest of all our fruits, the tree is far from being the hardiest. The beautiful little tufts of crimson which form the female or nut-bearing blossom are very sensible to frost, and are often damaged by it. The long green catkins or male blossoms which hang all the winter are hardy enough; but if destroyed before the others make their appearance, the crop, of course, is bad. Generally speaking, however, the well-being of the crop depends on other conditions more than this; and so many things are necessary to perfect success that the crop of filberts is, perhaps, more capricious than that of any other fruit, although when good nothing yields a better return. Upwards of a ton weight per acre has been gathered in favourable seasons; but as filberts are often planted in conjunction with apples, pears, and other fruits, the return is limited in consequence of the ground taken up by these. Nevertheless, the cultivator generally favours his filbert trees if they do well, and the others are cut away.

PREPARATION OF THE GROUND AND PLANTING.—Ground of the above description is generally trenched, and all hard stones that will do for road-making purposes are taken out; but such soft ones as are of no use and likely to be split up into fragments by the winter frost are left in. I think about 9d. per rod for trenching the ground, and about the same per ton for such useful stones as are taken out, is often paid, and the increased value of the land well repays this outlay. This being done early in the autumn, the young trees are planted as soon as they can be conveniently got in, taking care to do this, if possible, when the ground is dry.

Many growers raise their own plants; in

fact, it is common for most Kentish farmers who grow fruit for market to have a nursery where they rear large quantities of currants, gooseberries, and the like, as well as graft and propagate apple and other trees by the hundred. In such places filbert trees are plentiful enough, and they are raised from suckers, which are produced in great numbers when required, as will be shown hereafter. Small plants having about ten inches or a foot of clear collar, and then spread out into branches in all directions, are selected. Assuming that the plantation is intended ultimately for filberts only, they are planted about 12 feet apart each way if the ground is good; but if not so likely to suit them, 10 feet might be substituted. Generally currant trees, or it may be hops, or both, are planted between to occupy the ground while the filbert is growing, and sometimes standard apple, pear, or plum trees are planted at wider intervals to remain as permanent trees; but this plan has been in a great measure abandoned, and everything made subordinate to the filbert, when it is intended to have a first-rate plantation.

If the ground at the time of planting has been recently trenched, and much of the sub-soil thrown to the top, it would be better to have a little mellow fine earth that has been long exposed to the atmosphere, and to give each tree a spadeful or two to start its roots into. This is frequently done with hops, and also other trees where necessity obliges the planting so quickly after the trenching. Treading around the plant when dry weather sets in about April will be necessary. A low growing crop is sometimes taken off the ground. This, however, will suggest itself to the cultivator, but I have seen plenty of instances where the farmer paid £6 and upwards per acre rent, and where he found it to his advantage to allow the newly-planted trees—filberts, gooseberries, currants, or hops—the whole of the ground, occasionally stirring it during the summer, and, of course, keeping all the weeds down. If the intending cultivator thinks he cannot afford filberts the whole space, let whatever vegetable crop he takes off the ground be kept clear of the filbert trees, and remove it as early in the autumn as possible. I may also observe, that if currants or gooseberries be planted between the filbert trees, they may be from 5 to 6 feet apart, taking care that those nearest the filberts are cut away in time to prevent their injuring the more permanent occupiers of the soil.

PRUNING THE YOUNG TREES.—It has been remarked that no fruit tree is cut with more severity than this, and long experience has proved that without doing so a good crop of fruit need not be looked for. Some judgment is also wanted to start the tree into the proper shape at first, and a peep at those of mature age will show how this is to be effected. The universal custom in Kent is to train

the tree into a sort of basin shape, not unlike the ribs of an umbrella when inverted; and in the adult tree, the edges or tips of all the branches radiating from the centre being of a uniform height of about 5 feet, a great similarity exists amongst the trees which compose a plantation; and if the ground is level the eye of the spectator will skim over the whole. Their height and uniformity are very striking after they are newly pruned, but, of course, when the summer's growth is going on they are widely different, and show as rampant a growth as that of any plant I am acquainted with, some of the shoots being little short of 8 feet long, straight and tapering like an osier wand. Those of the young plants are rarely so long, and it is these that we have more especially to direct our attention to.

In the young plants all central and all gross shoots must be removed, and such small ones as are of a spreading tendency are left, being shortened at the tops. It will be as well to describe the Kentish mode by which another gross growth is in a great measure prevented from taking place when the former one was removed, which is very simple, and might in some cases be copied elsewhere with advantage. It is simply to cut out the coarse rampant shoot with a coarse-toothed little hand-saw, making a sort of haggling cut, instead of the clean one caused by the knife. This rough, haggled, cut, with its occasional splintering of the top, is less likely to produce another similar shoot from its base next year than if it were an evenly cut one; hence the practice of using the saw, not in pruning the young trees only, but also those of more mature growth.

The pruning of the first year leaving only five or six side shoots, the number will not be much increased the second year, only a fork may be here and there introduced when the space seems wide. The rank, coarse wood being cut away as before, and the small, short-jointed pieces only left, and these shortened to the suitable length. Keep the centre perfectly open so that the sun may shine into it and on the north side as well, or perhaps, better than on the south side of the tree. In the third year some tiny shoots will indicate, probably, the presence of fruit-bloom; leave a few of these shortened to about three inches or less, and keep the remainder of the tree pruned to the shape recommended above, which is that of a basin or bowl, and do not let the permanent branches or ribs be too thick.

PRUNING TREES OF MATURE GROWTH.—If the ground is suitable, the summer shoots will be long and straight, like many of the basket-willows, and sometimes they are used for the same purpose. From 3 feet to 6 feet is the average length. The first thing done when pruning commences in the autumn is to look

over all the trees, and pull out by a jerk of the hand all the gross strong-growing shoots in the centre. Generally they will come out pretty well, and bundles of these are very useful for tying up plants, or such out-door flowers as only require a slender stake. The rest of the pruning is done with the knife and saw, the latter being used to cut off such strong, gross shoots as it may be necessary to shorten to a couple of inches or so, and the more slender are cut back with the knife. It is seldom that more than 4 inches are left of any young shoot, and very often much less.

The short-jointed small wood generally produces the most nuts, and those most exposed are the best; but nuts are also grown near the centre of the plant, on spurs of the long main branches, and some on the subsidiary ones. Occasionally a large limb may be cut out, but this is not often the case unless disease or appearance of too much crowding points it out as necessary, or when the tree has exceeded its bounds. In the latter case it must of necessity be cut back, and the occasional bringing forward of young branches from the centre will enable this to be done on the same principle that other fruit trees are pruned; but the filbert will bear rather a greater amount of spurring-back than any tree I am acquainted with. The quantity of young wood left on an adult tree each year at pruning is exceedingly small, and in most other fruits would produce disease; but filbert plantations last a great number of years, and their bearing properties are rather enhanced than diminished by age. Each succeeding year's pruning leaves them in the same uniform shape as before, which is an open cup or basin-shaped centre, with the outer edges not more than five feet high. Of course, exact training to this cannot well be accomplished without tying, which is rarely adopted; but the cutting at the edges to the height above indicated leaves the tops parallel with the ground surface; and, though there are some branches near the outer edge between the ground and the edge of the basin spoken of, they are of less consequence than the framework of the tree forming the shape here described.

VARIETIES.—There are two or three varieties of filbert bearing local names; one with a thin shell, and the covering of the kernel of a deep pink colour, is esteemed the best at table, but it is not the best bearer. Cob nuts are more popular than filberts, being larger and producing more weight per acre, and they certainly keep longer; but so much depends on public taste, that those who grow them for market of course cultivate those most likely to pay best, taking into consideration the peculiarities of their position and other features. A large variety of Cob, called *Spanish Cob*, was much in fashion a few years ago, but it is less so now, in consequence of its lacking the

flavour of smaller nuts; but the amateur who wishes to grow a few for his own use might have a few of both filberts and cobs. The latter, after being harvested and put away, last longest; but while both are good, the filberts will be the greatest favourites.

MANURE FOR FILBERT PLANTATION.—Very rich manure, as farm-yard dung, is seldom used, as tending to too much grossness. In this district, where such large quantities are grown, woollen rags, or a sort of mill waste called Shoddy, which is a combination of cotton and woollen waste obtained in the carding of the one and dressing of the other, are largely employed. These substances, which to ordinary observers might almost appear "inert," are great favourites with the Kentish farmers. The rags, it is proper to observe, are chopped into pieces not larger than half the palm of the hand, the other separated by tearing it open. Other manures are also occasionally employed.

PREVENTION OF SUCKERS RISING AT THE COLLAR.—This is very effectually done by scooping away the earth all around the collar in October, forming a sort of basin about a yard or more in diameter, and exposing the main roots. The action of the frost on these roots is said to prevent the tree exhausting itself with suckers, and certainly none are produced when this treatment is adopted. The ground is again made level at the time of digging in March, the trimmings being all previously conveyed away; and if all go on well a good crop of nuts is looked for. As with all other crops, this is, however, not a certainty, as many extensive plantations did not last year produce on an average more than a bunch of nuts per tree—not sufficient to be worth looking for, while in favourable seasons from 10 to 20 cwt. of fruit per acre has not been uncommon. So much depends on the season, that with all the advantages of situation, skilful management cannot always command success in this instance any more than in many others; but well-directed skill, aided by other favourable conditions, certainly renders success more likely.—J. ROBSON, in *Journal of Horticulture*.

RELATING TO STRAWBERRIES.

1. *The Fragarium.*—This should be a dead flat and lying open to the morning, midday, and setting sun. It should be free from the shade of trees, and from the intrusion of their roots. A pump should be near.

1. *Soil.*—The best soil for strawberries is that which most abounds in potash, which is the grand constituent of a strawberry. Any soil can be made to bear them. They, like roses, have an affinity for alumina; but I would undertake to grow them in sandy or

chalky soil. The best compound is in equal thirds—clay, black dung from a decayed heap, and sand or ashes. If the land is stiff clay, unfermented manure is better than decayed, and sand or sifted cinders, or burned field ashes are indispensable to keep the land open. The land, of whatever kind, should be deeply trenched.

3. *Planting*.—The best time for planting is in the spring, or early in the summer. The runners must be kept off. My new plantations, with the exception of spring-planted trial plants, were put in by the 24th of July, and are now strong plants that will fruit next year. August and even September may not be too late for sorts of quick growth and establishment; but they are too late for sorts generally, and for such seasons as we have lately had. Such late-planted sorts should be disfruited in the spring, and should have their runners kept off; and in the year following they will come out in their true form and will well repay for the delay. The runners, unless wanted, should be at all times cut off. After fruiting, dress the plants and water them "thoroughly;" they will then make fresh roots from the base and send up protective foliage, and look handsome in winter. A layer of two inches of new maiden earth from the country placed over the ground is a capital dressing.

5. *Manures*.—Cowdung is the best, as it contains more potash than any other manure. Guano and wood ashes, which also contain potash, are good, but they must be used prudently. I use chiefly black, decayed dung, half-inch bones, and nitro-phosphate; the two last I use at planting time, the other is used at all times. I also use liquid manures at the spring, which I put, not into the ranks, but between the ranks (2 feet apart); and this, washed down by the rain, affords food for the plants in fruiting time; this is the safest place for guano. If guano is used as a liquid, one handful to a stable-bucket of water is sufficient; this may be put into the ranks.—W. F. RADCLYFFE, in *Florist and Pomologist*.

HAMILTON HORTICULTURAL SOCIETY'S EXHIBITION.

The second Exhibition of the Hamilton Horticultural Society was held in the Mechanics' Institute, on Wednesday the 5th inst. The day was remarkably fine and very suitable for the occasion. In the afternoon and evening the Hall was crowded by the youth and beauty of the city, old and young appeared seemingly much interested, and to enjoy the scene. The exhibition as a whole, was one of the best we have seen in Hamilton as a July show. Flora was more fully represented than she has been hitherto at the same period of the season. The foliage plants from the gardens of W. P. McLaren,

Esq., and John Brown, Esq., were worthy of the highest commendation. The *Caladiums*, *Marantas*, *Coleuses*, *Crotons*, &c. &c., were beautiful, *Cyanophyllum Magnificum* was in both collections. This new noble stove plant is a native of Central America and highly worthy of its name. It is said to be without exception one of the finest plants yet introduced, in its truly magnificent large oblong ovate leaves, the upper surface is of a remarkably rich, deep, metallic tinted olive green, which is transversed lengthways by a large prominent silvery grey mid rib, the entire surface again is crossed by minuter light veins (netted as it were) diverging horizontally from the centre mid rib to the margins. Grand and beautiful it is. The *Fuchsias* and green house plants from the gardens of John Brown, John Young, and R. Jason, Esquires, were good and much admired. The scarlet *Geraniums* from the gardens of Isaac Buchanan, Esq., M.P.P., Auchmar House, Claremont Park, were much commended for their fine healthy foliage and large trusses.

It is pleasing to notice that the amateurs are making considerable advancement in many respects, their production of window and other plants was very creditable, also their cut flowers and table bouquets.

The fruit departments was well represented, *Cherries*, *Gooseberries*, *Currants*, *Red* and *White Raspberries*, &c. &c., with some very fine grapes from the Orchard Houses of W. P. McLaren, Esq. The *gooseberries* and *currants* were not fully ripe but very large and fine. The most attractive feature in the fruit department was the fine display of Orchard House trees in a full crop of fruit, some grapes and peaches ripe, and others fast approaching that stage these trees were from the gardens of John Young, W. P. McLaren and T. C. Kerr, Esquires, all very creditable to their owners and their gardeners; also an indication of what may be done. Fruit culture must advance and we trust that the time is not far distant when many will see its importance, put their shoulder to the wheel and push onwards.

There was a good display of *Vegetables* of all kinds, *Cabbages*, *Carrots*, *Peas*, *Onions*, *Potatoes*, *Salads* of every description.

The whole went pleasantly off, giving a good return to the society.

GEO. LAING.

Hamilton, 17th July 1863.

THE WINDING UP OF THE DWARF APPLE TREE QUESTION.

TO THE EDITOR OF THE AGRICULTURIST.—My excuse for not answering Mr. Arnold before this is on account of the spring work keeping me so busy, but now that is past, and election is over, we must again return to duty, or to the Dwarf Apple Trees. And in doing so I will be as brief as possible, only referring to a few of the principle points.

Mr. Arnold first says, the discussion should be ended in the same year in which it began; or it might inflict a punishment upon your subscribers, if our communications are uninteresting. Let them speak for themselves, or, Mr. Editor, you should not publish what would be a damage to your many readers. He next says, he is unable to perceive in my last article one idea on the subject that was not replied to in his last, and he calls on you for proof; but it seems you remain silent, I suppose unable to decide in his favour. He does not appear to be well pleased with my artificial way of making dwarf trees, notwithstanding the authors and witnesses that I have produced in proof of that being the way to make such trees. But he still asserts that his trees bear when two or three years old, which we do not deny, for there are exceptions to general rules in all cases; but it would be much more satisfactory to us for him to produce evidence that others have done so too; which he has not done, and it looks strange to me that his trees bear when mine and others do not. I have looked over your fruit growers' report, where you have had replies from over sixty fruit growers, and I find not one who says their trees bear so young, and remain so small as Mr. Arnold's. Again, Mr. Editor, I would not have you overlook what he said in his former article, that his dwarf trees had grown 35 feet in circumference in ten years. Will standards grow larger in that time? And now he defies me to make his trees grow like others. Again, when I requested him to send me the trees, payable when they answered his description, which of course would be in a year or two, he says ten or twelve years would be too long for him to wait. Now sir, if they grow so large and it takes them ten or twelve years to bear or prove themselves to be dwarf trees, they won't answer me. Still, he says, his trees begin to bear when two and three years old. Who can unravel these mysteries? Let your readers decide how it is.

Again, he says, why not accept of my proposal and put the trees into disinterested person's hands that they may be tested? This I answered in my last. Again, he says, if I send my order accompanied with the cash the trees will be sent. This, Mr. Arnold, I have been in the habit of doing, and by your calculation have always been cheated. Therefore you see the necessity of being very cautious. And we hope that what has been said will be a lesson to others in making them careful from whom they get their trees. For if there are real dwarf trees, as you say there are, we seldom get them, but the nurserymen substitute standards in the place of genuine dwarfs. If so it will shortly be known, and let a stop be put to such deception and the nurseryman exposed. Here let me say, that I seldom get my order filled by the nurserymen correctly, but find when they come to bear that something has been substituted that I did not want. Under these circumstances no wonder

the country is so backward in growing fruit. But, Mr. Arnold says, every thing sent out from his establishment is warranted correct. This I am very glad to hear, and would recommend him to be well patronized. I have received the half dozen dwarf trees from Mr. Arnold as he promised, and with many thanks, hoping that some time I shall be able to return the compliment. I will try and do him justice in their cultivation, and report accordingly.

Yours, &c., R. B. WERDEN.
Picton, July 15, 1863.

Veterinary Department.

THE HORSE—STRUCTURE AND DISEASES OF THE EYE.

Among the many ailments of the horse, we find injuries and diseases of the eye of a very common occurrence in this country. Before proceeding to mention the diseases, it will be preferable to give a short description of the anatomy of the eye.

The organ of sight consists of the eyeball and the accessory appendages, or those parts which are employed to move, adjust, and protect it from injury. The globe or eyeball is of a spherical shape, composed of a membranous sack, in which is contained transparent humours which serve as a reflector to the light. The eyeball is attached to the orbit by several muscles, and reposes upon a mass of adipose tissue, which acts the part of a cushion, serving to maintain the eye in its proper position. The membranes or tissues are three: First, the sclerotic and cornea; the second is made up of the choroid, iris, ciliary processes, and ciliary ligament; the third is formed of the retina and its continuation. The humour or reflecting mediums are also three, viz., the aqueous, crystalline lens, and vitreous humour. The sclerotic coat is a dense white fibrous membrane extending from the optic nerve and continuous with its sheath, to the circumference of the cornea, forming nearly four-fifths of the whole external tunic. The tendons of the intrinsic muscles of the eyeball become expanded over this coat, forming a thin, glistening layer, known as the white of the eye. The internal surface of the sclerotic is in contact with the external surface of the choroid coat, being united by delicate cellular tissue and minute nervous filaments and arteries. The anterior opening of the sclerotic is of an elliptical form, presenting a sort of double-bevelled edge, into which is inserted the cornea.

The cornea occupies the anterior portion of the eyeball forming the remainder of the external tissue, is perfectly transparent, and is inserted like a watch glass in the sclerotic, being firmly attached to the latter. The outer surface is covered by a continuation of conjunctives, the inner surface by a delicate membrane, from which is in part secreted the aqueous humour.

The second tunic is formed of the choroid, iris, ciliary processes, and ligament; the first of these is a very thin vascular membrane of a deep brown colour, situated under the inner side of the sclerotic, and having the same general form, its internal surface in contact with the retina posterior, the choroid is pierced for the passage of the optic nerve, near the junction of the sclerotic and cornea, it is connected with the ciliary ligament, which is continuous with the circumference of the iris. The choroid consists of a network of bloodvessels, and made up of three layers; the internal one contains granules of black pigmentary matter. At the posterior wall of the choroid the black pigment is replaced by a bluish layer called the *tapetum lucidum*, or bright carpet. The ciliary ligament is a white ring of circular fibres, forming the union between the external and middle tunic of the eye, also serving to connect the sclerotic coat and cornea with the iris or curtain.

The ciliary processes are formed by the plates and folding of the middle and inner layer of the choroid. They vary in number from sixty to eighty.

The iris—so called from its variety of colour—is a thin curtain suspended in the aqueous humour, immediately in front of the crystalline lens, perforated in the centre by an elliptical opening called the pupil, (this opening in the human subject is round). The circumference of the iris is connected with the choroid and ciliary ligament. The anterior surface is marked with a number of lines, all converging towards the pupil. The posterior surface is covered with a deep coloured pigment called the uvea. The iris is made up of two sets of involuntary muscular fibres, radiating and circular. The former converges towards the pupillary opening, and has the power of dilating it, the latter becomes blended with the termination of the radiating fibres, producing contraction of the pupil. The third coat consists of the retina and its continuation. The retina is the terminal expansion of the optic nerve, and extends over the internal surface of the choroid between it and the vitreous humour,—is made up of three layers.

The three transparent humours are the aqueous, in front; the crystalline lens, in the middle, and the vitreous humour behind. The first is perfectly transparent, and composed principally of water, secreted by the lining membrane of the chamber in which it lies, and capable of being renewed in case of a puncture letting it out.

The vitreous humour occupies about four-fifths of the whole interior of the eyeball; is also perfectly transparent, and of the consistency of thin jelly, having albuminous matter, and enclosed in a delicate membrane called the hyloid membrane, from the inner side of which numerous laminæ or plates are sent inwards,

forming cavities which are for the purpose of keeping the vitreous humour in its form.

The crystalline lens is situated immediately behind the pupil, in a cavity in the anterior portion of the vitreous humour, and is surrounded by the ciliary processes, which slightly overlap its margin. The lens is covered by a transparent elastic membrane, called the capsule of the lens.

The appendages of the eye are the eyebrows, the eyelids, the *membrana nictitans* or haw, the conjunctive and the lachrymal apparatus. The eyebrows in the horse are merely rudimentary and are those eminences formed by processes of frontal bones, furnished with a few scattered hairs.

The eyelids are those two movable curtains which serve to cover and protect the eyeball; the upper eyelid is the larger and more movable of the two, their external surface is covered with fine soft hairs, internally they are lined with the conjunctiva or continuation of the membrane covering the eyeball. Forming the framework of the free border of the eyelids are two fibro cartilaginous plates called the tarsal cartilages, within which are lodged the ciliary follicles which secrete a fluid serving to lubricate the eyelids.

Situated in the nasal angle or inner canthi is the *membrana nictitans* or haw, composed of fibro cartilage of an irregular form, being thick at the base and thin anteriorly, behind it is continuous with the pad of fat lodged amongst the different muscles of the eye. By the contraction of the straight muscles of the eye the globe presses upon the pad of fat, on which it rests, and thus forces the *membrana nictitans* outwards, and more or less covers the transparent cornea. Its use is to remove any offending agent from the surface of the eye in some diseases, as in Tetanus, it is forced outwards and remains so. When the eye is irritated the haw is always prominent, and in some cases is mistaken for the cause of the irritation, and removed. The operation is not only useless but decidedly injurious.

The conjunctiva is the mucous membrane of the eye, is continuous with the skin of free borders of the eyelid, lines its whole inner surface, also covering the anterior portions of the *membrana nictitans*, likewise the cornea, and is continued down the lachrymal duct, becoming continuous with the mucous membrane of the nose.

The lachrymal apparatus consists of the lachrymal gland and duct. The gland is situated between the external straight muscles and orbital process of the frontal bone. The secretion from this gland leaves by numerous straight ducts, which open out on the upper eyelid. This secretion constitutes the tears which are intended to wash the conjunctiva clear of any foreign body. The tears pass from the outer to the inner angle to the lachrymal duct and are

then conveyed by means of the duct to the nose.

A very common disease of the eye is simple Ophthalmia or conjunctivitis. This proceeds from many causes; the most common is the introduction of foreign bodies into the eye, as a lash with a whip, chaff or hay seeds, also caused by foul stables, especially in hot weather, when there is a great quantity of ammoniacal gas generated, arising from the decomposition of the urine, &c.; this disease also occurs sometimes as an accompaniment of catarrh or inflammation in the head.

The symptoms of simple ophthalmia are more or less closure of the eyelid, watery eye, with copious secretion of tears, the conjunctiva is swollen and in some cases attendant upon external injuries, there is a protrusion of the conjunctiva beyond the eyelids, also of the hawk, and generally more or less cloudiness of the cornea, owing to the nutrition of the part being interfered with.

The treatment of this disease depends much on the cause, hence the necessity of careful examination. If caused by a foreign body it must be removed, which can be done either by the introduction of a feather or removing it with forceps. The first layer of the cornea is covered with scaly epithelium, and chaff, hayseeds, &c., are very liable to become embedded there; in some cases these require a little force to extract them. After the offending agent is removed, the application of cold water to the eye is useful, also some mild astringent, as the sulphate of zinc, also a small dose of laxative medicine conjoined with low diet, and place the animal in a cool, darkened and well ventilated horse box.

The cornea is very liable to be injured from blows or tears, and these injuries are always accompanied by symptoms of conjunctivitis. The tears may simply occur on the outer layer they may go through the whole coat, when the aqueous humour escapes. In injuries from blows, cold cloths kept close to the eye are useful; this keeps the eyelids closed, supports the ulcerated parts, and also prevents the access of the air on the wound. By such treatment, even when the aqueous humour has escaped, it is astonishing how soon it will form again.

In all wounds of the cornea lymph is poured out, giving the cornea a dull leaden appearance. When the eye has this dull appearance and no bloodvessels appear, there is a probability of its being removed; if changing to a milky whiteness, there is little chance of ever being rid of it. After the inflammation has subsided stimulants must be applied, as the sulphate of silver, the sulphate of zinc, &c.

In young dogs the cornea is subject to ulceration, as a sequel of distemper. The first symptom of this disease is a slight opacity in the centre of the cornea; this opacity is followed by the appearance of a small hole or

ulcer, which, if left alone, gradually extends over the whole cornea. This ulceration depends on the nutrition of the cornea being destroyed, followed by disintegration. It is best treated by a solution of the nitrate of silver, about fifteen grains to the ounce of water.

ROARING IN HORSES

Roaring is usually the result of structural alterations within the larynx or upper part of the windpipe bordering on the trachea; in mild cases of roaring, we usually find a thickened state of the membrane, lining the upper portion of the respiratory passage, and when roaring is occasioned by thickening of this membrane, its degree depends on the ratio of decrease in the calibre of the tube breathed through.

Roaring is a very aristocratic disease; many of the very best and fastest horses in England were and are now, notorious roarsers. Flying Childers, as fast a horse as ever wore horse shoes, was one of the worst roarsers ever known; the story runs that when Childers was at full speed his roaring resembled juvenile thunder!—he could be heard when distant half a mile!

The worst form of roaring (as Paddy says) is whistling. This is the sharp shrill note only occasioned by the thickening of the lining membrane of the primary passages of respiration, but by alterations in the form and structure of the larynx—the larynx being, in popular language, known as the "voice box."

Roaring is more prevalent among stallions than mares and geldings, and the kind of horse most subject to it is the one having a thick chunky neck, and having the angles of the jaws in very close proximity with the neck.

Roaring scarcely, if ever admits of a radical cure, and when of hereditary or congenital origin a cure is impossible. A roarer should never be encumbered with a check-rein, for it has the effect of causing undue pressure on the larynx, and thus augments the difficulty.

Roaring can however be relieved by an operation known as tracheotomy, which is performed at a point a few inches below the larynx.

At a late meeting of the Imperial and Central Society of Veterinary medicine, M. Leblanc read a communication on tracheotomy which was performed on a carriage horse. "The operation had been performed because the horse was a severe roarer, and he wore the tube eighteen years and a half, doing fast work all the time. The animal was destroyed at twenty three years of age, the owner not desiring to make further use of him nor to sell him. Since the operation, Leblanc had not observed any change in the horse, except a depression of the bones of the face. After death, the larynx was found very narrow, the mucous membrane and submucous cellular tissues were thickened, the epiglottis deformed, very obtuse, and everted at its free margin. The changes in the larynx were the original cause of roaring. The depression

of the bones of the face was connected with constriction of the nasal chambers, and was evidently secondary to the change in the course of the air in the process of respiration. The parts of the trachea in contact with the tube, had undergone a transformation, into very hard tissue, which replaced both mucous membrane and cartilaginous tissue. It filled the trachea above the point where the tube had been introduced, and, intermixed with this firm fibrous deposit, was cartilaginous and osseous tissue, which offered great resistance to the scalpel."

Roaring, thick wind, whistling &c., are often the sequel strangled of influenza, laryngites and other affections of the respiratory passages, and hence may have an accidental origin; in such cases we entertain a hope of doing some good by means of medicinal agents and counter irritation.

The medicines which have proved most successful in my practice are as follows:

Iodide of Potass, 4 ounces; Fluid Extract of *Stillingia*, 1 pound fluid. Dose: two ounces daily, in the form of drench.

The region of the throat should be rubbed daily with a portion of the following: Spirits of Camphor, 6 ounces; Diluted acetic acid, 12 ounces; mix. G. H. DADD, V. S.—*Prairie Farmer*.

SIMPLE RULES ON SHOEING.

BY W. JONES, M. R. C. V. S., LONDON.

1st. After having taken off the old shoe, shorten the toe, and remove all the dead and loose parts of the hoof. Do not cut the sole or pare the frog, except when the foot has received an injury from a nail or otherwise, when it must be cut out.

2nd. Let the shoe be of equal thickness, or rather thinner at the heel. The ground and foot surface should be perfectly level. The shoe should lay light on the heel. Too many nails are objectionable, and these should be kept as far as possible from the heels.

3rd. For the hind feet there is no objection to calkins, though they are of doubtful benefit. Horses travel better without them. The hind shoes are made thicker at the toes than at the quarters, the nails also can be put closer to the heels without causing inconvenience.

4th. Side clips should be avoided, they destroy the hoof, the same is the case when the nails are too close together. The feet should never be rasped, as it destroys the enamel of the hoofs, renders them brittle, and causes sandcrack, and consequently lameness.

5th. Expansion is a fatal error which has led to many abuses in shoeing, such as paring off the sole and frog, rasping off the hoof, &c. The elasticity of the foot, which is however very limited, exists only in the upper part of the hoof, principally round the coronet. On the lower part and the toe it is nil.

Miscellaneous.

THE DANDELION.

This plant, (*Leontodon Taraxicum*) has long been naturalised in Canada, and has become in many places a perfect nuisance. Its edible and medicinal qualities appear on this side the Atlantic to be but little known. On the continent of Europe it is turned to a valuable account as appears from the following statement, which we find in a recent number of the *Scottish Farmer*:

While this well-known plant is allowed to be come a nuisance and a pest in this country, our neighbours the French, whom we laugh at for eating frogs, teach us how we might not offend ourselves to a great extent of this troublesome weed, but also turn it to a useful, and even a very profitable account. It is an ingredient in their spring soups and salads, and serves as substitute for spring spinach before that vegetable attains a useful size; and when forced during winter and blanched, forms an excellent substitute for the "Barbe de Capucin" (i.e. blanched succory), and is both nutritious and medicinal, being a valuable stomachic and diuretic. The roots are as valuable as the leaves and both might be made use of by those living in towns who have no garden; for both roots and leaves may be got in abundance for the digging up, and may be used as soon as gathered. The roots planted in a box of sand in a cellar or even in pots set in the window side much wholesale matter might be obtained from.

To show to what useful and profitable an extent this plant is applied on the continent, we quote from the "Proceedings of Comice Horticole de Main et Loire," a statement of the supplies sent from the meadows on the banks of the Loire alone to the Paris markets, and this constitutes only a small part of the quantity year consumed in that city. During winter and beginning of spring the female peasantry go in the morning, often before daylight, and especially in frosty weather, to the grounds where this plant is found in a wild, uncultivated state. "There they collect the plant which is the object of their search, and return, sometimes at night, bent under a burden which they have gone six or eight miles to seek for, and the weight of which is from 1s. 0d. to 2s. 6d., according to the places where the plant is less or more abundant. But, before they touch their hard earned gains, nearly as much more time must be consumed in clearing the dandelions, and rendering them fit for the eye of the purchaser. Here, however, the work changes hands; no longer the same women who take this part of the labour, but the children and other members of the family who are unable to make these

and fatiguing journeys now step in. Thus the gathering a plant scattered over the fields gives employment for nearly three months to all the women and children in the above populous districts who are not otherwise engaged, and greatly alleviates the hardships which their smiles would often have to endure."

As regards the amount of traffic to which the dandelion gives rise, the authorities of two railways have furnished exact statements of the quantities carried. On the Bohale line, from the 8th January to the 26th April, 72 tons 17 st. were forwarded to Paris; on that of Saint Athurin, 101 tons 1 cwt.; the Montre Railway estimated to have taken 100 tons, and that of relazé 25 tons; so, without taking other lines into account, these four alone carried about 300 tons of dandelions to Paris, the carriage of each by passenger train came to £1,200 in three months.

The dandelions consist of two kinds, the green and the blanched; the former comprises about three-fifths of those carried, or about 240 tons, and their value may be taken at £1,920; the blanched, which constitute the remaining 60 tons, may be set down at £1,080, and the total value of both classes at £3,000.—*Scottish Farmer*.

SERVANTS AND MISTRESSES.—Almost every man I ever met with was, as regards servants, either a tyrant or a goose. See how much better we can manage our men servants. Too many women are naturally bullies, and dearly love to hold the rod over their weaker sisters. Hang it, I say, make the usual allowance for human nature, and you will find servant girls as good as any other class of your fellow-creatures, and a good deal better than many. Ask at what the poor things have to put up with—squalling children to irritate them, tyrannical and exacting mistresses hunting them about from pillar to post, worrying their powers from work out of them. Do you remember the story of Mahomet's youth, how it was said that the angel took his heart out of his body, and hung all the black spots of blood out of it, so that it was pure ever after? I fancy we want such operation to be performed with the most girls we engage. We expect to get an all-work, or a nursing or cooking angel for the cheap rate of seven—nine—fifteen guineas annum, instead of what we do receive, a girl being like ourselves. Hang it, my sister, get hold of a young girl, sometimes she is in her duties—slow, stupid—how do you get the cause of it? You can't look into that heart. Perhaps she has mightier things to do for even than you and your seven guineas a year. Perhaps she has subjects on her mind for which she would pitch you and your coppers to wind. She hasn't cleaned your breakfast table as well as usual; perhaps she had other things to think of. Don't say she ought not to be, she is human, you know. Perhaps the

butcher's boy has been fickle—no; but a butcher's boy you see, but she loves him—she is a woman she loves him, and she would see you and your breakfast-room at Hanover for one of that butcher boy's unctuous smiles. Now do not blame her for that; you can't, you dare not do it. Who knows what tears have blinded her eyes and prevented her scouring your stewpans as they ought to be scoured—perhaps a sister has come to shame—perhaps a brother shot dead in some battle of which we read with pride—perhaps she is ill in body as well as in mind; she has to do her work, nevertheless, and to stem the torrent of your wrath, if she does not perform it well. It's no easy matter to work regularly, in the teeth of illness, of sorrow, of anxiety, of jealousy. I should like to see you scouring stewpans, or dusting furniture as regularly and accurately when your lover had turned you adrift, or your father had lost all his property. I should like to see if you could devote the whole of your attention to the legs of chairs and the cobwebs in the corner, never straying in thought to the faithless man or the ruined father, even though you did see hanging up in the future the tempting prize of—seven guineas. Ladies should take more interest in their servants, not regard them as washing, ironing, wringing, nursing machines of an inferior quality; and then the servants themselves would learn to regard their mistresses as something more than mere paying machines, to be avoided and dreaded except on the pay day. Look here—you engage a young girl, age sixteen, face pretty, manners good, just give her credit for possessing a heart and a temper, the "feelings, affections, passions," which Shylock claims for his Jewish brethren. Measure, if you like, her temper and feelings by your own, allowing liberally for the difference in station, which will be in her favour, keep them steadily in mind, and then you ought to be a good mistress. No followers allowed, perhaps you say. Hang it, if you lay down such a rule you try to do what fleets and armies have been unable to do—bar the gate against love. It's a credit to be in love. You don't suppose she intends to sell her life for your miserable seven guineas, do you? You don't suppose that she gives up the hope of dusting a kitchen of her own, and sitting by her husband's fire, for the sake of your cast-off garments and perquisites? The life even of a servant girl is too valuable for that. Here, where's that book, "Companions in My Solitude;" what does "Helps" say about that? Here it is, page 113. "What does a lady mean who lays down such a law in her own household? Perhaps she subscribes to some abolition society, which is a good thing in as far as it cultivates her kindly feelings towards an injured race. But does she not know that by this law as applied to her own household she is imitating in a humble way one of the worst things connected with slavery?" Further on

he says, "For my own part I could not bear to live with servants who were to see none of their friends and relations. I should feel I was keeping a prison, and not ruling a household.—*J. J. B., in The Queen.*

A TESTING APPARATUS FOR EXPLOSIVE OILS.—At a recent meeting of the Franklin Institute, Philadelphia, Mr. Howson exhibited a patent naphthometer, or benzine detector. This is the invention of Messrs. H. J. Smith and Woodruff Jones of this city. The instrument consists of a reservoir with a tightly-fitting cover, from the top of which projects a tube, surrounding a wick tube. A thermometer also passes through the cover, and occupies such a position that its bulb comes within a short distance from the bottom of the reservoir. In order to determine the temperature at which the oil gives off sufficient vapour to cause an explosion, the oil to be tested is poured into the reservoir, the wick is lighted, and the instrument is placed on a stove, or over the flame of a lamp. At a temperature which varies in proportion to the quantity of explosive ingredients contained in the oil, the vapour is given off, and, mixing with the air in the reservoir, passes up through the space between the wick tube and the larger tube, and explodes when ignited by the flame, thereby extinguishing the light. The height of the mercury in the thermometer will determine the quality of the oil. The contrivance is very simple and cheap, and enables anyone to ascertain in a few minutes whether an oil is of a quality to be burned with safety.

THE WREN—ITS VALUE.—Among the insect killing birds the wren is perhaps the most useful, for its habits are of the most industrious character. The European wren is nearly the smallest bird there known, and is found prying into holes and crevices, and about old buildings searching for insects. The winter wren, to be found in the Northern and Middle States in winter and often remaining until spring, is thought to be identical with the European wren. Our wrens have a larger tail, and are familiarly known in all parts of the country. They will reside about dwellings and even in crowded cities. We have found that however great the number of wren houses we may place in trees, that every one will have a tenant, and "the more the merrier," for they consume insects only, and are most indefatigable in finding them.—*Working Farmer.*

LOVE OF THE FRENCH FOR FLOWERS.—The passionate love of flowers is a marked characteristic of the Parisians, and the sale of flowers is in Paris an extensive and lucrative branch of trade. It is computed that the various little patches of ground in the vicinity of the French capital, appropriated to floral cultivation, realize an annual income of 32,000,000 francs, and give employment to 500,000 per-

sons. In Paris alone there are no fewer than 284 florists; and on occasions of public festivity their conjoint traffic not unfrequently amounts to 70,000 francs. At a *fete* given last season by one of the foreign ambassadors the cost of the flowers was 22,000 francs.

NATURAL BAROMETERS.—Chick-weed is an excellent Barometer. When the flower expands fully, we are not to expect rain for several hours; should it continue in that state, no rain will disturb the summer's day. When it half conceals its miniature flower the day is generally showry; but if it entirely shuts up, or veils the white flower with its green mantle, let the traveller put on his great coat. The different species of trefoils always contract their leaves at the approach of a storm; so certainly does this take place, that these plants acquire the name of the husbandman's barometer. The tulip, and several of the compound yellow flowers, all close before rain. The tulip, and several of the compound yellow flowers, all close before rain. There is a species of wood-sorrel which doubles its leaves before storms. The bauhinia, or mountain ebony, capial and sensitive plants, observe the same habits.

HAY AND CORN SHRINKAGE BY DRYING.—The loss upon hay weighed July 20th, when cured enough to put in the barn, and again Feb. 20th, has been ascertained to be 27½ per cent. So that hay at \$15 a ton in the field is equivalent to \$20 and upward when weighed from the mow in winter. The weight of cobs in a bushel corn in November ascertained to be 19 lb was only 7½ lbs. in May. The cost of grinding a bushel of dry cobs, counting handling, hauling and miller's charge is about one cent pound. Is the meal worth the money? *Scientific American.*

Genuine tea is said to be growing on a tract of land in Clinton county, Penn. A gentleman, who owns a farm on which the tea is indigenous, says that his attention was called to it by a native Chinese, who declared it to be the genuine China tea plant. The gentleman uses it on his table and no one suspects it not to be the imported article. A gentleman of the medical profession, residing in Crawford county, informed us that he had tested Clinton tea and pronounced it simon pure.

Editorial Notices, &c.

THE MUSEUM.—The Secretary of the 1 of Agriculture has to acknowledge with the receipt from Mr. John Waddell, Bur Farm, Township of Sarnia, County Lan wheat in the

pulled with the roots attached, for the Agricultural Museum. This sample is over 5½ feet in length, but notwithstanding this great height, appears to have stood very erectly, and has a heavy, well filled ear. The following particulars are given :

"Blue stem variety, grown on sod 25 years old, broken up in July 1862, sown 20th September, reaped 20th July, 1863. Crop exceedingly heavy, and scarcely touched with the midge, whilst fields in the same neighborhood were half eaten up."

We shall be much obliged to other gentlemen for similar favours.

TORONTO MARKET PRICES.

TORONTO, JULY 31, 1863.

| | |
|--------------------------------|------------------|
| all Wheat, per bushel..... | \$0 85 to \$0 90 |
| spring Wheat, " | 76 " 82 |
| barley, " | 60 " 70 |
| oats, " | 50 " 55 |
| clover, " | 45 " 46 |
| rye, " | 56 " 60 |
| corn, " | 4 00 " 5 00 |
| straw, " | 4 00 " 4 50 |
| potatoes, per bushel, old..... | 25 " 30 |
| " " new..... | 70 " 80 |
| fresh Butter, per lb.,..... | 12½ " 14 |
| eggs, per doz..... | 14 " 16 |
| chickens, | 30 " 35 |
| ducks, each, | 3 00 " 5 50 |
| geese, each..... | 3 00 " 4 00 |
| fat, per 100 lbs..... | 3 00 " 5 00 |
| oil, per ton,..... | 8 00 " 9 00 |
| lard, " | 9 00 " 10 00 |
| hides, per 100 lbs..... | 4 50 " 5 00 |
| skins, per lb..... | 8 " 9 |
| sheep skins, | 25 " 30 |
| goat skins, each | 40 " 50 |
| wool, per lb..... | 35 " 37 |
| Wine of Paris, per barrel .. | 95 " 1 00 |
| beer, per bbl..... | 1 45 " 1 47 |

BLOOD STALLION FOR SALE.

FOR SALE, a Blood Stallion, "*High Flyer*" six years old, bright bay, 15 hands 3¼ inches high; Sire "*Sir Tatton Sykes*," dam by "*Monocodrom*."

Terms cash, or six months' credit on good security. Apply to

GEO. COOPER,

Davenport P. O., near Toronto.

July 20th, 1863.

THOROUGH-BRED SHORT HORN FOR SALE.

MORETON DUKE, got by Mr. Stone's Bull 3rd Grand Duke, 2292, calved 9th June, 1860.

William of Oxford, got by Mr. Stone's Bull 12th Duke of Oxford, calved 19th November 1859.

David, got by Sir Charles, a son of 3rd Grand Duke, calved 1st March 1861.

Marquis of Oxford, got by William of Oxford, calved 20th March 1863.

Warwick, got by Moreton Duke, calved 26th March 1863.

Terms very reasonable.

W. WILLCOCKS BALDWIN.

Larchmere, Oak Ridges.

April, 1863.

tf.

THOROUGH BRED STOCK.

THREE yearling Durham Bull two Galloway Bull Calves, two imported Ayrshire Bulls, yearlings, for sale.

GEORGE MILLER,

Markham.

April, 1863.

tf.

THE CANADIAN AGRICULTURIST

AND JOURNAL OF THE

BOARD OF AGRICULTURE

OF UPPER CANADA.

THIS LONG ESTABLISHED PERIODICAL is published in Toronto on the 1st of each month, making 12 numbers in the year.

Each number contains not less than 40 pages, the size of the page of this Prize List, occasionally illustrated by Wood Cuts, thus giving a large and handsome volume of about 500 pages.

TERMS:

Single copies, 50 cents a year.

Five to twenty copies, 10 per cent. discount.

Twenty to thirty-five copies, 15 per cent.

Thirty-five to Fifty copies, 20 per cent.

Fifty copies and upwards, 25 per cent discount allowed.

Subscriptions payable always strictly in advance.

EDITORS:

Professor Buckland, University College, Toronto. Hugh C. Thomson, Secretary Board of Agriculture of Upper Canada. Andrew Smith, Licentiate of the Edinburgh Veterinary College and Consulting Surgeon to the Board of Agriculture of Upper Canada.

All orders to be addressed to the Secretary of the Board of Agriculture, Toronto.

The back numbers of the present volume can still be supplied at the above rates.

Orders for the half volume, commencing 1st July, taken at 25 cts. per copy; discount for a number of copies in same proportion as above.

AGRICULTURIST OFFICE. }

Toronto, June, 1863. }

SEED AND IMPLEMENT

WAREHOUSE.

ESTABLISHED, 1836.

THE SUBSCRIBERS beg to inform the Farming Community and the Public generally, that they have now opened their new place of business in the

AGRICULTURAL HALL,

AT THE

COR. OF YONGE AND QUEEN STREETS,

Where they will keep an Extensive Stock of

FIELD AND GARDEN SEEDS,

of the best quality; and in connection with their

Wholesale & Retail Seed Business,

They will keep in Stock a Large and Varied Assortment of the most Improved

AGRICULTURAL IMPLEMENTS, HORTICULTURAL TOOLS, and USEFUL BOOKS for FARMERS and GARDENERS.

JAMES FLEMING & CO.,

Seedsman to the Agricultural Association of U. C.

TORONTO, Dec. 16th, 1862.

Agricultural Implements.

- One Horse Ploughs \$5.00 to \$ 7.00 each.
- Two Horse Ploughs... Nos. 1, 2 & 3 16.50 "
- " " iron beam..... 12 00 "
- Patterson & Brothers, Manufacturers, Belleville.
- " " wood Nos. 4 & 5 10.00 "
- " " " No. 6..... 16.50 "
- One Horse Hoes or Cultivators.... 8.00 "
- Straw Cutters, for horse or hand
- power..... 30.00 "

Draining Tools of Superior Quality, Spades, Shovels, Manure Forks, Potato Forks, Hay Forks, Cradles, Scythes, Snaiths, Iron Rakes, Hoes, Hand and Horse Hay Rakes, &c., &c., &c.

JAMES FLEMING & Co.

TORONTO, Dec. 16th, 1862.

Miscellaneous Articles.

FOR SALE BY

James Fleming & Co.

Rustic Iron Garden Chairs, Plain and Ornamented Flower Pots, Vases, Propagating-Glasses, Fish Globes, Aquariums, Green-house Syringes, Conservatory Pumps, Water-pots with patent brass roses, Fumigators, Saynor's celebrated Pruning and Budding Knives, Bass Mats, Hedge Shears, Transplanting Trowels, Grass Shears with long handles, Thistle Spuds, Fancy Rakes and Hoes, Hatchets, Hammers, Sets of Garden Tools for Boys, Large Pruning Shears, Garden Lines and Reels, Gardener's Gloves, &c., &c.

Contents of this Number.

| | PAGE. |
|---|-------|
| The Provincial Exhibition..... | 289 |
| Flax..... | 290 |
| Treatment and Culture of the Potato..... | 290 |
| Tar and Turpentine..... | 291 |
| Agriculture of Natal, Africa..... | 292 |
| South Riding of Lanark Ag. Society..... | 294 |
| On the Breeding of Hunters and Hacks..... | 296 |
| Awarding Prizes to Cattle by Points..... | 299 |
| Steam Cultivation..... | 299 |
| The Vine Lands of Lake Erie..... | 300 |
| Scotch Farming in Old Times..... | 301 |
| Gypsum as a Fertilizer..... | 302 |

AGRICULTURAL INTELLIGENCE:

| | |
|--|-----|
| Meeting of the Board of Agriculture..... | 303 |
| Chemico-Agricultural Society, Ulster..... | 306 |
| Rearing Calves on Milk and Linseed Meal..... | 313 |
| Great International Wheat Show..... | 309 |
| Crops in Northumberland..... | 310 |
| Curious Facts in French Agriculture..... | 310 |
| The Flax Crop in Canada..... | 311 |
| Exhibitions to take place this Autumn..... | 311 |

THE DAIRY:

| | |
|---------------------------------|-----|
| Qualities of Milk..... | 312 |
| Treatment of MILK Cow..... | 313 |
| Ten Rules in Making Butter..... | 313 |
| Cream Cheese..... | 314 |

HORTICULTURAL:

| | |
|---|-----|
| Black Knot in Fruit Trees..... | 313 |
| Fruit Growers' Association..... | 314 |
| Cultivation of the Fibert..... | 315 |
| Relating to Strawberries..... | 319 |
| Hamilton Horticultural Society..... | 321 |
| End of the Dwarf Apple Tree Discussion..... | 320 |

VETERINARY DEPARTMENT:

| | |
|--|-----|
| The Horse—Anatomy and Diseases of the Eye..... | 321 |
| Roaring in Horses..... | 327 |
| Simple Rules in Shoeing..... | 324 |

MISCELLANEOUS

| | |
|-----------------------------------|-----|
| The Dandelion..... | 324 |
| Servants and Mistresses..... | 325 |
| Explosive Oils, The Wren, &c..... | 325 |

EDITORIAL NOTICES, MARKETS, &c..... 326

THE PROVINCIAL EXHIBITION.

OF THE

AGRICULTURAL ASSOCIATION
OF UPPER CANADA,

Will be held at Kingston,

On the 21st to 25th September next

PERSONS INTENDING TO EXHIBIT

will please take notice that the entries articles in the respective classes must be made with the Secretary, at Toronto, on or before the undermentioned dates, viz.,

Horses, Cattle, Sheep, Swine, Poultry, on before Saturday, August 15th.

Grain, Field Roots, and other Farm-Product Agricultural implements, Machinery, and Manufactures generally, Saturday, August 29th.

Horticultural Products, Ladies' Work, Fine Arts, &c., Saturday, September 12th.

Prize Lists and Blank Forms for making entries upon, can be obtained of the Secretaries of all Agricultural Societies and Mechanical Institutes throughout the Province.

HUGH C. THOMSON.

Sec'y Board of Agriculture.

Toronto, July 28, 1863.