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THE

Canadian Agriculturist,

OR

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

L. XIV.

TORONTO, JUNE 16, 1862.

No. 12.

The International Exhibition.

33 CLAPHAM RISE, S., }
LONDON, ENGLAND, }

Editor of the Canadian Agriculturist.

Since I wrote last I have been incessantly engaged in the examination of the various agricultural products of the British Colonies. We have a conception of the variety and value, and the amount of the productions of the Australian colonies until we see them. The progress they have made since 1851 is very remarkable. Queensland is exceedingly well represented. Victoria, New South Wales, New Zealand, and indeed, all those antipodean lands to which emigration has of late been directed, and in the necessities of life, as well as the means of manufactures. Specimens of wools of the finest quality, cotton, silk and other fibrous substances, the most valuable minerals, as also some of the best woods for ornamental purposes can be any where found, are here on exhibition from those colonies. But no colony can compare with our own for the timbers that are useful for general purposes; nor is there a better collection of minerals from any one country than in ours. We shall stand high in these two departments, and we will carry off several medals for the classes of Agricultural products.

The jury of which I am a member were yesterday in the French department and will remain to-day. The exhibition of French agricultural products is very extensive, and the admirable way in which the articles are displayed to the exhibitors very great credit. Large collections have been made from the schools of agriculture in the various sections of France.— Different cereals are displayed in the straw in a very tasteful manner, and all the varieties

of grains and seeds in glass vessels of various patterns. The whole display is exceedingly interesting, and embraces some two thousand collections by as many exhibitors. You may therefore judge of the amount of labour to be performed, and the difficulty experienced by the jurors in making their awards. Yet we hope that the work will be done and the awards made with a tolerable degree of satisfaction to all parties concerned.

The exhibition has now assumed, with a few exceptions, a finished appearance. Some few things are still being imported, but the confusion incident to the putting up has nearly disappeared. The display of splendid and valuable articles, worth untold millions of money, is now truly astonishing to the visitor.

The cloths from the Netherlands have particularly attracted my attention. They are of the finest quality, and manufactured from the finest wool that is produced in the world, and the prices marked upon them seem to be low enough to induce merchants from the various countries who need such goods to become purchasers.— A vast extension of commercial intercourse must result from this exhibition, while the inhabitants of the various parts of the world who are here assembled will obtain a knowledge of each other which will be by no means the least important benefit that will result from this great collection of men and things.

A contemplation of the whole leads to constant expressions of regret by numerous persons that that wise and good prince who was the originator of the first, should not have been spared to witness the success of this second International Exhibition. But such has been the will of The Great Disposer of the events of the world!

Yours, &c.,

E. W. THOMSON.

Tanner's Bark as a Manure.

To the Editor of the *Agriculturist*.

SIR.—The pages of your Journal being ever open to give and receive all information pertaining to the advancement of Agriculture in this fine province, induces me to ask the opinion of the *Agriculturist* upon the following question:—Having an opportunity of procuring a large quantity of waste tanner's bark, which is the best way to convert it into an active manure? By answering the above in your next impression, you will confer a favor upon

Yours, &c.,
St. Foy Road, County } M. D.
Quebec, May 24th, 1862. }

REMARKS.

Tanner's Bark occupies a very low position as a fertilizer. Having, however, once been the seat of life, and, therefore, organic, the ingredients of which it is composed, after the tanning principle has been extracted, must, when decomposed, possess in some degree a fertilising power. Something of course will depend on the varieties of wood that have been employed. The bark of the oak and other deciduous trees being preferable to that of the Fir tribe. It is difficult to bring tanner's waste into a rapid state of decomposition, and consequently undesirable to apply it to the land in a crude state. The most preferable mode of employing it is in compost, in connection with light earth and quick lime; the latter when thoroughly mixed in a liberal proportion to the whole bulk, say a tenth or fifteenth, will probably hasten decomposition, and bring the several ingredients of which the bark is made up into a state, in connection with water, for entering into the circulation of plants. Solid liquid manures may be and advantageously mixed with spent bark in a compost; but the use of lime is of the greatest advantage, in promoting the decay of woody fibre, and forms in itself a very valuable auxiliary to a manuring compost. We therefore recommend our correspondent to use the bark at his command in the manner above described; allowing it plenty of time, and thoroughly mixing it together. In this way he may obtain a manure of moderate power, and make it profitable, provided the distance of transportation be not too great.

For the information of our respected correspondent and readers generally, we append an

analysis of Tanner's Bark made, we believe, with great care and accuracy a few years since by Mr. Lonck, of England.

Tanner's Bark.	In state in which it was analysed.	Dried at 212° Fah.
Water.....	44.61	—
Organic Matters.....	48.91	68.58
Inorganic Matters.(Ash)	6.48	31.42
	100.00	100.00
Containing Nitrogen..	.069	.097
Equal to Ammonia....	.084	.118

In 100 parts of the inorganic portion (Ash) of this refuse, were found:—

Salica and sand.....	6.070
Phosphates of lime, magnesia, and iron, containing 1.81 of phosphoric acid...	5.230
Carbonate of lime.....	85.350
Supphate of lime.....	1.969
Magnesia.....	.215
Potash.....	1.230
Soda.....	traces.
	100.034

It will be observed from the above analysis that spent bark contains a large amount of water, which alone is a sufficient cause to prevent its being applied at any great distance from the locality where it is obtained. Fresh from the yards, it probably is still more completely saturated with water than the specimen analysed. As might have been expected, nearly all the nitrogenised compounds in the bark have been dissolved during the maceration in water, and only traces of nitrogenised matters are thus left in the organic portion of this waste; for which reason the value of this portion of tanner's bark is but trifling. Moreover, the composition of the ash shows that it principally consists of carbonate of lime and silica, substances of common occurrence, especially the latter, and therefore of little consequence; and that the amount of phosphoric acid and of potash, two valuable fertilising materials, is, but very small.

Yet it has been well observed: "Tanner's waste may be used to advantage as a component part of compost heaps; or, partially dried by exposure to the air, it may be economically employed in some places as an absorber for liquid manure, or also for covering manure heaps, to prevent the loss of ammonia in them. Sufficiently dry, it may indeed be used with equal advantage for all purposes for which peat-mould is employed."

Turnip Culture.

Editor of the Agriculturist,

As the benefits which are derived from the growth of this important crop become more widely known, it is yearly receiving a larger space in our fields, a space, yet, however, very diminutive indeed. To cultivate turnips successfully a good deal of labour and attention is indispensable, and perhaps, were we possessed of a practical knowledge of their culture, or proper mode of treatment suited to the requirements of our climate, we should not so often have occasion to complain of a want of success. At your suggestion and request, I shall mention a system which I have found to succeed pretty well; also, a few facts that came under my observation which may possibly be interesting to some of your readers:

In the fall the land intended for turnips was manured with farm-yard manure, and ploughed nine or ten inches deep; cross-ploughed in the spring as soon as it became sufficiently dry, then harrowed and rolled, ploughed again about a week or ten days before sowing, harrowed and rolled until a fine deep tilth was secured. The furrows should be kept going immediately after the plough, or that which is ploughed should be harrowed at least every night, to prevent the moisture from evaporating and the land getting too dry. By thus treating this length of time before sowing, the seeds of weeds are afforded an opportunity to sprout, and are destroyed when drilling commences. There are now many kinds of artificial manures used for turnips, such as guano, bones &c., which are effective in producing large crops, and are much more easily applied than farm-yard manure, on account of their small bulk. Long, poorly rotted manure is ill adapted to this crop, for two reasons: it is not in a fit state to be taken up by the roots of the young plants, at a time they most require to be forced, and it acts injuriously, especially if applied in large quantities in this way; it is with difficulty covered when closing the drills, and when a roller is passed over, a very shallow covering remains in which the seed is deposited; the warm weather and drying winds which we frequently have at this season of the year, dry up the earth on the top of the rough manure, and much of the seed does not sprout at all, and that portion which grows is not unfrequently much injured or quite destroyed before the roots penetrate through the moist earth beneath.

If possible, drills that are opened in the morning should be manured, closed, and sown in the evening. The proper depth to deposit the seed, is a question often discussed. I have these two last years made experiments with reference to this question, and have both times arrived at similar results. The machine with which I sowed would either sow half an inch or one and a half deep; that portion which was sown the former depth, braided very irregularly, and

much of the seed never grew at all. That which was sown the latter depth, or one inch and a half, came up much earlier and was altogether a better braid. The only reason I can assign for so marked a difference is that the earth becomes so dry at the former depth—that the seed cannot sprout unless it be favoured with damp or moist weather, when a good braid is secured. The grand secret of success is frequent stirring with the cultivator, or as often as the land becomes hard or baked, taking the weeds in time and keeping them down.

J. W.

June, 1862.

[As our young friend has made so good a commencement, we shall hope to hear from him occasionally, giving the results of his observations and practice. Short practical articles, embodying the results of experience such as many of our readers could, with a little pains, communicate, are what we particularly need.]

Eds.

Report of the Minister of Agriculture for the year 1861.

To His Excellency the Right Honourable CHARLES STANLEY, Viscount Monck, Baron Monck of Ballytramm, in the County of Wexford, Governor General of British North America, etc., etc., etc.,

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned, in conformity with the 6th section of 22 Vic., cap 32, has the honour to submit his annual Report, for the information of Her Majesty's Government.

IMMIGRATION.

The encouragement of Immigration forms a most important branch of the duties of the Minister, and is one to which the especial and most earnest efforts of the Department have been directed.

Frequent representations have been made of the great difficulties in procuring accurate information and statistics relating to Canada, experienced by intending emigrants, many more of whom would probably make Canada their home, were her vast resources and the advantages and inducements which she holds out, more widely advertised and proclaimed.

With a view of testing this question, and of enabling Canada to compete more favourably with other British Colonies and the United States, for the advantages attendant upon the settlement of certain classes of emigrants among us, additional agents have been temporarily appointed to represent the emigration branch of this department in the north and south of Ireland and western Europe, respectively.

Mr. Donaldson resumes his old appointment at Londonderry as agent for the north of Ireland; Mr. E. J. Charleton has been appointed to the southern and eastern portion of that country, and Mr. A. H. Verret to western Europe.

With a desire to facilitate the discharge and enlarge the sphere of duties of the Emigrant Office of Lower Canada at Quebec, Mr. Drolet and Mr. Stafford have been nominated Assistant Emigrant Agents for Lower Canada.

Great care has been taken to impress upon the emigrant agents abroad, the importance of their mission, and the fact, that certain classes only of Emigrants are sought for, or desired by the Province. The following extract from the "Letter of Instructions," issued to them by the Minister of Agriculture, relates to this subject:

"In conveying information respecting this country, you will of course readily understand the necessity of great caution and entire truthfulness in any statement you make, in order that the Government may not be involved by representations in any respect fallacious, nor the emigrant, or public abroad be in any way misled. In addition to the authorised documents which you take with you, you will be supplied from this Department with such information bearing on the subject of your mission as you may, from time to time, apply for, or as it may be considered desirable to send you. These communications and your experience and long acquaintance with this country will enable you, at all times, to give such information as shall be really accurate, respecting our mines, forests, fisheries, agriculture, and the Colony generally.

"You will constantly bear in mind that a promiscuous immigration is neither desirable nor sought for: Canada, at present, does not, and for the coming year most probably, will not offer any large field for unskilled labor, since there are no large public works, nor railway extensions in progress. At the same time skilled agricultural labourers can always find ready employment, and female domestic servants are always sure of good wages and certain employment.

"The class of people to whom, especially, Canada offers a desirable home comprises those who on their arrival here are prepared to enter on the Public Lands as settlers.

"The Provincial Government, as you are aware, has recently opened new roads in Upper Canada and in Lower Canada, and has laid out for settlement and authorised free grants (not exceeding 100 acres in each case) of the lands through which these roads pass. These free grants are, however, more advantageous to those acquainted with the climate and country than to the poorest class of emigrants, and those just arrived in the country.

"You will ascertain at the Crown Lands Office the exact position of these free grants now available, and explain fully to persons seeking information the advantages and disadvantages attendant upon their settlement."

The exertions of Emigrant Agents must not, however, be confined to the vast fields of Europe, but it is advisable that they should also be directed to different localities in the United States where former inhabitants of Canada may be found in small communities. Preliminary action has already been taken in this matter by circulating amongst them, in their own language, accurate information as to the advantages which Canada offers to the industry, labour, perseverance, of the Colonists.

The task of collecting and disseminating information likely to be of use to intending emigrants, has been vigorously pursued by the Department. The circular to the Reeves of the townships of Upper Canada and to the Municipal authorities in the Lower Province, making enquiries relative to the number and classes of emigrants sought for in each different locality, and seeking information as to the prices at which "cleared" farms can be purchased or rented, &c., has been re-issued, and the result, compiled and published in a tabular form, circulated largely for the information of emigrants.

In addition to the above, another circular, enclosing a series of questions relative to the quantity and quality of land for sale, statistics and prospects of the settlers, how many are emigrants, &c., nationality, whether any improved farms are for sale or to be let, demand for labour, and general suggestions, has been issued by this Department to the various Crown Land Agents throughout the Province. The information contained in the answers received to these questions has been condensed and embodied in a pamphlet issued from the Emigration Office by Mr. Buchanan, and extensively circulated in the English, French and German languages.

COLONIZATION ROADS.

Upper Canada.—From the Reports for the past year of the resident agents on the free grant Road in Canada West, and which will be found in the Appendix, Nos. 1, 2, 3, 4, 5 and 6, the progress on these roads will be considered most encouraging and satisfactory. The number of families settled on these roads, the value of the season's produce, and the number of acres cleared, increase steadily year by year, and afford a true index of the prosperity of the settlements.

The annual Reports of Mr. Gibson, chief superintendent of roads for Canada West, and of Mr. Snow, superintendent of the Mississippi Road, with the usual approximate statements of the work done on the Roads in Canada West up to 31st December, 1861, and a statement of the total number of miles open to the same date accompany this report. (Vide Appendix No. 8.)

Lower Canada.—The management of the Lower Canada Colonization Roads has hitherto been undertaken by the Department of Crown Lands. Arrangements have, however, since the beginning of the month, been made, to transfer

the supervision to this Department, which will for the future receive the reports from the resident agents, collect statistics, and control the management of the Lower Canada Roads, in a manner precisely similar to that heretofore adopted in respect to the Roads in Upper Canada. In future, therefore, the Department will be in a position to give details on the important subject of Lower Canada Colonization, which it finds itself at the present moment unable to furnish. From the Returns of the Department of Crown Lands, it seems that there are in Lower Canada 91 Colonization Roads extending over the whole of the Lower Province, on both sides of the St. Lawrence, and on the northerly bank of the River Ottawa, from Gaspe to Pontiac.—During the past year 107½ miles have been completed, 79½ miles opened, 13½ miles repaired, and eleven large bridges built, involving altogether an expenditure of \$52,683 06. In the Report of the late Mr. Boutillier, for the year 1830, the total number of miles opened on these roads is stated to be 1,458. It would appear therefore that at the close of last year the total number of miles opened was 1,537½. Detailed information respecting the Elgin and the Matane and Cap Chat Road, may be found in the reports of the resident agents attached to the report of the Commissioner of Crown Lands.

AGRICULTURE.

The circulation of the customary queries relating to the Agricultural interests and prospects of the Province has been resumed this year, but the replies which have been made are neither in number nor in the information which they convey, so satisfactory as could be desired. Notwithstanding that upwards of 800 circulars were issued in December last to the County Agricultural Societies, the Wardens, Reeves, and other influential persons in Upper Canada, and 500 to the Agricultural Societies, Municipal authorities, and others, in Lower Canada, not more than 46 returns have as yet been received from the section of the Province. This apathy and indifference to the efforts of the Bureau are most discouraging, and entirely preclude the possibility of arriving, at the present time, at any just conclusion as to the result of agricultural labours during the past year, or of the agricultural progress the country is making. This report has been delayed in the hope that an abstract of the agricultural statistics for Canada, obtained by the Department from the census returns for 1861, would be attached. Though the most strenuous exertions have been made, it has been found impossible to include it without making the Report longer than is considered desirable. The agricultural returns for the whole Province will be ready in a few weeks, and will be immediately published. The cultivation of flax has lately received much attention at the hands of the Government.

This branch of Agriculture has hitherto been much neglected, notwithstanding that the soil and climate of Canada seem admirably adapted to its success. In order to promote the more extensive production of flax, and with the view of affording the fullest instruction and information as to the mode of scutching and dressing it, the Government has lately imported six of "Rowan's new patent flax scutching machines," to be distributed over both sections of the Province, subject to the order of the Department.

The undersigned has decided that these machines shall be distributed under the advice of the Agricultural Boards, and it is proposed that they shall be moved from place to place throughout the country, and thus extend their usefulness over as wide a district as possible. The absence of proper dressing mills appears to have, hitherto, prevented Canadian farmers from cultivating flax to any large extent, for though, as Mr. Donaldson (to whose representations and exertions in the matter this Department stands much indebted) states, there are some very good mills in the country, such as that of Mr. McCrear, at Canestoga, in the County of Waterloo, that of Messrs. Blaikie & Alexander, at Norval, and others, yet in the replies to the agricultural queries to this Department, almost universal complaint is made that no facilities exist for dressing and preparing any flax which may be grown.

CENSUS OF 1861.

Considerable progress has been made in tabulating and preparing for publication the statistics collected by the Census returns last year. Already have the detailed statistics relating to origins and religions of both sections of the Province been published and distributed in a pamphlet form among the members of the Houses of the Legislature. The agricultural portion of the Census is nearly completed, and is being rapidly prepared for the printers. Every effort is being made by the Department to bring the whole work to a conclusion at the earliest possible date.

BOARD OF ARTS AND MANUFACTURES.

The annual Report of this Board as prescribed by the 28th sec., 10 Vic., cap. 32, has been received.

The general condition of the society appears to be satisfactory, but the withdrawal of all Government aid from the Mechanics' Institutes appears to have resulted in the failure of some of them, and in crippling, materially, the usefulness of others. Some few of them, however, in cities and towns are not only self supporting but prosperous.

The statements of the treasurer of the Board show a balance in hand after payment of all expenses of \$1,923 63. The valuable works belonging to the Patent Office, left under the charge of the Board of Arts and Manufactures, are highly appreciated, and several donations of

Tesselated pavements with other and interesting specimens of manufactures are acknowledged. The library is entirely free for consultation, and is said to be more readily accessible than any other free library in the Province.

IMPROVEMENT FUND.

The "Improvement Fund" for 1859, accruing to the several Municipalities in Upper Canada, to be expended in Roads and Bridges is now in course of distribution.

PATENT OFFICE.

The business of the Patent Office is steadily increasing. During the past year, the fees received for Patents of Invention amounting to \$3,020 00, those for assignments, copies of specifications, and registration of Trade Marks to \$194 30, amounting together to the sum of \$3,214 00, which has been paid to the credit of the Honorable the Receiver General. This department of the Bureau has now become self-supporting.

The Royal Patent Commissioners in London, continue to present to the Bureau the specifications and engravings of patents issued in the United Kingdom. They now amount to 500 volumes.

Since the removal of the Government to Quebec, 443 models have been received by the Patent Office.

It is much to be regretted that want of accommodation has hitherto deprived the public in a great measure of the advantages which they would otherwise derive from the museum of models and valuable library of books. The models should be classified, numbered, arranged, and a descriptive catalogue should be prepared. The room might then be open to the public, say daily during the session of Parliament, and perhaps twice or thrice a week during the remainder of the year.

In conclusion the undersigned alludes with the deepest regret to the loss which this department has sustained in the decease, during the past year, of Mr. W. Hutton, for many years the active Secretary of the Bureau.

The whole humbly submitted.

N. F. BELLEAU,
Minister of Agriculture.

Bureau of Agriculture, Emigration, }
and Statistics, Quebec. April 1862. }

The Preparation of Food for Cattle

The directors of the Royal Agricultural Society of England have recently introduced the practice at their monthly meetings of discussing agricultural subjects. In the *Irish Farmer's Gazette* of the 17th ultimo, we find the following condensed report on the interesting and im-

portant subject of "preparing, mixing, and cooking of food for cattle." Mr. Frere, the editor of the society's journal, introduced it at the meeting, and based his observations on Professor Voelcker's paper on the composition and nutritive value of straw, which appeared in the last part of the Society's Journal; on Mr. Lawes' reports of his experiments conducted at the Duke of Bedford's estate; and, finally, on "his own small experience in cattle feeding last autumn." Mr. Lawes stated, however, that the results of the experiments which he had made, and to which Mr. Frere alluded, could not be taken as a standard in so far as related to the comparative merits of cooked and dry food, having been conducted for another purpose altogether—namely to ascertain the amount of composition of the dung of cattle, and more particularly with reference to the loss of ammonia. We may, therefore, set aside those of Mr. Frere's remarks which were based on Mr. Lawes' report, as being inapplicable to the subject under consideration, and pass on to some of his subsequent observations.

He alluded to the practice of giving cattle first a bait of meal, then a bait of turnips, and so on; varying the food at different parts of the day, informing the meeting that the most experienced feeders he had met with considered best to mix roots, cake, and meal, giving the same mixture at each feeding time. Referring to his own experience in cattle feeding last year, he stated that he had been

"Anxious to try the effect of cooking in the case of 10 beasts, 2lbs of bean meal boiled and poured over the chaff was to stand for 24 hours. 2lbs of cake were then added to this mixture and it was served up next day. Of these 10 beasts one obstinately refused to eat the mixture. It was a white bull with a black nose and was decided the worst beast of the lot. He stoutly did it reject the mixture that it would eat the straw turned out from the cart horse rather than this prepared food. It was then ordered to have bean-meal unboiled, the meal being still mixed with straw, which was moistened the day before, and a small quantity of malt combs, which was also moistened on the previous day. At this moment that which was the worst beast of the 10 was indubitably the best: it weighed over 8 stones more than those which were of the same size when they came in, and 1 cwt. more in live weight than the smaller animals did when they came in. In short, it weighed 56lbs. more than any of the other beasts in the lot. He mentioned the case to Professor Voelcker, who, in his reply, said.—The incident you mention with respect to your black-nosed bullock is curious. I do not like to boil pea-meal, or to pour it afterwards over roots and chaff. Substances so rich in nitrogenized matters as peas and bean meal are very apt to give rise to putrefaction, instead

lactic acid fermentation. For the same season, it won't do to mix much cake mucilage with other food, and to let it be a long time. If soon consumed after the addition of the cake itself, no harm is done; but if left too long after the addition, incipient putrefaction and mould, both of which are highly injurious to the preservation of cattle food, become perceptible in the mess. The more nitrogenous matter in the material employed, the greater its tendency to putrefy. When malt combs are soaked in water and then mixed with chaff, lactic acid is readily formed if there is sufficient water present and the temperature is sufficiently high. Sugar, in the presence of much water and a sufficient quantity of albuminous matter, becomes changed to lactic acid—an acid which has the same percentage composition as milk sugar itself. Too much or too little albuminous matter is alike unfavourable to the production of lactic acid."

Mr. Frere stated that he gave each of these animals every day "1lb. of malt combs, 3lbs of linseed, 2lbs. of cotton cake, 3lbs of bean meal, 2lbs. of carob or locust bean, 21lbs. of angel wurzel, and 8lbs of straw." His impression was that there were more economical modes of preparing food for cattle than by boiling.

Mr. Lawes did not think there was any saving effected by cooking food for cattle, if the increased labour and cost of fuel were taken into consideration; nor did he believe that although the use of cooked food might produce a greater quantity of meat than dry food, that the increase of meat produced by the former mode was as valuable as that which was produced by the latter, although less, perhaps, in quantity. Meat produced by the use of cooked food was not satisfactory to the consumer, as it "boiled dry," because all animals as they fatten have a certain amount of water displaced; that is to say, they contain less and less water as they approach "ripeness" when fed on uncooked food; but the water in the flesh increases, as well as fat, instead of being diminished, when the animal is cooked, and he illustrates this by the following statement:—

"Some time ago he fed one animal on steeped barley and another on dry barley, with a view of testing the merits of the two systems of feeding. The animal which was fed on the steeped barley increased very fast, while the increase in the case of the one fed on dry barley was comparatively slow. They were both killed; the loins and other parts were cooked on the establishment, and it turned out that there was much more meat in the former than in the latter."

Notwithstanding his own opinions as to the relative value of meat produced by cooked and uncooked food, Mr. Lawes considered that certain facts were still wanting to enable any one to speak confidently on the subject; but, on the whole, he thought that cooking was only advisable when food was exceedingly scarce.

Mr. Dent spoke in favor of pulping, having known many gentlemen who had given up the use of cooked food, but none who had abandoned pulping after having once tried it. He was anxious to learn, however, whether the pulped food should be given fresh or in a state of fermentation; also as regarded store beasts, the best proportions of roots and chaff; and whether it was most advantageous to mix dry food or oil-cake with roots and chaff, or to give them separately. He further stated that he had found the use of malt combs profitable in the case of milch cows, as the yield of milk fell off whenever the supply of malt combs ceased, and improved when this description of food was again given to the cattle. Mr. Dent's enquiry as to the propriety of giving the pulped roots in a fresh or fermented state is one of much practical interest, and Mr. Lawes' reply on this point was as follows:—

"It must be borne in mind that all fermentation was the combustion of that which was the most valuable of all the elements of food, namely carbon. An animal would eat till he had got sufficient carbon in his stomach, and then stop. Carbon was the measure of his feeding powers; he stopped eating when he had enough soluble carbon. That was the first substance that would disappear during fermentation; and therefore, he did not think it likely that there was any economy as regarded food in a process of that kind."

Mr. Lawes was, therefore, in favour of giving the pulped food in a fresh state, as

"There was a great risk of fermentation proceeding too far, and he thought many persons had given up the practice of mixing and pulping food, and keeping it in heaps, from the very fact that fermentation went on too rapidly.—Even if it did not putrefy, they lost the most valuable elements of the food."

Mr. Frere having asked for information "as to the influence of food in which incipient fermentation was commencing upon the work of digestion," Professor Simonds referred to this point in the first place, when pointing out the physiological view of the question, which he did in the following manner:

"As regarded the question as to whether the commencement of putrefactive fermentation was likely to interfere with the process of digestion, it was well known that the food of carnivorous animals was consumed chiefly when in a state of putrefaction; but the antiseptic powers of gastric juice were so strong that it was rendered sweet at once. The gastric juice of carnivorous and herbivorous animals did not differ, so that the same action would take place with reference to the consumption of food in which putrefactive fermentation had taken place. He did not, consequently, consider it likely to interfere with the digestive powers of the animal. His opinion with reference to all these matters was that they dealt too much with chemistry, and not

sufficiently with physiology. Mr. Lawes had truly stated that the question was, commercially speaking, whether giving cooked food would in reality pay. They ought not to be surprised to find that cooked foods were not so well calculated to build up the animal and obtain a good quality of flesh. It had been shown that it, technically speaking, boiled away, and the reason given, no doubt, was the just one, that if food was given containing a large quantity of water, more water was absorbed in the organization of the animal than if dry food were given. Speaking as a pathologist, he believed that a great number of the diseases of the lower animals were to be traced to the bad quality of blood, arising from an excess of water and a deficiency of nitrogenised food. The practical farmer knew very well that in the lambing season if the ewes eat too much wet turnips or wet tops a bad quality of blood was produced, and the ewes would become diseased and die unless a large quantity of dry nitrogenised food were given. There was another question with reference to cooked food. Admitting for a moment that it was an advantage to the animal, and that it accumulates a large quantity of flesh in a short space of time, and that they regarded that, for argument sake, as so much gain, he was inclined to think that it arose from the facility it gave for the digestion of the food by anticipating a part of the process which it underwent from the action of the gastric juice. — For a simple stomached animal like the horse, they knew very well that the food would be at once converted into a fibrous mass; a chemical change took place, and that pulpy material on passing into the intestinal canal became mixed with various secretions, including bile; another chemical change took place, and the chyme was separated from the chyle, and the latter being the nutritious portion of the food, was absorbed into the blood. The question was, whether in giving an animal, and especially a ruminant animal, cooked food, they did not to a considerable extent supersede mastication; if so, they would supersede insalivation, and thus interfere with one of the first processes of nature, and do harm. What was the action of the saliva on the food? Without going into the intricacies of the question, they had the amylaceous parts of the food first converted into sugar or gummy matter, which was a soluble material chemically allied to sugar, and, as has been stated, it was only after a sufficient quantity of carbon had been obtained that an animal ceased to feed. A provision was made in the ruminant animal for stirring up, if he might so express it, the food; and a chemical change took place in its character before it passed into the true digestive stomach. There was a re-mastication and a re-insalivation; and, inasmuch as the secretions coming from the rumen were very analogous to those with which the food was mixed in the mouth, it remained not only mixed

with saliva a much longer time, but was mixed with a much greater quantity of saliva. It then, by the use of cooked food they dispensed with part of the operations of nature and sent the food quicker into the intestinal canal, they would dispense with the process of re-mastication and re-insalivation, and he could easily understand why, although a large increase might take place in bulk, the quality of the animal might become bad. For the same reason it was objectionable to pulp food too fine, but they might with advantage soften chaff that was four or five inches long, so as to commence the process of converting the amylaceous part of the food into sugar without interfering with the functions of the rumen. There was no doubt in the world that they could induce animals to eat a larger quantity of food by imparting a relish to it, which they could do by throwing a small quantity of cooked oil cake over it, but on the whole he was not in favor of the so-called cooking of food either as a means for the preservation of the health of animals or of promoting the process of digestion. He was inclined to think, physiologically speaking, that by pulping food, cutting straw, and mixing it with a solution of oil cake, they would gain their point at a much lower expense, and in a much better manner for the animal economy.

The discussion closed with Professor Simonds' valuable remarks; and we need scarcely remind our readers that the question of cooked food is one which has been frequently agitated, and which still remains, as Mr. Lawes' observations show, in a somewhat uncertain state. That cattle will not pay if fed solely on cooked food, although they fatten more quickly than those fed entirely on raw food, has been long known to experienced feeders; but it has also been shown that a portion of the food may be cooked with advantage. This has been proved by several cases, the details of which have been laid before the public: at the same time, it is likely that pulping will, as a general rule, supersede cooking, being less troublesome and less expensive, especially when the pulping machine is driven by steam or water power.

Liquid Manure Farming at Myre-Mill, Scotland.

The glory of Myre-Mill has departed. The engine for the most part stands idle on the hill; the wooden covering of the mouths of the monster tanks are broken or rotting, and the manurial contents are hardly thought worth the expense of distribution.

Of course, everybody interested in farming pursuits has heard of Myre-Mill, where liquid manure farming was long supposed to be carried on to the greatest perfection and profit. It was first brought prominently before the public in the "Minutes of Information" re-

garding sewage manures, issued by the General Board of Health. From this account one would have supposed that the proprietor, who himself carried on the farm, under the immediate superintendence of a practical farmer, was about to realise a speedy fortune from his enterprise. We were told that "one field of ray-grass, sown in April, had been cut once, fed off twice with sheep, and was ready (August 20) to be fed off again." In another field, that had yielded within the year four cuttings of the estimated weight of nine or ten tons per acre, the aftermath was valued at £250 per acre, for sheep-feeding purposes. Swedes which had received a supply of liquid manure were ten or twelve days earlier than another lot that had got double the quantity of solid manure without the liquid application, and were better than those in a neighbour's field to which dozens of loads of farm-yard manure had been applied, in addition to 3 cwt. of guano and 16 bush. of bones per acre. Carrots and cabbages were equally susceptible to the fertilizing influence of the liquid manure; and Italian ray-grass sprung up on its application almost like the grass in that remarkable district "down east," where, though it were cropped close at night, you were lost in it by the morning, and where, if you planted carpet-tacks in the evening, they would be tennypenny nails by sunrise. And then the effect of this liquid manuring was by no means evanescent. "There is not the slightest appearance of exhaustion in the land; its fertility appears to increase. I was informed that, before the liquid manure was used, the land would not keep more than a bullock or five sheep to the acre; now it will maintain, if the crops are cut and carried in, five bullocks or twenty sheep to the acre." Somehow or other, the money returns were by no means such as these rapturous accounts of fertility implied. Those magnificent crops, instead of being a source of profit, were singularly the reverse, and the proprietor's banking account, so far as it concerned Myre-Mill grew smaller and smaller every year under the frequent cuttings and tremendous weights of Italian ray-grass. The reason was simple—the cost of production was a question never taken into consideration under this system of very high farming. When it did compel attention some five years ago, Mr. Kennedy deemed it advisable to surrender his farm into the hands of a tenant farmer, who of necessity was bound to count the cost, and the calculation was far from favourable to the practice so extensively and vigorously pursued by his landlord.

Being in Ayreshire the other day, we paid a visit to Myre-Mill, which is situated about a mile from Maybole, a short distance from the public road between that place and Ayr. The steading occupies a considerable elevation, nearly in the centre of the farm, and

possesses an unusual amount of accommodation for a 'arra of between 300 and 400 acres. It is very easy to see that Myre-Mill was built under the influence of much more liberal ideas than such as dictate the erection of farm-steadings for tenant-farmers—that it had been a proprietor's pet place. The byres, barn, granary, stables, store-houses, &c., are on a scale of sufficient magnificence for a farm of double the superficies. But doubtless it was expected that the liquid application would more than double the produce raised by the common method of manuring. The tanks for the reception of the liquid manure from the byres, stables, &c., occupy a great square in front of the root house, from which the ground was excavated, the sides being then solidly built round with stone, after which the hollow space was divided into four unequal compartments by substantial walls. The tanks thus formed measure respectively in feet:—48 × 14 × 12; 48 × 14 × 15; 72 × 14 × 12; 72 × 17 × 12. They are numbered 1, 2, 3, 4, and each has a separate communication with the well, from which the contents are pumped up. A twelve-horse engine works the pumps, and it is stated that about 4,000 gallons, which is the quantity usually allowed for an acre, can be distributed in an hour. Iron pipes, with hydrants at convenient spots, are laid over the whole of the farm, and with the hose the extent of delivery amounts to about 1,900,000 yards. The cost of this machinery was £1,586, divided as follows:—Tanks, £300; steam engine £150; pumps, £80; iron pipes, laying, and hydrants, £1,000; gutta-percha and distributing pipes, £56. One great drawback is the want of water to mix with the manurial flowings from the courts. This has to be raised a height of 70 feet from a burn flowing through the hollow in front of the steading.

On the day of our visit, however, the tanks were choke full, and water from the steading was allowed to trickle away down the hedge-side into the burn, from which the supply was usually to be derived.

The present tenant, Mr. Duncan, has little faith in the virtue of the application. At all events he does not think that it is worth much more than the cost of its distribution. In washing in guano or other manurial substances into the roots of the plants in dry weather, he believes to be valuable; but in ordinary cases he is of opinion that the money expended in applying it would be as profitably laid out in the purchase and application of solid artificial manures. In order to test the correctness of this notion, Mr. Duncan, when urged upon by the proprietor—who is still a strong believer in liquid manuring, notwithstanding the losses he sustained thereby—to distribute the tank-liquid on one of the out fields, offered, if the landlord would be

at the cost of applying the liquid to a portion of the field, to raise a better crop on the other portion with solid manure at a like expense per acre. The proprietor, however, declined the challenge.

It might be supposed from what we have said that Mr. Duncan was an out-and-out opponent of the system. This is not the case, however, he entered the farm with the belief that its value was enhanced £1 per acre by the tanks, pumps, and piping, but his opinion now is, that these are not worth a fifth or sixth of that sum.

In reply to our enquiries as to whether the application did not permanently benefit the soil—whether the field from which the immense crops of Italian ray-grass had been raised did not develop in a corresponding degree, the other crops in rotation, Mr. Duncan stated that he thought more was due to the heavy manuring that Italian ray-grass demands than to the watering with liquid from the tanks.

We are not disposed to think so lightly of the value of liquid manure as Mr. Duncan appears to do. Undoubtedly great results have been obtained from its application, but it is equally certain that its value has been by some very much over-rated; and we are doubtful whether it can be shown to be profitable where great and costly works have to be erected for its collection and distribution. But where farms are so situated that the liquid can be distributed over the fields by gravitation, there can be no question as to the benefits to be derived from its use, and it would be gross waste in such circumstances to allow it to flow away into a ditch or a burr, to stimulate the weeds in the one, and poison the trouts in the other.—*Scottish Farmer.*

Pig Breeding and Feeding.

A few days since a lecture on the breeding and feeding of pigs was delivered to the members of the Worcestershire Agricultural Society, by Mr. Baldwin, of Bredon House, near Birmingham.

In opening the lecture, Mr. Baldwin said—In 1845 he entered on a farm at Kingsnorton. In 1846 he purchased two gilts and a boar, of the Tamworth breed, from his cousin, Mr. T. Baldwin, of Barnt-green, who was famed for his breeds of Tamworths; and although he (the lecturer) commenced breeding with three pigs in 1846, in 1851 he sold £1,000 worth of store and fat pigs within one year; and in the years 1852, 1853, 1854, and 1855 he sold £1,000 worth each year. The idea of feeding such numbers of pigs was first conceived by him at a county meeting at Worcester, in 1849, after free trade had come

into operation. The meeting was called to take into consideration the state of agriculture, and to petition government to pass another act for its protection. At that meeting he (Mr. Baldwin), believing it impossible to return to protection, moved an amendment to the effect that, as the tax upon malt was a burden upon the British farmer, it should be repealed. Mr. Curtler was the principal speaker in favour of protection, and, during his address, produced many samples of foreign produce at amazingly low prices. Among them was a good sample of Egyptian corn at 9s or 9s. 6d. per bag; Indian corn at the same price, and Dantzic wheat also very low. Mr. Curtler then exclaimed, "Gentlemen, or you grow them at these prices?" He (Mr. Baldwin) being a consistent free-trader, looked on the bright side of the question, and began to ask himself how he might turn the low price of corn to good account. It struck him that as he had a great many store pigs, he would feed them, instead of selling them in stores. He accordingly bought a large quantity of Indian corn at from 9s. to 9s. 6d. per bag, to begin with; and within two years and a quarter from that time he had sold £2,000 worth of pigs, and cleared, after paying all expenses, £500, besides making vast amount of manure, which he considered far better than guano, because more durable. During the greater part of these two years and a quarter, Indian corn, Egyptian barley and feeding barley ranged from 9s. to 12s. per bag of ten score, and he sold his fat pigs at from 7s. 6d. to 8s. 9d. per score. The plan which he adopted in breeding was to put sows to the boar in November, and pick breeders principally from the earliest pigs. When he had got his stock up to about 100 breeding sows, in picking the breeders, he used to pick them several times over, as frequently happened that those which looked the prettiest and best when young altered considerably when they got three, four, or five months old. The rule was to pick the growing pigs, and those that were straight and thick through the shoulder and head, and experience had convinced him that this method of choosing was a correct one. There need be no greater proof of that than the number of medals and prizes he had obtained. He always kept to the Tamworth breed, generally purchasing the boars, but breeding the sows. If he found the pigs getting fine, he purchased a good strong boar, and the animal exhibited tendencies in the same way he picked a boar of good small bone, but was always particular to pick a boar that was thick through the shoulder and head, and a straight-growing pig of the same colour and breed. By carefully following this plan he got the breed so good that it was a

to see even a middling pig in the
 ock, though he bred from 250 to 300 each
 ear. His plan of keeping was as follows:—
 as soon as the sows littered they were kept
 on kibbled oats, scalded, with raw swedes or
 blage; and when the pigs got to the age
 of three weeks or a month, he turned the sows
 out from them for a short time every day, and
 re the pigs a few peas or a little Indian
 corn while the sow was away. When the
 weather was fine and warm the pigs went out
 with the mother into a grassy field for a short
 time. He found that young pigs, from the
 age of three weeks, required dirt or grit, and
 therefore, if the weather was bad, and they
 could not be turned out, it was necessary to
 put some grit into the sty. This was very
 important, as he believed it was quite
 necessary for the proper digestion of their
 food. He had had young pigs looking very
 well and drooping, but when turned out, that
 they might get dirt, they soon became all
 right again. In fact, it was absolutely neces-
 sary, during the whole life of a pig, to allow
 an opportunity of getting grit or dirt, or it
 could not thrive well. At seven or eight
 weeks old all the pigs he did not require for
 feeding he had cut, and began to wean them
 fortnight afterwards. He then turned them
 out into a grass field, with a hovel for them
 to run into, and allowed each pig a quart per
 day of peas, Egyptian beans, or Indian corn.
 English beans did not answer for young pigs,
 being too heating. He gave them one pint
 of corn in the morning, and the other in the
 evening, with regularity as to time and quan-
 tity, and found it better to give to them on
 a grass, in a clean place each time, than in
 a trough, as it prevented quarrelling, and
 the pig got his share. With this quart of
 corn per day, and what grass they got during
 the seven months of the year, with nothing
 but water to drink, the pigs would, on an
 average, make 5 lbs. of pork each per week.
 After eight months, he allowed an extra half-
 pint of corn per day. At the present price of
 corn the allowance would cost about 1s. per
 week for each pig; grass, 2d.; attention of
 man, 1d.; total cost, 1s. 3., leaving a profit of
 1s. per week on each pig when pork was at
 7s. per lb.; it was now 7d. One man attended
 to from 200 to 250 pigs; he was an Irish-
 man, for few Englishmen liked the job suffi-
 ciently well to take an interest in the pigs,
 a carelessness on the part of the man ma-
 terially decreased the profit. He kept the
 sows when in pig the same as the other
 ones. They ran about in a field till a fort-
 night before pigging, when he placed them
 in a covered shed, so constructed as to admit
 much sun as possible. Young pigs kept
 in the manner described were always nearly
 enough for porkers, and did not require

more than two or three weeks feeding on meal.
 It was time enough to begin to feed pigs for
 bacon at 8 or 10 months old. Good breeding
 sows he allowed to have two farrows, and some-
 times three, but never more, and then feed them
 for bacon, supplying their places with young
 sows. In selling store pigs he charged a cer-
 tain price per lb., allowed the purchaser to pick
 the pigs from the field, which plan always gave
 satisfaction, and secured a return of custom.
 It was desirable in breeding animals to have as
 little bone as possible in proportion to flesh.
 He had tested a cut sow of his breed, about 30
 months old, which weighed 32 score, and the
 whole of the bones, after the flesh had been
 boiled from them, only weighed 21 lbs.; so that
 for every pound of bone there were 32 lbs. of
 meat, which he believed to be a fair average of
 his breed. His pigs made 2 lbs. of flesh for
 every 4 lbs. of good Indian corn, barley, or
 peameal; as a rule, he preferred the Indian
 corn. He considered it always to be more pro-
 fitable to feed upon good food than upon in-
 ferior. As a rule, pigs would thrive better for
 being turned out once a day, except in wet wea-
 ther, and they would also be healthier, more
 active, have a cleaner appearance, would pos-
 sess a great advantage in the show-yard over
 heavy, ungainly pigs, which could not move
 about to show themselves. One of the greatest
 pleasures which his breeding afforded him was
 to see the number of labouring men who came
 to buy from him, and he hoped to see the time
 when every labouring man would have a good
 pig in his sty.

III Effects of Bad Corn.

A very curious and important paper appeared
 in the *Veterinarian* for February, 1862, which
 is highly worthy the attention of our readers,
 not only as a record of some very interesting
 facts, but as holding out a serious warning
 against the false economy of using bad corn as
 food. Mr. Mitchell, of Leeds, the gentleman
 who first called attention to the matter, has
 kindly promised to supply us with specimens of
 the corn in question, but in consequence of se-
 vere illness he has not at present been able to
 fulfil his promise. As the subject of such im-
 mediate interest, however, we have determined
 to reserve for future remark anything that may
 be presented by the specimens on their arrival,
 and to present the facts as they are presented to
 us in Professor Varnell's paper.

In a letter dated August 27, 1861, Mr. Mit-
 chell states that a gentleman in his neighbour-
 hood had lost six horses in a very sudden man-
 ner. A *post mortem* examination convinced
 some of the most eminent veterinary surgeons
 in the surrounding district that their death was
 due to poison; but an analysis of the intestines
 or their contents, as well as of the food which
 they had eaten, failed to show the presence of

any mineral poison, or of any appreciable deleterious organic substance. Three feeds, however, of the oats which formed the principal part of their food were administered to a horse by way of experiment, and death rapidly ensued.

At the same time, an old though healthy mare was purchased and placed in the same box, but fed on food obtained from a different source, and after a week, as she was still in good health, she was removed. A second experiment, however, was made with a pony, which was placed in a stable, at several hundred yards distance, and after three feeds with the suspected oats he was found dead, having eaten only a part of the third feed.

It was pretty clear, therefore, that the oats were the cause of mischief, but whether the evil proceeded from the oats themselves, or from any vegetable poison mixed with the oats, was doubtful. It was determined, therefore, to consult the best authorities in London, and an ample supply of the oats was forwarded for the sake of experiment as well as of analysis.

Accordingly, on the 10th September, 1861, a brown mare was procured by the college for the purpose of testing the oats. She did not fail quite so soon as in the two preceding experiments, but on the third day her hinder extremities became partially paralysed, and on the fifth she died. The oats were again analysed in London, and showed no traces of any known mineral or vegetable poison; but from the whole history of the case it seemed certain that the evil, whatever it was, was intimately connected with the oats themselves.

On a closer examination of the corn, apart from any chemical investigation, it was observed first, that it was musty and of a bad quality. It is not stated whether it was the produce of the previous rainy season, but in all probability such was the case. Many of the grains were then found to be matted together in lumps by a thready, cobweb-like substance.* The greater part were covered with a black smutty matter, and the grain decomposed, the fecula being replaced by a blackish gray substance, which often projected beyond the surface. On examination this was found to consist of one or more species of mould. The examiner referred what he saw to the genus *Aspergillus*, but it is clear from the figures that there was certainly some species of *Ascochyta* as well, and probably the common *Penicillium* was also present.

Without the opportunity of personal examination, we are unable to say whether any spe-

cies of *Ustilago* had a part in the matter, but it is not probable that this was the case, as the spores of the *Ustilago* of the oat are easily blown away by the wind. The effects therefore produced by *Ustilago hypodytes*, as reported by Mr. Edwyn Sidney, or of the large *Ustilago* of the reed, whose evil properties were first made known by Mr. Marshall of Ely, are not so much to the point as those which relate to the occasional effects produced by mouldy provisions strongly resembling those which presented themselves in the cases before us.

Professor Barnett, in his "Outlines of Botany," gives an account of the supposed deleterious effects of bread and animal provision when extensively covered with mould. A substance called Italian cheese, made of fragments of pork, strongly seasoned and converted into a sort of pie, is much used in some parts of the continent. This substance when mouldy has in many cases proved fatal. Dr. Paulus, of Saltz, records three deaths out of seven persons who were attacked with dangerous symptoms after partaking of such food; and many other cases are reported by other observers.

Mouldy bread and flour are also sometimes productive of similar evil. A case occurred at Hammersmith, about 1831, in which a family suffered from the use of some bread which was covered with a yellow mould. The bread, however, was itself of bad quality, the mould having appeared the very day the bread was baked. On analysis no poison was found, but the same bread when administered to a cat and dog was equally deleterious.

A question, however, arose whether the poison was in the food itself, or in the mould. Five grains of the mould, carefully separated from the bread, therefore, were administered and produced no bad effect, though a small piece of the bread from which the mould had been scraped produced colicky pains and a tendency to diarrhoea. To test the matter more closely, a quantity of dough was allowed to become mouldy in a damp place, and when the mould was carefully removed, it was made into a small loaf and baked, and the loaf thus formed had precisely the same poisonous properties as the Hammersmith bread, while the mould itself was eaten by a cat and dog with perfect impunity.

The subject attracted great notice in Paris some years ago, from the barrack bread becoming covered with a bright red mould almost soon as was baked, due to the species of *Penicillium*, *P. sitophilum*, but we are not aware that it led to any positive results as to the deleterious effects of the fungus.*

* Wheat of 1860, which was in general in a very bad condition, exhibited frequently a curious appearance when stored up in large quantities. If the surface wheat was removed gently, the subjacent grain was found to form more or less solid pyramids of different heights, which were found on examination to arise from the grains being bound together by threads spun by a little mite. The wheat from these pyramids was extremely clammy when handled, and had a peculiar smell. In this case no mould was present, but it is possible that the oats in question might have been milted as well as mouldy.

* The mould, it should be observed, was not confined to the bread in this instance, but was found equally on wheat and flower of which it was made. The heat to which the fungus spores are exposed in the process of baking is fatal to their vegetation, and accordingly almost before the bread was cold, the fungus began to grow in the inside of the loaves, which soon became a bright pink or salmon color. The particular species of mould had not been previously observed by mycologists.

On the whole, then, it may perhaps appear doubtful whether the mould in the cases quoted above was the real cause of mischief, so much as the decomposition which the several substances had undergone, though it must be remembered that in such cases it is absolutely impossible to separate the parasite completely from the matrix on which it grows, the spawn or mycelium penetrating in every direction, and perhaps being equal in quantity to the threads which appear externally.

It is not necessary for us to enter into the peculiar symptoms presented by the several horses. It is sufficient to state that they were upon the whole such as would be caused by the administration of a narcotic-irritant poison, like that of fungi. Whether, however, the ill effects produced were due to decomposition of the oats themselves, or to the mould which grew upon them, the lesson is precisely the same, namely, to give a caution against the use generally of old food. Mouldy hay and mouldy grain alike re-sure in the end to be the dearest.

Should we be fortunate enough to obtain a sample, attention shall be paid to this and other matters arising from the question, which even its present imperfect form can scarcely fail to be interesting.—M. J. B., in *Gardener's Chronicle*.

Progress of Wages in Scotland and in Ireland.

At the monthly meeting of the Statistical Society, held at St. James' Square, London—Sir Isaac Newton, Bart., in the chair—a paper was read by Mr. Frederick Purdy on the state of agricultural wages in Scotland and Ireland. The writer commenced by referring to a paper on English agricultural wages, read by him in May last, and to the circumstances of the subsequent issue of a parliamentary return for Scotland, and one for Ireland, both modelled on the English return, and both for the same period—the half year ended at Christmas, 1860. Dividing Scotland into three groups—viz., the northern, containing nine counties, from Shetland to Kincardine, the men's wages were 12s. 6d. per week on the average; women's, 5s. 6d.; and children's (under 16), 4s. That the men's average earnings by task-work were 13s. 6d. In three of the counties, men's harvest wages were 14s., 15s., and 19s. respectively. The midland group embraces nine counties, beginning with Forfar and ending with Bute, the men's wages were 13s. 2d.; the women's, 5s. 7d.; and children's 4s. The task-

work wages of the men 14s. 8d. a week. The southern group contained the thirteen remaining counties. The men's, women's, and children's wages were 13s. 2d., 6s., and 4s. 9d. respectively; the task-work wages, 15s. 3d. In some of the midland districts the harvest wages were very high, as, in Dumbarton, 21s.; Forfar, 25s.; and 26s. 6d. in Perthshire.

The statistics of the cost of the food consumed, and of the clothes worn by the Scotch peasantry, both in the present and the former times, were next treated of by the writer, with a view to illustrate the command which the money wages at the respective periods gave the labourer over the articles of his consumption.

The Irish returns were discussed under each province. In Ulster, the wages of the men during the half year averaged 7s. 3½d. per week; the women, 4s.; and the children, all the latter being less than 16 years of age, 3s. 2d. It was noticed that in Ireland the wages of one woman and of one child were together generally equal to those of one man; but that in Scotland the men's wages were considerably above the remuneration obtained by a woman and a child together. The task-work earnings of men in Ulster were 9s. 4d. a week. The Colonaught men had 7s.: the women, 3s. 11d.; and children, 3s. 1d.; men's task-work, 8s. 10½d. In Leinster, men obtained 7s.; women 3s. 9d.; and children, 2s. 9d.; the task-work earnings of the men, 9s. 9d. Finally, in Munster, the men were paid 7s. 2½d.; the women, 4s. 3d.; and the children 3s.; the task work earnings of the men, 9s. 2d.

It appeared that taking the wages of the agricultural labourer as unity, the weaver was paid 1½, the shoemaker 2, the tailor 2, and the baker 2½, the carpenter 2½, and the bricklayer and mason 3 times as much at the same time and the same districts throughout Ireland.

The paper concluded by bringing the principal facts for the different parts of the United Kingdom together. It was shown that men's wages in England and Wales averaged 11s. 6d.; in Scotland, 12s. 9d.; and in Ireland, 7s. 1d. That in 23 years the rise in the English wages had only been 12 per cent., but that in Scotland, at an interval of twenty years, the rise was 42½ per cent., and in Ireland over 57 per cent. The fact of the low rate of increase in England, as compared with Scotland, was dwelt upon; there were special causes why the rate in Ireland, however gratifying, should not excite surprise. It was strenuously maintained that "the English wages were kept down by two causes—viz., the cruel and impolitic settlement of lands, and the large expenditure for out-door relief. Is it not manifest that when we distribute in England £3,000,000 a year, as untested relief, among the labouring population by the hands of the employers of labour, we place at the disposal of the latter an instrument as powerful as it is pernicious for depressing the fair wages of

Headaches are sometimes produced by the clouds of which rising up from the mouldy hay when taking rest; and the same effect has been observed to arise from the spores of such moulds as the common species of *Aspergillus* in other situations, when produced in excessive abundance.

the workman? It is well known that the lowest wages in England were paid in the most pauperised counties. But in Ireland, where there is no out-door relief, the least and the most pauperised provinces are on a par as regards the wages of independent labour; in Ulster, men's wages are 7s. 3½d., and that province has fewest paupers; but in Munster, the most pauperised, the wages are only 1½d. a week less? Taking corresponding districts in England, we find that in Northumberland wages are 14s., while in Dorset they are only 9s. 4d., or 30 per cent. less. Is there any escape from the conclusion?"

The Chairman, in proposing a vote of thanks to Mr. Purdy for his valuable contribution to the industrial statistics of the empire, observed "that there was one very important point of progress in an agricultural and social point of view, especially in Ireland—namely, the advance of the weekly wages beyond the money power of cottier labour and proprietary. In a text-book on agriculture by Mr. E. Murphy, the Professor of Agriculture at Queen's College, Cork, he sets down eight acres as the quantity of land workable at high culture by a farmer and his family, and that by the employment of a degree of skill not always found in large farms the money result obtainable by the labour of his family, and that, too, if they had no casualties, was £23 per annum, or say 8s. 10d. per week, or 1s. 3d. per diem, exclusive of milk and potatoes. Milk and potatoes were frequently given, plus the money wages stated in the statistics. But the average wages of the family, for man, woman, and child, had now risen to 14s. 5d. weekly on the average in Ireland, whilst in Scotland the family wages had got to 23s. 11d. weekly. The money power of these wages was greater than Burns' cottier or small farmer could get; more than Burns himself could have got. The wage family might feed better than he could on the produce of his small farm."

Sea-weed as a Manure.

The utilization of waste products has occupied much attention of late years, both among manufacturers and agriculturists, and there can be no reasonable doubt but both these great classes of human industry will continue to reap many advantages by steadily pursuing a course of investigation in this direction. Sea-weed, of course, is only available in its crude form as a manure in places near the coast, so that by far the larger portion of Canada is precluded benefitting from this source. Sea-weed is extensively used as a manure along the coast of the New England States, and it might also be

in some situations on the Gulf and Lower St. Lawrence. In a recent number of the *Farmer's Magazine*, [English], we meet with the following observations:—

"The utilization of a common waste substance was recently brought before the public, in an admirable paper read before the Society of Arts by Mr. Stamford, on the useful application of sea-weed. From an elaborate chemical experiment which he had carried out, and a personal examination of the Scottish and Irish kelp works, he produced facts tending to show the great importance of this subject, and how much might be made of it in a commercial and agricultural point of view. It is not necessary that we should follow him into the chemical inquiry and the manufacturing processes and results, by which he proceeds to show how much may be done to add to the various commercial products obtained from sea-weed. Our business lies with the agricultural phase of the question, and how we may be able to diffuse some information of importance to many who have hitherto neglected, or else not duly appreciated, the rich stores which nature has so bountifully placed within their reach. In England generally sea-weed is little valued by agriculturists as an actual fertilizer, and appears to be regarded rather as an economical and useful covering to protect turnips and other roots from winter frosts. Farmers object to its bulk and expensive carriage—particularly now so many portable artificial manures are offered for sale, and recommended so strongly by their manufacturers as possessing great fertilizing value in a small compass. Mr. Stamford speaks strongly upon this. "There can be no question," he observes, "that many of these are worthless rubbish, and perfectly useless, except to line the pockets of the vendor; and the farmer would do well to turn his attention to the composition of sea-weed ash, which really does contain all the constituents of a good manure in a small compass." The ash from the charcoal, in making kelp, usually contains over 20 per cent. of earthy phosphates, the proportion being about that in Peruvian guano; and if the crude ammoniacal salt obtained by distillation were added, in the proportion of about 40 per cent., a manure would be obtained worth from £10 to £12 per ton, of which from 3 to 4 cwt. would be sufficient for an acre of land. The phosphate of magnesia it contains points to its special application to beet-root and clover—Mixed with about 5 per cent. of the chlorides of potassium and sodium, it would be equally beneficial to other root and cereal crops. Liebig divides crops according to their wants into three classes—potash plants, lime plants, and silica plants; such a manure contains the food for all or either of these.

The value of sea-weed as a manure is most

appreciated in the channel Islands. Many of the agriculturists there use no other manure. The best drift-weeds appear to be torn up from the Atlantic, as they are found chiefly on the western coasts in Guernsey and Jersey. It is computed that about 30,000 loads of weed are annually obtained from the rocks and bays of Guernsey and the adjacent small island of Herm, valued at 2s. per load. The quantity collected at Jersey is fully as much. A great deal of drift-weed finds its way up the channel, and is washed in and out of the numerous harbours, and thrown on the flat coasts. Many thousands of tons of sea-weed are deposited annually on the coast of Sussex, but a small portion of which is utilized. The agricultural produce of the Isle of Thanet is said to have been tripled by the use of this manure, and the farms on the L. thian coast let for 20s. or 30s. more rent per acre where the tenants have a right of way to the sea-coast, where the weed is thrown ashore. Drift-weed is largely used in Ireland as the only manure for the potato crop, which requires a considerable supply of potash. The residual sea-weed ash from the iodine factories in France is highly valued as a manure, and constantly carried a distance of thirty miles from the factory. The agriculture in the western islands is also enriched by this manure, and some of the tangle is brought into Oban by fishermen, in boats, and sold at 1s. per load. On the south-east coast of Fife, it is laid on the stubble at the rate of 20 cart-loads an acre, and ploughed in; the clover crop never fails, and this is a crop requiring much phosphate of magnesia, an important constituent of sea-weed ash. In the Isle of Lewis 20 tons of sea-weed is considered ample for a Scotch acre. The marine algæ are valuable because the salts contained in them destroy foul weeds, hence cultivated fields on the sea coast are almost free from those noxious plants that infest the lands of the interior.—Sea-weed is used extensively for manure on the Cornish coast, particularly near Penzance, for the growth of early potatoes, and the land in consequence brings almost fabulous prices.

Great Britain alone, exclusive of Ireland and the Scottish isles, possesses a coast line of seven thousand miles, and it is assumed by some that sea-weed might be collected to an average of 3,000 tons per mile per annum. And yet out of this large natural supply but a very small proportion is collected and utilized. In its most prosperous days kelp was never manufactured to a greater extent in the United Kingdom than 28,000 tons per annum—an amount which would require about 560,000 tons of sea-weed. But the quantity now used in kelp making in Great Britain is scarcely more than a third of this. And yet the French manufacture nearly three times the quantity of kelp from sea-weed that we do.

In a new work published by H. Platt in 1601,

styled "The New and Admirable Arte of Setting of Corne," the author says: "Sea-kelps and sea-tangle and other sea-weeds are founde by experience to assist both arable and pasture grounds exceedingly." "There is nothing new under the sun; but we may profit more generally than we do by the information thus given 260 years ago. Opinions will, however, differ as to the utility of sea-weed as a manure: some believe it to be good for one season, others that it is scarcely worth a mile's cartage. There can be little doubt of its utility as a fertilizer when easily obtained, and within a moderate carting distance."

Agricultural Intelligence.

Importation of French Merino Sheep.

A very superior flock of French Merino Sheep came over on the steamer *Zimmerman* from the United States, yesterday afternoon. The flock is composed of ten rams, and was imported into Canada by Mr. John D. Patterson, of Westfield, New York State, for the purpose of improving the breed of sheep in this country. The lot were all young sheep, but of very large size, and covered with fine silky wool, between three and four inches in length. Mr. Patterson is one of the most extensive breeders of stock in the Union; and he imported the French Merino Ram from France, which gained the prize of 450 francs at the World's Fair, held at Paris in 1855. Several of the sheep imported yesterday have already been purchased by some of the enterprising farmers in Vaughan and Markham. The others will be on view for several weeks at the Agricultural Implement establishment of Messrs. Patterson Brothers, Richmond Hill. While they were standing in front of the American Hotel yesterday, they were minutely inspected by a large number of citizens and many farmers, all of whom appeared struck with their large size and peculiar appearance, the animals being covered from the nose to the feet with long, compact, and beautiful wool.—*Globe*.

NEW YORK STATE AGRICULTURAL SOCIETY.—Col. B. P. Johnson, Secretary of the Society, has made arrangements to attend the International Exhibition in London, for the purpose of superintending such articles as may be forwarded from the United States. Mr. J. was the Commissioner from the State of New York to the first World's Fair, at London, in 1851, and performed his duties with signal ability, especially in the department of agricultural implements and machines, bringing them to the notice of other nations, and opening to our manufacturers and inventors an extensive and profitable field of business, and introducing improvements which have greatly improved and perfected the agricultural operations of the entire world.—*N. Y. Paper*.

Hungarian Grass.

Our farmers have now been experimenting with this grass four or five years. Each succeeding season a larger breadth has been grown, and it may now, without doubt, be considered one of the standard crops of the west. Many of the extravagant claims at first urged for it have been laid aside, as have also many of the objections that, later, were brought against it. It is a prolific grass, yielding considerably more per acre than either the prairie or tame grasses, and is superior to the common millet, though not differing materially from it in its nature. Its seed is more cily, and consequently a heavier feed than millet, is a somewhat more vigorous grower, and hence a surer crop. Indeed, so deep rooted is it, that severe drouth does not affect it in the least, and may be sown upon the highest and dryest soils without fear of failure. All kinds of stock, cattle, horses, sheep, and hogs are extremely fond of it, and when fed judiciously, we have yet to hear of an instance where any injurious effects have followed its use. Doubtless many horses have been injured, perhaps killed outright by its use, but these cases, to the best of our knowledge, are where the seed has been given immoderately, just as over feeding of any heavy grain will produce disease in animals.

Some have complained of its being an exhaustive crop, but we think it has not been found more so than wheat or oats, certainly not more than buckwheat, and, like the latter crop, the ground is left in most excellent condition—light and free from weeds. Corn does well as a succeeding crop.

Hungarian may be sown any time from now to the middle of the month, and if to be cut for hay alone, perhaps the present season a little later. If for hay, sow one-half bushel per acre; if for seed, about one-third of a bushel is sufficient.—*Illinois Prairie Farmer, June 7.*

Agricultural Productions of Nova Scotia.

Nova Scotia has already become somewhat famous for its apples. The crop is generally sure and large, and sorts which in England require a wall or espallier, will here grow and thrive in the open orchards as standards. In 1860 186,484 bushels of apples were raised in the Province—Annapolis County raising 65,405 bushels. Mr. R. Starr, of King's County, and Mr. W. Chesley, of Annapolis County, contributed to the preliminary local exhibition at Halifax no less than 50 varieties of apples raised in their own orchards. The fruit attains an enormous size. A specimen of the "Gloria Mundi" sent to England measured from 15 to 16 inches in circumference. Hardy kinds of grapes, will, in the Western Counties, do well out of doors. During the past year the "Black Hambro" and "White Cluster" ripened in the open

air. The pear—hardy sorts—Plums, Cherries and Tomatoes do finely—the latter fruit ripen well in the open air. The Squash and Pumpkin have been grown of 140 and 1 pounds weight. Onions grow well and in large crops—indeed, this may be said of kinds of root crops. Specimens sent to England measure 17 inches in circumference. A native potato is found in the woods, which the Indians use as food. Potatoes yield on an average about 230 bushels per acre, and the tubers less affected by disease than in other countries. In 1860 9,284,864 bushels were raised. When imperfect cultivation, yields from 25 to 60 bushels per acres—specimens sent to England weigh 62 and 64 lbs. per bushel. Barley is sure and heavy crop; the Bald Barley will yield about 40 bushels per acre—specimens weighing 54 and 56 lbs. per bushel. In the Western Counties Indian Corn proves a most profitable crop, yielding 60 to 66 bushels per acre—specimens sent weigh 60 lbs per bushel. Buckwheat thrives well—specimens sent weighing as much as 56 lbs. per bushel. Garden Field Seeds, of all kinds, grow remarkably well and produce profitable returns.—*Halifax Journal.*

WOOL EXHIBITION.—There is to be a great wool show under the supervision of the State Agricultural Society at its annual exhibition to be held at Cleveland, September 15th 19th, 1862. Competition is open to the world. Wool will be divided into four classes. 1. Fulling Wools. 2nd. Delaine Wools. 3. Cassimere Wools. 4th. Combing Wools. Twenty-five fleeces must be exhibited to entitle exhibitor to a premium. Mr. S. N. Goodale, Cleveland, will have charge of this department.—*Prairie Farmer.*

Horticultural.

Hamilton Horticultural Society.

[This Report came to hand too late for the number.]

The first show of the Hamilton Horticultural Society, for the season, was held in the Mechanics' Institute, on Saturday, 24th inst., the anniversary of Her Majesty's Birthday. At which the Society rejoice in celebrating and honoring by a production of nature's beauties. The show was an excellent one, honour to our ambitious city: creditable to the gardeners and their encouraging employer gratifying to the citizens who take an interest in the laudable objects of the Society.

The vegetables and fruits were few, but as much as could be expected for the time of the year. The winter apples were good,

an excellent state of preservation. Asparagus, Radishes, Lettuces and Rhubarb, good early cabbage, fall-sown Onions, and early Potatoes very fair. The Floral department was the principal attraction; and on this occasion excelled of the former at the same time of the year. The Geraniums were well grown, and fully answered, many of the Foliage Plants rare and excellent. The Fuschias were much admired, particularly the lesser and double varieties. The Calceolarias, Gloxinias, Achimenes, and Green House Plants were much to be commended. The Amateurs made a very creditable appearance. In the collection of Foliage Plants from the Hot Houses of John Brown, Esq., there was as a plant of the *Musa Cavendishii*; to this class belong those universally esteemed fruits, the Banana and Plantain; they are by some called the Indian Bread Trees. Some of the species grow to the height of twenty-five feet, and are rarely cultivated to any extent out of their tropical climates. The *Cavendishii* is a native of China; its dwarfish habits render it suitable for any plant stove or warm Conservatory, where it may be cultivated with success: its ordinary height is about five feet. Sir Joseph Paxton represents it as a most valuable species. Some authorities maintain that no other plant produces so much nutriment from the same space of ground as the Banana. Of the numerous uses to which it is applied, the following may be mentioned: the tops of young plants are eaten as a delicate vegetable; the fermented juice produces an agreeable wine; and the fruits may be dried and ground into meal, served up raw and stewed. Slices fried are said to be a delicacy; and finally the leaves are used for catching and basket making. Charles Lees, Esq., exhibits in his collection of Green House Plants the *Ornithogalum Squilla* (By Linnaeus called *Maritima*). It is a native of Sicily, Greece, Barbary and Spain. The bulbs of the *Ornithogalum Umbellatum* have been known from time immemorial by the Persians. They are roasted like Chestnuts, and eaten with vinegar, and pepper by the Italians; and they are thought by some writers to have been Joseph's dung which was sold for five pieces of silver during the siege of Samaria, in the reign of Ahab.

PRIZE LIST.

Achimenes, best six in pots, Thos. Buchanan, gardener to W. P. McLaren, Esq. 2nd do, do; *Gloxinias*, best three, William Hill, gardener to John Brown, Esq. Varieties, Marshall, Rex, resident V. Vandem Heeke. 2nd, Thos. Buchanan; varieties, Grandis, Marchalli, Madame Agner. *Calceolarias*, best four in pots, distinct varieties, William Hill. 2nd, Thomas Buchanan. Best specimen, Thomas Buchanan. 3rd, Robert Murray, gardener to John Young, Esq. *Cinerarias*, best four in pots, Thomas Buchanan; varieties, Magenta (new), Beauty of Chestnut Park, Mrs. Goodfree, Countess of Rox-

borough; 2nd, R. Murray; 3rd, William Hill. *Foliage Plants*, best six, William Hill. Varieties, Maranta Tebrina; Croton, tricolor; C. Pictum; Caladium Chantini; Dracaena Terminalis; Cissus discolor. 2nd, Thos. Buchanan. Varieties, Cissus discolor, Dracaena terminalis, Croton Pictum; Caladium tricolor, Diffenbachia picta, Mananta Tebrina. *Gloxinia*, best six, 1st & 2nd, Thomas Buchanan. *Fuschias*, best four distinct varieties, William Hill. 2nd, R. Murray; 3rd, William Hill. Double best, three distinct varieties, R. Murray; 2nd, William Hill; 3rd, do, do. Best single specimen, R. Murray; 2nd, William Hill; 3rd, do, do. *Geraniums*, best four, R. Murray. Varieties, Sir Henry Smith, Elegans, Reine de Belle, Arnold's Virgin Queen; 2nd, Thos. Buchanan. Varieties, Mar. e, King, Butterfly, Arnold's Virgin Queen, Sir Henry Smith. Best single specimen in this class, R. Murray; 2nd Thos. Buchanan. *Fancy Geraniums*, best four, William Hill. Varieties, Itolinskii, Cloth of Silver, Jeannie Deans, Morning star; 2nd, R. Murray. Varieties, Miss Allan, Jussieu, Superb, Additta, Itolinskii; 3rd, Wm. Hill. Best single specimen, William Hill; 2nd, R. Murray; 3rd, William Hill. *Scarlets* or other colors in the class, best four, Thomas Buchanan. Varieties, Beaton's Nosegay, Mons. Martin, Christina, Mrs. Fielding; 2nd, Wm. Hill. Best single specimen, R. Murray; 2nd, William Hill.

Green House plants, best twelve, Thomas Buchanan. Varieties, Vinca Alba, Angelonia gardeneri, Clerodendron fragrans, Vinca rosea, Stephanotis floribunda, Lantana Alba, Erica Ventricosa brivefolio, Hydrangea Nortensis, Calceolaria rugosa, C. Pallidior, Pentas carnea, Calceolaria, D. O'Connell. 2nd, William Hill. Varieties, Pentas carnea, Pentas rosea, Gardenia radicans, Gardenia florida, Allamanda neriifolia, Heya Bella, Polygala oppositifolia, Centradenia rosea, Erica alba, Erica Ventricosa Superba, Erica humalis, Asclepias salicifolia. Best six, R. Murray. Varieties, Asclepias salicifolia, Myrtus belgica Hydrangea nortensis, Calceolaria rugosa, Calceolaria pallidior, Cytisus racemossus. 2nd, William Hill. Varieties, Tollya netrophylla, Cuphea emines, Cytisus racemosus, Cuphea parviflora, Calceolaria rugosa, Erica Beaumontiana.

Ferns, foreign, best six, Thomas Buchanan. Varieties, Pteris agria, Pteris tricolor, Gymnogramma chrysophea, Adiantum pubescens, Lastrae glabella, Asplenium pinucillatum; 2nd, Wm. Hill. Varieties, Gymnogramma peruviana, Pteris Sagittifolia, Todia Pellucida, Asplenium Belangeri, Pteris tricolor, Acrostichum alciocore.

Natives cultivated, best six distinct varieties, Wm. Hill; 2nd, John Freed.

Herbaceous plants, best six Spikes, John Freed.

Native plants cultivated, best six distinct varieties, Wm. Hill; 2nd, Wm. Sanderson.

Pansies, best 12 distinct varieties, Thomas Buchanan; 2nd, William Chapman, gardener to Isaac Buchanan, Esq., M.P.; 3rd do. do.

Roses, best six cut blooms, 1st and 2nd, Thomas Buchanan.

Shrubs, hardy, best six spikes, distinct varieties, John Freed; 2nd, Thomas Buchanan.

Tulips, best 12 distinct varieties, Thomas Buchanan; 2nd, Bruce & Murray; Verbenas, best six in pots, distinct varieties, Thomas Buchanan; best 12 trusses, John Freed; 2nd, William Chapman.

Bouquets, best hand, Thomas Buchanan; 2nd, William Chapman; best table, Thomas Buchanan; 2nd, William Hill.

AMATEUR CLASS, WITH SMALL GREEN HOUSES.

Green House Plants, best three, George Carlisle, Esq.; 2nd, Charles Lee, Esq.; Geraniums, best three distinct varieties; C. Lee, Esq., Cottage Window Plants, best specimen, Mrs. Sharp.

LADIES' FLORAL DEPARTMENTS.

Best Hand and Table Bouquet, Mrs. C. Lee.

SPECIAL PRIZES.

By W. P. MacLaren, Esq., Calceolarias, Herbaceous, best six distinct varieties in pots, Wm. Hill.

By D. L. MacNabb, Esq.; Tulips, best 25 distinct varieties, Bruce & Murray.

By M. Murray; best Table Bouquets, William Hill.

By W. Michael; Geraniums, Fancy, best six, William Hill.

By J. H. Greer, Esq.; Ferns, foreign, best six, distinct varieties, Wm. Hill.

By John Freed; Pansies, best three distinct varieties in pots, Thomas Buchanan.

By John Brown, Esq.; Green House Plants, best twelve. Varieties, *Torrenia asiatica*, *Bouvardia linthea*, *Ardisia fructo alba*, *Ardisia crenulata*, *Cleome dilleniana*, *Justicia speciosa*, *Calceolaria rugosa*, *Asclepias saicifolia*, *Ereca tricolor*, *Hydrangea*, *Japonica protensis*, *Euphorbia fulgens*, *Cuphea platycentra*.

By John Brown, Esq.; Foliage Plants, best six, William Hill. Varieties, *Musa*, *Cavendishii*, *Cissus discolor*, *Manantu Zebrina*, *Tra-cena terminalis*, *Pavetta borbonica*, *Dieffenbachia maculata*.

By G. L. Reid, Esq.—Fuchsias, best six varieties, not to exceed 5 feet in height, R. Murray.

FRUIT DEPARTMENT.

Best twelve apples of one kind, 1st and 2nd, William Chapman. Best and greatest variety of Apples in the best state of preservation, not less than 6 varieties, William Chapman. Cucumbers, best brace, Thomas Kilvington; 2nd, William Hill.

SPECIAL PRIZES.

By T. C. Kerr, Esq.—Apples, best twelve, Rhode Island Greening, William Chapman; Baldwin, Charles Depew; Russets, C. Depew.

By William Holton, Esq.—Northern & C. Depew.

By R. Bull, Esq.—Best collection, three of sort, Thomas Lottridge.

By George Laing—Cucumbers, best brace, William Hill.

VEGETABLE DEPARTMENT.

Asparagus, best twelve heads, William Chapman; 2nd, R. Murray; 3rd, Thomas Buchanan. Cabbage, early, best three heads, Wm. Hill. Lettuces, best four heads, William Hill.

Onions, seeding, best twelve, fall sown, Thomas Buchanan. Red, best six, of 1861, best state of preservation, T. Kilvington; 2nd, W. Taylor. Yellow, best six, A. W. Taylor.

Parsley, curled, best bunch, A. W. Taylor.

Potatoes, kidney, best 2 quarts, Wm. Taylor.

Radishes, long, best twelve, H. B. Bull.

Turnip, do, best twelve, A. W. Taylor.

Rhubarb Stalks, best six, John Freed; 2nd, Thomas Kilvington.

Spinach, best peck, A. W. Taylor.

SPECIAL PRIZES.

By J. M. Williams, Esq.—Asparagus, best twelve heads, Thomas Buchanan.

By R. Osborne, Esq.—Lettuces, best brace, William Hill.

By J. Wilkes, Esq.—Potatoes, kidney, best 2 quarts, William Hill.

By James Gay, Sea Kale, best six brace, William Chapman.

By J. M. Williams, Esq.—Spinach, best brace, A. W. Taylor.

By W. Hill, Parsley, curled, best bunch, William Hill.

By H. Shaw—Rhubarb, best six stalks, John Freed.

EXTRA BY SOCIETY.

For Indian Onion Plant, *Ornithogalum laetius*, Charles Lee, Esq.

The Judges, Messrs Fleming and Young, Toronto, and Messrs. Holden and Tackell, St. Catharines, expressed themselves highly pleased, especially with the Foliage Plants and Geraniums.

GEORGE LAING.

Hamilton, 30th May, 1862.

On the Decay of Orchards.

There is a general complaint in New England, Canada, and the Western States, that orchards are dying, and that young orchards do not flourish as well as they formerly did. Various causes are assigned for this, and no doubt there is more than one cause for the evil. We are inclined to the belief that the principal cause is the action of borers, for there are doubtfully more than one species of this sort. One kind, and the most destructive species, is that which attacks the tree near the ground and does its mischief by girdling the trunk of the tree (*Superda Bivittata*.) This most

commences just at the edge of the ground, it will be out of sight, and works upward round the trunk, and is oftentimes never detected. It is some time doing its mischief, here it does not completely encircle the tree with its channel, or groove, it (the tree) lives a sort of lingering, feeble life several years, and finally die.

Once set out some trees from a nursery, had been perforated near the ground by them. We examined them carefully, and were that they had been all got out. The tree very well, and bore fruit a year or two, then gradually dwindled down and died, in spite of care and nursing we could give them. Examining them after death, we could find no parent cause for their death but the perforations that the borers had made near the junctions of the trunk and roots, they were transplanted. It had not peeled, the water and continued moisture getting in, and a gradual but final decay.

We said that there were several species of borers. Some think that the one mentioned above never meddles with the branches; but there are those that do. We found at least two kinds doing mischief on the bark in the branches. One kind is rather common and seems to confine its operations beneath the bark and the wood. We have always noticed it there. The bark is always black and dead above its lodgment, but whether the insect that produces it is laid there before the bark has been killed or after, we are not able to

There are other branch borers that plunge into the wood and burrow about with a gimlet in their heads, that seems to enable them to go here about the limb they want to. We cut a large limb of an apple tree the other day, we supposed was killed by the cold weather of winters ago, and found three of these last fellows in it. From their size and the tortuous of their galleries we are led to change our belief of the cause of the limb's dying, and attribute it to the borer. It is possible, however, that we are wrong in this, and those we found belong to that kind that operate only in wood that is dead and decaying, as there are some

An apple tree, like other fruit trees, has its special and specific enemies. We wish that Mr. Packard and Brackett would make the study of them a specialty for a time, and give us a treatise on apple-tree insects—their habits and their remedy.—*Maine Farmer.*

Trees and Rain.

The following remarks from a recent number of the *American Agriculturist*, are deserving of serious attention of the owners of wooded

It is plain to every observer, that our coun-

try is now more subject to drouths than it was twenty or thirty years ago. Within the last five years we have suffered in this respect seriously. The loss to the farming community, and through it to the whole population, has been many millions of dollars. If they continue for several years more, in frequent succession, there is a reason to fear that the "hard times" will pass away very slowly. Is there any natural cause of drouths, or are they sent upon us solely as special visitations of Providence for our national sins? We would not speak lightly of such visitations, but we are inclined to think that our sufferings in this particular may be traced chiefly to our own bad management. The wide destruction of our forests doubtless has something to do with the production of drouths, and of these destructive floods or "freshets" which are becoming alarmingly frequent.

If the country is widely denuded of its trees the land is more exposed to the burning rays of the sun, and to the winds which cause a very rapid evaporation. Then, too, forest-trees are so many pumps to suck up moisture from the depths of the earth, and to diffuse it through their leaves into all the surrounding atmosphere. From thence it falls upon the surface of the ground. Perhaps some of our readers have amused themselves with making estimates of the amount of water evaporated from the leaves of a single tree, and then of a large forest, in a single day. To one who has never thought about it, the subject is one of great interest. All readers of history know that many of the rivers and streams of the old world, which once were wide and deep, have now shrunk into much smaller dimensions; from what cause can any one tell, if not the hills and mountains are now almost entirely bereft of trees? Drouths prevail all over the eastern continent, with increasing severity; and scientific and observing men everywhere proclaim that this is owing chiefly to the cause of which we now speak.

Valleys and lowlands, and fertile plains should of course be cleared of trees and devoted to farms and gardens; but at least the rocky hills and mountains should not be shorn of their leafy honours. Let the trees stand sacred from the desolating axe, all along our heights, to break the fury of storms, and to condense and bring down the useful vapours of the clouds upon fields and into our springs and streams. It is high time that the older States of the Union began to move in this matter, either regulating the destruction of our old forests, or encouraging the growth of new. We believe that some wholesome law touching this matter would both secure our posterity a good supply of lumber, and a good degree of exception from drouths.

All that individuals can do in this matter is to preserve their own forest land in just proportion and by underdraining, thus deepening the soil, and giving it a porous spongy character, render the land capable of absorbing and retaining as

large a quantity as possible of the water that falls upon it, instead of allowing a large portion to flow off as is now generally the case. Our State Legislatures might we think with great propriety remit the taxes for 20 years on all land devoted to high forest, (not low woods for charcoal and hoop poles) and tax land which might but does not carry a good growth of high or low woods at the rate of its value would warrant if properly improved.

Are Cottage and Farm Gardens Cultivated to the best advantage.

It is really astonishing how precious the worthy denizens of the cottage and the farm cling to the use-and-wont system of preparing the ground for the reception of both vegetables and flowers. All the lecturing of horticultural and agricultural writers will not suffice to drive some of them one peg of their usual routine. If you advise some of them verbally how futile it is, comparatively speaking, to be satisfied with the doling out of a certain quantity of manure year by year, and only digging their ground some eight or nine inches deep, when less manure, and digging or trenching twice the depth, would be more satisfactory in the aggregate, producing culinary examples far more palatable, and not only imparting a sounder constitution to the respective examples of plants, but a more lengthened existence to the flowers that decorate their borders, some gravely aver, in reply, that the system which they have adopted and practised many years has been upon the whole satisfactory; that, with due reference to your ideas, they as yet have seen no cause to modify or revolutionize a system practised by their fathers before them—in a word, they have no intention of giving ear to such new-fangled notions, probably exchanging certainty for hope. Others again, less arbitrary in their notions, admit that your suggestions and arguments are very feasible, but excuse themselves upon the plea of onerous duties during the day and further, submit that it has, hitherto, required all their spare time in the evenings to get their seeds into a proper bed at the proper time. In fact, there are no end of excuses where parties are disinclined to try a method novel in their ideas.

It does not require much logic to meet these and such like argument—indeed, they have been combated over and over again. They are the fragments of an obsolete system, and must explode betimes on the age of progress.

Deep digging offers a powerful inducement to the industrious cottager of obtaining by a little extra labour, a larger return with less outlay; and few cottage gardens are so inconveniently large as to preclude the tenant, if he wills, bringing it to the highest point of cultivation.—Manuring alone will not produce a high state of

cultivation, but the whole secret lies in trenching. A high state of cultivation depends in the first place, on the land being properly drained. All the foreign matter you can introduce has a qualified effect until his operations are efficiently performed. Deep digging is the essential, and it has many collateral advantages. It ameliorates the character and condition of the soil in many ways; it offers the least obstruction to water in its passage down ards, consequently raises the temperature; it is more thoroughly aerated—more exposed to the action of the atmosphere, which adds powerfully to the nutrition of the growing plant; while, at the same time, the roots revel in the loose staple in a way unknown to the best example of land superficially treated; its chemical ingredients, in many instances, are materially enforced by bringing up the subsoil, and that is of very great importance; it is one of the best means for getting rid of slugs.

If ground be trenched three spits deep in spring there will be few—very few, indeed—make their appearance in that quarter, and there be a plot of grass contiguous, or a narrow row of box edging, which holds enough to tolerate any quarter of ground in a garden, however large. It is curious that a great number find their way to the surface on ground that has been trenched two spits deep, but a thirty-inch war will be found a deep enough grave for the troublesome pests to the vegetable creation.

This is an important consideration for all holders of small gardens, say, and large gardens to take into account, especially those who have tenacious soils, rich in alumina, and proportionately backward for generating and assisting the development of crops in the early season. Many of the small seeds when in an embryo state prey to those man-robbers, and often the blame attached to the unfortunate vendor. He kills all that it comes in contact with for time being, but it is impotent in its effects two hours after application. Surely, then, deep digging, if it offers so many advantages chemically and physically, with the chances of being pested with these devourers of germinated and young fresh plants of the Brassica sect to boot, is worthy of the best farmer's, the best gardener's, and the poorest cottager's high consideration.—JAS. ANDERSON, Meadows.

—Scottish Farmer.

Onion Culture in Massachusetts.

The amount of onions raised on the Sea-board of some of the New England States is almost incredible. We saw hundreds of acres while on a tour some years since. Women are extensively employed in the culture, and the crop, although very variable, is often highly remunerative. Very quantities of onion seed is annually saved, and market gardeners in Canada greatly prefer it

imported from Europe. A Massachusetts Independent of the *Country Gentleman* under date of May 8th, facetiously remarks :

"rains—cool nights and mornings, Cullens are embracing every fair moment to put to seed. Many a pound of onion seed has been buried alive within a week. Notwithstanding the depredations heretofore made in their still they are planted in hope—for even a crop of onions pays better than any other that can be grown in our fields. No man expects more than \$20 net income from a field of onions, or \$30 from a field of Indian corn ; but a moderate growth of onions brings in one hundred shiners. Why not, then, go in for that which pays best ? There is no danger of glut in the market. Heretofore, all that have been raised have been readily sold at fair prices.—One can pay better at fifty cents per bushel, than corn at one dollar, or hay ten dollars per ton ; thus the shrewd calculator will spare no pains in growing onions. They have this merit ; they do no one any harm, and if they make the ladies turn up their noses occasionally, they enable them to show their teeth to better advantage, provided they are not false or rotten. If they are, the sooner they learn to their ways, the more to their credit will

Raspberries.

A master seeing his men very busy in doing this," asks the following question, and gets the following answer, "John, what are you doing ?" "Nothing, sir, "William, what are you doing ?" "Please, sir, I was just looking at John." "Very good. Here is March upon us ; I will see if I can't find better employment for both of you. Get Parke's fork, go into the Raspberry-bed ; take up the roots, and fork the bed all over : mind there is nothing like deep cultivation !" This is tolerably obeyed by John and William. Now, any man how he can expect to have a crop of raspberries after this fashion ? Not so ; the old roots broken, but the new ones are broken also ; and the roots being exposed to sun, and wind, like the ends of a rope, of course the crop dwindles away.—As a man comes to the absurd conclusion that the garden will not bear strawberries and raspberries. Look at the gardens of England in July, and you will find that, except in wet, long summers, there are neither of these

Never disturb the ground at all ; hand- and cover the whole soil with stable litter the horse, with a little black manure round the plants, and you will have more raspberries than you know what to do with. If the summer is very sultry, give each stool one bucket of water twice a week. A raspberry, like a tick, lives by suction. From three to five

canes are enough, and these should be cut down to 3 feet. You will get as much fruit by this height as if you left them eight feet high. In a word, the dormant eyes at the base will break, protect the young canes, and keep off the sun. Mine are strong, and are cut to an average of 2 feet 9 inches. I have only one sort, the Beepot [red,] which with this treatment never fails.—The crop last year was enormous ; but, for want of sun, lacking in flavour. Under proper treatment it cannot be too hot for raspberries and strawberries. Weak liquid manure and Peruvian guano one small handful to a stable bucket of water, will greatly assist. With regard to forking the ground, I must observe that I have not moved mine for the last four or five years. If you do move your ground, instead of your new canes coming up close to the stools, you will have them all over the bed.—The candle will burn at both ends, and in the middle too. Keep all runners down except those close to the stools. The closer the ground is kept down the greater will be your crop.—High manuring—upon an undisturbed surface are two main features in growing raspberries and strawberries. No man tears out the stomach and entrails of his horse and pig in order to fatten them ; but this is what a man does when he despoils the roots and rootlets of his plants. I am encouraged to make the above remarks by the numerous letters of thanks, which I have received from your readers, in different counties for my strawberry article. The preparation for raspberries is precisely the same as for strawberries. I think the best distance is a yard from plant to plant, and from row to row. The following raspberries are well spoken of by Mr. Rivers, in his noble catalogue of fruits. Red Antwerp, Yellow Antwerp, Fillbasket Fastoff [red], vulgarly called Falstaff ; Carhills' Prince of Wales [red], Carter's Prolific [red], I have tried the Red Antwerp and Fastoff ; but they bear no comparison for canes and crop to the Beepot, which, I suppose is the same as Kuevett's Giant ; moreover, it never blights. Finally, what a pity it is that John and William should work so hard—first, in doing nothing ; secondly, in doing worse than nothing ; and that men generally who possess so acutely "five senses," should be so lacking in the sixth and best of all, "common sense."—W. F. RADCLIFF, Rushton Rectory.—*Florist and Pomologist.*

The Dairy.

Hints on the Art of Butter-Making.

In order to make pure butter, something is required besides the good breed of cows, the sweet grasses, the soft springs, the rolling lands, the rich milk, the most experienced churners,

and the most improved machinery; the best material may be manufactured into yellow grease instead of butter, unless the process is properly performed. It is a fact too well known to dairy-men, that the butter is not made by agitating the milk—not by the process of churning. Butter already exists in the milk, and the art of separating it from the milk, is that on which the success of the dairy depends. Butter exists in globules so small as to defy the detection of the eye, unaided by the microscope, and the removal of these globules without crushing them, is the delicate and difficult task the dairyman has to do. There is no luxury that comes to the table which is so exquisitely sensitive as butter. If the cow feeds on white clover, the butter has a white clover flavour; if she feeds on cabbages, the butter has the flavour of cabbage; if the butter is kept in the vicinity of the stable, it forthwith becomes tainted with the smell of the stable; if packed away in pine tubs, it catches the taste and odor of the pine. It requires skillful handling or it will certainly be spoiled. If there is too much rubbing in the churn, these fine globules, mashed and crushed against the sides of the churn, will give greasy butter; and if the air is excluded the gases will injure it. What can be done, you inquire to cause the adhesion of the globules without grinding or breaking them. Experienced churned charners answer the question, when they caution young beginners not to churn too fast; not to heat the milk too much; not not to overdo, &c. They may not it in every instance understand the philosophy of the fact, but they do know the fact, that 'overdoing' make grease and not butter. The seasoning of butter is a matter of taste, and there are a great many persons who imagine that the more salt they put in butter the better it keeps. That is a great mistake. Just enough, and none too much is what is required. Too much will spoil the taste and not save the butter. Without penetrating any deeper at present into the philosophy of butter-making, we will simply add, that a gentle and uniform agitation of the milk will best reward the butter-maker for his pains. The butters should be kept away from all unpleasant odors, and when put down should be packed in white oak tubs. Clean cows, clean stables, sweet pans and churns, and neat and tidy operators, are among the things desired by those who would send pure butter to market.—*Am. Ag.*

The Poultry Ward.

What Ails my Fowls?—Hen-Pecked Husbands.

In response to the above question, proposed by A. A. N., in the eleventh number of current volume of *Country Gent.*, we would remark that

in regard to the falling off of the feathers his fowls, there is not so much of disease as it, caused as we think, by a morbid appetite, apparently induced in the outset, by the impurity of the fowls under confinement, and possibly the want of gravel, calcareous matter, and mal food, which they obtain when at liberty, the way of worms, grubs and insects. That is habit, is evidenced from the fact that they are the aggressors, and are guilty of "hen-pecking" their husbands. We have noticed that the cocks are the victims; they will straddle and suffer the hens to pick not only the feathers from their heads, necks and backs, but even flesh to the bones, and sip the blood as it drops from the wound; and what is singular, they stand with their heads down, and suffer themselves to be robbed of their flesh and blood and be denuded of their feathers, without the least resistance! The habit is difficult to cure and we have known it kept up till some of the individuals of the flock who were made especial victims, were almost entirely denuded of feathers, and in some cases have even had their entrails torn out. Sometimes a particular cock shows a more inveterate disposition to pick feathers than the rest of the flock. It is, if not very valuable, to kill such—at any rate move them from the others. We have never known fowls when at liberty, to be guilty of this foul habit.

The best prevention or preventives are: mal food, broken bones, oyster shells, pulverized charcoal, varieties of grain, pure water, clean and well-ventilated apartments, with a free air, and we will venture to say you will not be surprised by seeing those ragged, half-denuded, rough-looking objects about the premises.

The wants of poultry are very clearly set forth by a correspondent of the Boston Journal, the following amusing sketch: "A most interesting illustration," says he "of the want of air and the effects of its presence, came under notice on my voyage from South America to sunny France. We had omitted to procure fresh air for our poultry, and in a few days after we were at sea the poultry began to droop, and wound up their afflictions with the pip, or as sailors term it, the scurvy. Their feathers fell from their bodies, and it was perfectly ludicrous to see the numerous unfeathered tribe in most profound misery, moping away their time in an utter state of nudity. Amusing was, one day, by fishing up gulf weed, which floated in immense fields upon the surface of the sea. I took from it numerous small crabs about the size of a pea. The poultry with one accord aroused themselves from their torpor, and being aware of the therapeutic qualities of these interesting animals, partook of them with greater avidity than an invalid ever swallowed 'waters of the springs.' After a few days the excellence of the remedy was apparent;

— began to crow, the hens to strut and look
— and in a few days all appeared in quite a
— gait of feathers, derived from the lime,
— constituent part of the crab shells.

M. Siez of Switzerland, gives an account of
— experiments in the feeding of domestic
— fowls. He states—first, that the fowls to which
— a ration of chalk is given with their food, lay
— the shells of which are remarkable for their
— whiteness. By substituting for chalk a calcare-
— ous earth rich in oxide of iron, the shells be-
— come of an orange-red colour. Secondly—he
— tells us that hens fed on barley alone would
— lay well, and that they tore each others'
— feathers. He concludes that this proceeding
— is from the desire of the hens for azote food.
— New-York, May, 1862. C. N. BEMENT.

(Country Gentleman)

Veterinary Department.

(Conducted by A. Smith, V. S.)

Diseases of Bone—Splints.

Bones constitute the skeleton and are for the
— use of giving support to the body, protect-
— ing various delicate organs also for locomotion.
— They are of the different bones that various muscles
— are attached, and owing to their acting as levers
— different movements are performed.

One is covered by a thin fibrous membrane,
— called the *Periosteum*, which is strong and varies
— in thickness, being thickest in those parts
— which are covered by muscle. When this membrane
— becomes inflamed, lymph, a product of inflam-
— mation, is thrown out between the periosteum and
— bone, the lymph becomes converted into cal-
— careous matter, and this again into bone; this when occur-
— ing on certain parts is called *Splint*.

A splint is a bony enlargement technically call-
— ed *Exostosis*, and the usual situation is below
— the knee, and between the large and small
— metacarpal bones; it also occurs on the outside of
— the leg, especially with horses having the toe
— which is turned in.

Splints are of most common occurrence on
— the lower limbs of animals, and the reason is that at their
— ends the periosteum is largely supplied with
— blood, and it more readily takes an inflamma-
— tion, and the effused products are very abundant,
— which shew a great tendency to become transform-
— ed into osseous structure.

Suppose a young horse is put to fast work on
— rough roads when the feet are subjected to con-
— fusion; the result of this tells on those bones
— which are most solid and upright, hence splints
— form on the shank bones, and generally on the
— lower limb.

Splints seldom cause much lameness unless
— they are rapidly deposited. When occurring on
— the sides of the limb and especially when ac-
— companied by bony enlargements about the pas-
— teurage, they indicate weakness, a tendency to

bony growths, and a consequent liability to
— lameness. When situated close to the knee,
— splints sometimes produce a great degree of
— lameness, from interfering with the articulation,
— in some cases are very difficult to detect, are apt
— to be overlooked, and may prove a very obstinate
— lameness.

Action produced by Splints:—The animal
— may walk sound, when trotting he has a droop-
— ing gait, and not with the bending of the knee.

Treatment.—When inflammation exists,
— either hot fomentations or cold applications
— should be used, or if practicable let the horse
— stand for an hour several times a day, up to the
— knees in a pool or stream of water, and allow
— perfect rest for ten days or a fortnight. When
— heat and tenderness are removed, if lameness
— still exists, setons are most useful, or, in some
— cases, the operation of Periosteotomy give in-
— stant relief—that is dividing the periosteum.

When splints do not cause lameness they
— should not be interfered with, as on a well form-
— ed leg, and situated low down, they do little
— harm. Firing and blistering is sometimes had re-
— course to. A seton, however, is preferable, its
— effects being more lasting and not so apt to
— leave a blemish.

The Brood Mare.

The question has often been discussed as to
— whether the sire or dam exerts most influence
— on the produce. We have usually observed
— these discussions to be conducted under prede-
— termined notions, instead of seeking to unravel
— facts with a view to arrive at logical conclusions.
— Breeders of thorough bred horses alone seem
— fully to understand the real importance of at-
— tending to the qualities of both sire and dam,
— and that until the exercise of judgment and pro-
— portionate good fortune favouring, the latter is
— obtained, the former cannot be availed of.
— That good weight-carrying horses of mixed
— breeds have become annually more scarce dur-
— ing the last thirty years, few people will deny,
— and most men who are interested in the subject
— are of opinion with ourselves, that one of the
— chief deteriorating influences has been a want
— in appreciation of the value of the mare on the
— part of farmers. The foregoing observations ap-
— ply especially to the best breeding districts in
— England, taking, for instance, the East and North
— Ridings in Yorkshire. Any one who remembers
— the fine Cleveland bays, the coaching and hunt-
— ing mares of years gone by, with those of the
— present time, will acknowledge that these have
— become scarce in number and inferior in quality
— as compared with the same class of former
— times.

We have asserted the want of understanding
— the real value of the mare has been a primary
— cause to check improvement, and has produced
— loss to the country of the best mares—those

adapted to produce carriage horses, hunters and roadsters. Let any one offer what is considered a good price, and the best brood mare in the district is taken away, and the breeder, without any reason, congratulates himself that he has made a good sale, and has turned in ready money, whilst he has, probably a bad, long-legged filly, in no way calculated to become a brood mare, which he none the less keeps to supply the place of the good mare he has sold; this has been of constant occurrence, the mares not being sold from one farmer to another, but to leave the country. Again, of late years mares have been more used in towns than formerly; they have brought better prices in the market: hence another inducement to sell very good animals. There were also some causes between twenty and thirty years ago which led to many farmers parting with their good mares. It was when railways were first established that many took alarm, and believed that horse-breeding would no longer prove remunerative. A little previous to that time, when roads were being macadamized, the streets of London improved, and light carriages substituted for heavy, and the continental dealers became the best buyers—those from Paris especially being amongst the best judges in the market—the old-styled strong class of coach horse was objected to; these men wanted good heads, good action, in fact, good horses with breed. This new demand on the part of the dealers ready to buy at high prices when they found the horses they wanted, led to a more extensive use of blood stallions with the coaching mares; and had these horses been of the right sort, the result must have been good; but for the most part, the blood horses were amongst the worst that could be found for that purpose, overgrown, leggy animals, with flat sides and bad feet, and many produced stock that was really no good at all. Reared on rich grazing lands, the young stock from such crosses grew fully as high and more lengthy than the old coach horse, but with a want of power, action, and wearing qualities; simultaneously with the change came a great increase in the number of roasters. It was soon seen that narrow, long legged horses would not do for work, nor would they sell to pay; but it was not so easy to retrace the steps. The bad colts could be got rid of at one price or another, but the fold-yard and the field became stocked with bad fillies; the wide, good, old-fashioned mares disappeared; it is true there were always a few good ones left, and there are some still, though they are scarce. We wish to show the tenant farmer that it is to his interest to incur a liberal outlay for the best young mare he can find in the country, and then equal good judgment in the selection of a stallion, though he go some distance in search of him, and to continue the process by equally good management of his stock in all seasons. A valuable brood mare to an intelligent farmer is like his richest field, re-

quiring good seed and diligent cultivation, then, not otherwise, will horse-breeding prove a profitable branch of agriculture.

This subject which has been at other times treated in our pages, we have been induced to notice again at this season, through looking the columns of *Bell's Life*, in which are often to be found the names of horses with their merits so set forth and tabulated as to be seen at a glance; we have been struck by perusal of the list of stallions to see that of the most fashionable of the present seasons of one mare. We shall comment on progeny, because it so fully supports all our notions respecting the value of the brood mare and illustrates what we have said in the foregoing paragraphs. The stallions Stockwell, Ratanplan, King Tom, Knight of St. Patrick, the Knight of Kars are all sons of the requis of Exeter's mare Pocahontas; we never to say that no such example in the value of produce of one living mare can be adduced. We shall not now multiply this value by adding the second generation of this extraordinary animal; they are yet young, though one stallion from amongst them, a St. Leger winner, St. Leger, is just advertised to cover at 20 guineas a mare, whilst Kettledrum and others will surmount in due time.

For the instruction of some of our readers we will give the prices at which these five lions are advertised to cover: Stockwell 10 guineas a mare, Ratanplan and King Tom 10 guineas each, and the two last named stallions respectively at 30 and 10 guineas. The horse at the head of this list has been a subscription full for some months past, and doubt the next two have their allotted number before now. If we take fifty mares each, the number put to these five horses, that give a sum of 8,500 guineas for the season, this is the more extraordinary when it is taken into account that the oldest of these five mares was only foaled in 1849; it is too soon to look back to Pocahontas, with all the multiplied advantages that her produce will represent ten or twenty years hence. We know of no other mare that has produced such a number of good stallions to begin with.

Comparisons, however are not the main object which we seek to deduce important conclusions from this notice: we could adduce an indefinite number of instances where the highest blood mare has added to the wealth of a man, and not a few in which the useful and well managed, has greatly improved the position and status of the farmer, all going to show that the English horse-breeder should not let the Arab over his mare, when he really produces a good one: by no means lightly part with it as the opportunity does not occur very often, even when judgment and money are available to find good brood mares of any distinct quality. Besides, we do not know what they will pro-

til tried. Hence the increased value of a good stallion over an untried one, and of those whose produce has proved winners, or of high prices in the market, over that of a faulty one.—*Edinburgh Veterinary Re-*

Mortality amongst Ewes.

the earlier districts of England and the north of Scotland, the lambing has generally proceeded very favourably; a large crop of lambs is reported, and in some flocks an unusual prevalence of twins is spoken of. One gentleman is surprised by beginning a prolific season with 17 lots of twins, and a triplet. The success of the keep has told favourably on the value both of the ewe and lamb, and neither the ewe nor offspring have yet suffered materially from the provoking continuance of the unseasonable wet. But to some farmers the wealth of the keep has not been altogether for good, and they learn that the ewes in some quarters have been ailing several weeks before lambing, dying apparently from some fulness of blood. We have recently heard of several cases occurring on some of the rich lands of the midland counties of England, and append the following interesting letter from a correspondent who has suffered, in the same way near the good old city of York:—

"In this neighbourhood the mortality among ewes of breeding ewes is unusually great, but has induced the sickness which in so many cases proves fatal seems difficult to ascribe. Owing to the turnip crop being remarkable good, ewes have never been better kept; the greater number of them having been fed on turnips on the arable land, *ad libitum*, and therefore in as good condition as can be. We generally remove them to the grass two or three weeks before lambing, and feed with a moderate allowance of oats to secure a good flow of milk, and it is at this period that disease of a fatal kind has its appearance. The first symptoms are—somewhat resembling the sturdy, a staggering gait, followed by dulness, refusal of food, and a complete prostration of strength, so that the animals are compelled to rise on their hind legs, they walk feebly for a few steps, and lie down as soon as possible. It is certainly that young fresh ewes in good condition succumb to disease before lambing, especially as the pastures are in a very forward state for the season of the year. We might be inclined to conclude the cause had been in operation for a considerable time. A few years ago my neighbour's ewes were similarly affected. They were roused up when laid down they got wildly about, staggered backward and might be expected they lambed without aid and died along with their sickly offspring.

I must not omit to state that the weather during the last three weeks has been very wet, so that the ground is thoroughly saturated. Will you be kind enough to inform me in your next week's paper what system of management may at once be adopted, and how the sickly ewes should be treated after disease has shown itself.

The excellence of the winter keep, the early luxuriance of the grass, and the liberal extra feeding, have, doubtless, conspired to produce a condition of plethora, in which the symptoms described appear to depend. We last summer met with several cases amongst cows of a character very analogous to those described by our correspondent. The animals were four and five years old, in high condition, and fed on clover, with vetches and some bean flour given at night when the cattle were driven into a yard. Three weeks or a month before calving they became restless and stupid, neglected their food, were feverish and unsteady on their legs, and several died rather suddenly and after only a day's illness. But it is certainly seldom that such overfulness of blood does harm either to cows or ewes before parturition. After that event, however, it frequently causes much mischief, producing especially the apoplectic and very fatal form of puerperal fever. Within a month or six weeks after lambing, when the thriving lambs begin to get strong, and the spring grass is fresh and plentiful, the milk is apt to become so rich and abundant that the lambs appear to thrive too rapidly, take diarrhoea, and die in numbers. Many rich grass lands are on this account unsuitable for ewes and young lambs.

To arrest the disorder will possibly be found somewhat difficult. The grass fields selected for the ewes, when they are removed from the turnips, should be as dry as it is possible to find in this wet season; whilst the herbage ought not to be too luxuriant. It will conduce to health if they have to roam a little for their food. The Swedes should be given only in moderate amount, and the oats may be discontinued until after lambing. With the excellent condition of the ewes, there is little fear of shortness of milk. If afterwards found deficient, a little oilcake mixed with bran will be useful, and is preferable to the oats, which sometimes produce, in sheep unaccustomed to them, disordered stomach and constipation. Salt should be provided in covered troughs, and a little nitre, which may be conveniently given mixed with bran, will also be advisable, care being taken that individual sheep do not take more than their own share. An ounce will suffice for eight sheep, and the medicated mash may be safely enough continued for a week or ten days without much risk of its acting unduly on the kidneys.

The treatment of the disease when once developed will prove, we fear, rather unsatisfactory, for sheep always make indifferent patients, and ewes heavy in lamb are especially difficult to

doctor, and can stand neither much medicine nor any rough handling. Purgative medicine, with a laxative diet, and an occasional dose of nitre will constitute the appropriate remedies. A moderate and early bleeding may also be advisable, but will have the serious disadvantage of being apt to bring on parturition. For both prevention and cure the great matter is to keep up if possible the action of the several excretory channels—the bowels, the skin, and the kidneys, and to promote a healthy state of the body by moderate and judicious feeding.—*The Veterinarian*

Miscellaneous.

Curious Phenomenon.

"How is it that you raise such large and nice onions?" I asked of an Iowa farmer, as I was sitting at table with him, and observing some on the table.

"Well," said he, "we sprout the seed with boiling water, and then plant it early and in good ground."

"Sprout the seed in boiling water?" I exclaimed, inquiringly. "What do you mean, sir, by that? Won't boiling water kill the seed?"

"Not at all," he replied; "but it will sprout them, in one minute's time,

"It will? It looks incredible," I replied with surprise.

"Well, you try it," he replied, "when the time comes to plant, and you'll find it just as I tell you."

And sure enough, when spring came, and my neighbour was planting his onion seed, being present, I said:

"Jewell, last winter there was a man in Iowa told me that to pour boiling water on black onion seed would sprout it in one minute. Suppose you try it?"

"Very well," said he. And taking the tea-kettle from the stove, he poured the boiling water on the seed, which he had in a saucer. Looking closely at it for a moment, exclaimed, "You have told rightly. Only look there."

I looked, and behold, the little sprouts about as large as horse hairs were shooting out of the opened ends of the seeds! He did not retain the water on the seed above three seconds, and in less than one-half minute after it was poured off, the sprouts were projecting from the seeds.

My Iowa friend assured me that this process would advance the growth of the onion two or three weeks beyond the ordinary method of planting without sprouting.—*New England Farmer*.

PARRAFINE.—How wonderful to trace the circulation of matter in nature, even in such an apparently simple thing as a burning candle!

Parrafine has existed in other forms for millions of years, perchance in the rain and the atmosphere which fostered the tree and the shrub, in the tender flower, flourishing in worlds now passed away. Vegetation seemed to perish, and leave no trace behind; but nature, ever working, was storing the relics, to accumulate them in the exhaustless coal beds, destined to illumine the inhabitants of the worlds to be. And now as the taper grows smaller and smaller, we can tell what part those products of its combustion will have to play in the economy of the universe? They are not lost, but will enter once more into the foliage of the future, as the same products entered into the dim, mysterious past. Thus by an eternal round, parrafine may produce parrafine, as a grain of wheat produces grain of wheat.—*Mechanic's Magazine*.

THE DEEPEST "DUG" WELL IN THE WORLD.—A clever lecture by Mr. Henry Cant, tells us that the Warren Farm well is not an artesian having been dug, not bored. The scientific facts he says, learned from this great work are: that the upper green sand has no existence at this locality; that the gault is double its usual thickness; that Mr. Martin, of Fulborough, is right in saying that gault should be classed with chalk and, lastly, that digging is better than boring a well. The upper chalk extends 418 ft. the grey marl, 155 ft.; blue marl, 173 ft.; fire stone, 8 ft.; gault, 282 ft.; ditto, with green sand, 25 ft.; clay, 5 ft.; green sand, 5 ft., ferruginous beneath; from which we may deduct 1 per cent for the dip. In the strata pierced for sil oysters and ordinary gault fossils were found also fossil wood perforated by the terebratulæ, some cases having the cavities filled with bisulphate of iron. He believed the water came from Ditching Common. Mr. Hollis said that the artesian wells at the County Lunatic Asylum, at Hayward's Heath, was nearly 900 ft. deep, and its supply derived from the ferruginous strata. The water was very wholesome and the supply so abundant that, after they had pumped out 40,000 gallons, it hardly lowered the level one inch.—*Sussex Express, England*.

THE ALPACA WOOL.—The shearing of the alpacas which was in process at the time we published our last summary, has recently been completed, and we are happy to state that the result is considered very satisfactory. The number of animals shorn was 306, and the total amount produced was 24 cwt., making an average of 8½ lb per fleece. Besides the above the flock includes a number of last years lambs none of these were shorn, their fleeces being too short. By far the large portion of the wool was obtained from animals born in the colony, and the fleeces are consequently those of Australian alpacas, this being the first regular shearing that has taken place. The sample is pronounced a very fine one; and a great improve-

up on the former clip. The wool will be shipped, and it will be a matter of rest to learn how much the first large parcel Australian alpaca will realize in the English market.—*Sydney Morning Herald* Feb. 19, '62.

THE POET LAUREATE AND THE LATE PRINCE CONSORT.—It is stated that Mr. Alfred Tennyson received from the Princess Alice a most interesting autograph letter, written by command of her Majesty, expressing the intense pleasure of consolation which the Queen has derived from the dedication prefixed by the Laureate to the new edition of his "Idylls of the King"—a work which was an especial favourite with the Prince Consort. The following is the dedication referred to:—

These to his memory,—since he held them dear,
For chance as finding there unconsciously
Some image of himself—I dedicate,
I dedicate, I consecrate with tears—
These Idylls.

"And indeed he seems to me
Scarce other than my own ideal knight,
Who revered his conscience as his king;
Whose glory was redressing human wrong;
Who spoke no slander, no, nor listened to it;
Who loved one only, and who claved to her—
Her over all whose realms to their last lie,
Commingled with the gloom of imminent war,
The shadow of his loss moved like eclipse,
Darkening the world. We have lost him; he is gone;
We know him now; all narrow jealousies
Are silent; and we see him as he moved,
How modest, kindly, all accomplished, wise,
With what sublime repression of himself,
And in what limits, and how tenderly;
Of swaying to this faction or to that;
Of making his high place the lawless perch
Of wing'd ambitions, nor a vantage-ground
Of pleasure; but thro' all this tract of years
Wearing the white flower of a blameless life.
Before a thousand peering littlenesses,
A that fierce light which beats upon a throne,
No blackens every blot: for where is he,
Who dares foreshadow for an only son
A lower life, a more unstain'd than his?
How should England dreaming of his sons
Be more for these than some inheritance
Of such a life, a heart, a mind as thine,
That noble Father of her Kings to be,
Anxious for her people and her poor—
Once in the rich dawn of an ampler day—
A sighted summoner of war and waste
Of fruitless strifes and rivalries of peace—
A nature gilded by the gracious gleam
Of letters, dear to Science, dear to Art,
To thy land and ours, a Prince indeed,
And all titles, and a household name,
After, through all times, Albert the Good.

Break not, O woman's heart, but still endure;
Ask not, for thou art Royal, but endure,
—wearing all the beauty of that star
Which shone so close beside thee, that ye made
—light together, but has past and left
—crown a lonely splendour.

"May all love,
Love, unseen but felt, o'ershadow thee;
—love of all thy sons encompass thee,
—love of all thy daughter's cherish thee,
—love of all thy people comfort thee,
—God's love set thee at his side again."

CUSTOMS IN CONNECTION WITH THE APPLE
—In Sussex, England, the blessing of the tree is still observed. On the eve of the day, young and old people assemble in the orchard and commence dancing round an apple tree, repeating a rude chant to words

of this purpose:—"God bless this tree to the use of the master. May it flourish and bring forth abundantly, even to fill a hat, to fill a basket, to fill a cart, to fill a waggon." The same ceremony is performed round every apple tree and pear tree in the orchard. In Devonshire, a certain apple tree, as a representative of the rest, is sprinkled with cider, or a bowl of it is dashed against the tree, or cakes steeped in cider are hung upon the branches, followed by an incantation, and a dance round the tree, and then home to feast.

BE CHEERFUL AT YOUR MEALS.—The benefit derived from food taken, depends very much upon the body while eating. If taken in moody, cross or dispirited condition of the mind, digestion is much less perfect and slower, than when taken with a cheerful disposition. The very rapid silent manner too common among Americans, should be avoided, and some topic of interest introduced at meals, that all may partake in, and if a hearty laugh is occasionally indulged in, it will be all the better. It is not uncommon, that a person dining in pleasant and social company, can eat and digest well that which when eaten alone, and the mind absorbed in some deep study or brooding over cares and disappointments, would lie long undigested in the stomach, causing disarrangement and pain, and if much indulged in, become the cause of permanent and irreparable injury to the system.

HOW TO TEACH A PARROT TO TALK.—In order to teach a parrot to imitate sounds, the best and the simplest mode is to take the bird into a perfectly quiet room, where it can hear and see no one but the instructor, and will not have its attention distracted by surrounding objects. Then, after taking every care to render the feathered pet familiar, speak the words, or produce the sounds, which the bird is required to imitate, and be careful to avoid varying them even by the fraction of a tone. You will soon see the pupil taking notice of the oft-repeated sound, and it will presently hold its head aside, as if to catch the tones more clearly. After a while it will try to imitate them; as soon as it makes an attempt, however imperfect, make much of the bird, and give it a small morsel of some special dainty.—*Every Boy's Magazine.*

INGREDIENTS OF WHEAT.—Estimating the yield of wheat at 25 bushels, 60 lbs. the bushel, the amount 1,500 lbs. carries off 30 lbs. of ash; the straw, estimated at 3,000 lbs., taking off 180 lbs. The 210 lbs. of ash carried off per acre by a crop of wheat as above is made up as follows: Potash 25.59 lbs., soda 3.02, lime 12.94, magnesia 10.52, oxide of iron 2.55, phosphoric acid 20.56, sulphuric acid 10.56, chlorine 1.97, silica 118.29. In wheat the proportion of grain is 29 per cent., of straw 71.

HOW TO CURE KICKING HORSES AND RUNAWAYS.—The experiments of Rarey, the Horse Tamer, and the promulgation of his theory of horse training and management, are bringing before the public much useful knowledge upon this interesting subject. Whatever may help to bring the horse, especially vicious horses, as they are called, more completely under the subjection of man without the necessity of resorting to cruel treatment, ought to be known by all who have the management of equine quadrupeds. We heard a day or two since, a description of the taming of a kicking horse and another who was an inveterate runaway, by methods so simple and Rareyish that we cannot forbear to publish them for the benefit of horseologists in general.

If you have a horse that has a habit, when in harness, of bringing his heels in contact with the dasher and damaging the vehicle by kicking, proceed as follows:

Place around his neck a band like that used for the riding martingale. Then take two light straps, buckle them to the bit on either side, pass them through the neck band and thence inside the girth and strap them securely to each fetlock of the hind feet, taking care to have them of the proper length. When a horse is rigged in this manner if he attempts to "kick up behind" each effort will jerk his head down in such a way as to astonish him, and perhaps throw him, over his head. He will make but a few attempts to kick when he finds his head thus tied to his heels, and two or three lessons will cure him altogether.

The method of reforming a runaway is equally simple and effectual. First of all, fasten some thick pads upon your horse's knees, then buckle a strap, about the size of a rein, upon each fetlock forward, and pass the straps through the hame rings or some part of harness near the shoulder on each side and lead the straps back to the driver's hand as he sits in the buggy. He has thus four reins in hand. Start the animal without fear; don't worry him with a strong pull upon the bit, but talk to him friendly.—When he attempts to run he must of course bend his forward legs. Now pull sharply one of the foot reins, and the effect will be to raise one of his forward feet to his shoulders. He is a three-legged horse now, and when he has gone on in that way a little distance drop the constrained foot and jerk up the other. He can't run faster on three legs than you can ride, and when you have tired him on both sides pretty thoroughly, or if he refuse to take to his trot kindly and to obey your voice and a moderate pull on the bit, you can raise his fore feet, drop him upon his knees, and let him make a few bounds in that position. The animal will soon find that he can't run away; that he is completely in your power, and by soothing words you will also be able to convince him that you are his friend.—He will soon obey your commands, and will be

afraid to extend himself for a run. Within a week or two some horses that were quite able animals in respect to everything but bad habits of kicking and running in harness were cured by methods described above. experiments are such as can be made by person at all accustomed to managing horses and we hope it may prove serviceable to our readers.—*Boston Herald.*

EDUCATED FEET—Who can tell to what the feet and toes could be put, if a necessity arose for a full development of their power? There is a way of educating the foot, as well as the hand; and it is astonishing what an educated foot can be made to do. We know that in the time of Alexander, the Indians were taught to draw their bows with their feet as well as with their hands, and Sir J. E. Neave tells us that this is done up to the present time by the Rock Veddahs, of Ceylon. Nearly all the savage tribes can turn their feet not only to good, but bad account; like the aborigines of Australia, who, while they are busily engaged in committing robberies, are diverting your attention with their feet, with which they pick up articles as an elephant would with his trunk. So also the Hindoo makes his toes work at the loom, weaves with them with almost as much delicacy as with his fingers. The Chinese carpenter will hold the bit of wood he is planing by foot, like a parrot, and will work a grindstone with his feet. The Banaka tribe, who are famous canoe-men on the West African coast, will impel their light canoes—weighing only eight to ten pounds—with great velocity, the waves, and, at the same time, will use their foot to bail out water; and when they rest their arms, one leg is thrown out on the side of the canoe, and it is propelled with feet almost as fast as with a paddle. There was also Monsieur Ducornet, who died only a few years ago, who, although he was born without hands, was brought up as an artist and annually exhibited at the Louvre pictures painted by his feet. Then there was Thomas Ross, the armless huntsman to Sir George Byng, whose feet were made to perform the duties of his hands. And there was William King, who with his toes wrote out his accounts, and dressed himself, saddled and bridled his horse, threw sledge hammers, and fought a battle, in which he came off victorious.—*Bert Bede's Glencreggan.*

PAY OF ARCHITECTS IN THE 17TH CENTURY.—Long before Brindley's time. Inigo Jones paid only eight shillings and fourpence as an architect and surveyor of the Whitehall Banqueting House, and forty-six pounds a year house-rent, clerks, and incidental expenses, whilst Nicholas Stowe, the master mason, allowed but four and twopenny a day.

Duchess of Marlborough was afterwards engaged in resisting the claims of one of her own surveyors, she told him indignantly that Sir Christopher Wren, while employed by St. Paul's was content to be dragged up the top of the building three times a-week, and that, at the great hazard of his life, for £200 a-year—the actual amount of his salary as architect of that magnificent cathedral. Sir Christopher, however, fared worse still, and for a long time does not seem to have risen above the 'mechanics' pay, even whilst engaged in erecting the celebrated canal for the Duke of Devonshire, which laid the foundation of so gigantic fortunes.—*Smiles' Engineers.*

DOCTORS' EMOLUMENTS.—Of the slow promotion in medical ranks, even in the case of the ablest and deserving, the earnings of Sir John Cooper afford a striking example. In the first year he netted five guineas; in the second, twenty-six pounds; in the third, sixty pounds; in the fourth, ninety-six pounds; in the fifth, a hundred pounds; in the sixth, one hundred pounds; in the seventh, four hundred pounds; in the eighth, six hundred and thirty pounds; and in the ninth, the year in which he secured his hospital appointment, eleven hundred pounds. The highest amount he ever received in any one year was £21,000; but for years his average income was over £15,000.

ISLANDS OF ICEBERGS.—We are off on the rollers of the bay of St. Louis, after a broad iceberg, covering say an acre of surface and grounded in forty fathoms of water. Upon one extremity a bulky tower of sixty feet in height, and in the other forty, and in the middle a huge ice-block of all shapes and sizes, the top of some spire. While the outside of this iceberg is white with tints of green, blue, and there with the most delicate and gilding, every crevice where there is a shadow lurking is a blue, the purity and softness of which cannot be described, nor easily imaged. To one who has any feeling for colour, it has a sentiment as sweet as anything in nature. A pure white surface like this fine ice, seen through deep shade, produces a blue and such a blue as one sees in the sky when it is full of warmth and light. It is quite beyond the rarest ultramarine of the painter. The lovely azure appears to fill and fill the hollows like so much visible light or smoke. One almost looks to see the crystal cells where it reposes, and they pass into colourless air.—*After Icebergs* Painter.

TRUNKS.—Trousers may have many advantages—they are dusty at the feet in summer, and dry in winter. They get easily out of the baggy at the knees, and much over the lower parts of the body, and thus, to a certain extent, demoralize the individual; while

the practice of wearing unwashable trousers next the skin for six months is a dirty habit. True, if drawers are worn, this inconvenience is avoided; but perhaps impede free motion, press upon the stomach, and drag inconveniently at the braces. The present practice of turned down collars must be a great comfort to those who formerly wore tight cravats and stiff collars; but the student and the cricketer alike throw off the collar and the necktie when much work is to be done; and it seems to me that, for health and elegance, the neck should be as free as possible, and that a narrow shirt-band, fastened with an ornamental button, might be a good substitute for the "turn-downs." Indeed, the turned collars of shirts, coats and waistcoats, form lines which do not harmonize with the square lines of the male figure, and they diminish the apparent width of the shoulders. Beards are natural to man, and it is a violation of nature to use the daily razor; but, at the same time, beards are too natural to harmonize with modern dress. If a committee were formed, consisting of men of taste—sportsmen, artists, soldiers, and physicians—assisted by the practical knowledge of manufacturers and tailors, a costume might be devised at once graceful, comfortable, and economical; and I do not see why, at the forthcoming Great Exhibition, the best manner of clothing the human body should not be thoughtfully considered.—*Dr. Wild, in Builder.*

STRANGE HABIT OF PARROTS.—When domesticated, the parrots, macaws, parakeets, and cockatoos show the same partiality for vegetable seeds, and are generally fed very well on hempseed, the skins or husks of which they detach with astonishing skill. Some that receive bones to gnaw acquire a very determined taste for animal substances, and especially for the tendons, ligaments and other less succulent parts. From this kind of feeding, some parrots contract the habit of plucking out their own feathers, that they may suck the stems; and this becomes urgent a want that instances have been known of their stripping their bodies absolutely naked, not leaving a vestige of down wherever the bill could reach. They spared, however, the quills of the wings and tail, the plucking out which would have caused too much pain. M. Damaré states that the body of one of these birds, belonging to M. Latreille, thus became as a pullet plucked for roasting. Yet the bird supported the vigour of two very severe winters without the slightest alteration of health or appetite. M. Veillot observes that this habit of depilation is produced in many parrots by an itching of the skin, and not in consequence of their being accustomed to eat animal substances.—*Cassel's Natural History.*

A SUPERSTITION ABOUT THE ASH TREE.—In the Highlands of Scotland, at the birth of a child, it is said that the nurse takes a branch of

the ash-tree, one end of which she puts into the fire, and, while it is burning, receive into a spoon the sap which oozes from the other end: this she gives to the child to be mingled with its first food. It is supposed to impart wonderful virtue. In King's County, Ireland, near Kenetry Church, is a famous ash, the trunk of which is now 21 feet 10 inches in circumference. When a funeral of one of the peasantry passes by this tree, the procession pauses, the body is laid down for a few minutes, while all offer a few words of prayer. Then each person casts a stone to increase the heap which has been accumulated over its roots. This is imagined to benefit both the dead and the living. There is an ancient saying, that "a serpent would rather creep into the fire than over a twig of an ash-tree." Cowley, enumerating various prodigies, says :

"On the wild ash's top, with bats and owls,
With, all night, ominous and baleful fowls,
Sate brooding, while the screeching of the doves
Profaned and violated all the groves."

It is surprising how many of such follies will creep into men's minds.—*The Druggist*.

AN AGRICULTURAL PASTIME.—The season has begun for holding jubilees of the Sparrow Clubs, and scarcely a week now will pass on which we shall not be called upon to record the celebration of one or more of these village festivals. We shall be requested to chronicle how Farmer Giles took the chair; Labourer Hodge, the vice; how mine host of the "Toad under the Harrow" supplied a supper in his usual splendid style, utterly regardless of cost; how old Job Lynxeye, tenant farmer, and young Abel Anvil, blacksmith, produced so many thousand heads of small birds, and triumphantly carried off certain sweepstakes provided for the victors; how the night was spent in mellifluous harmony; how the patriotic aviscides passed a most agreeable night, and how they did "not go home till morning." Now, we have serious doubts whether these bird slayers do not do a great deal more harm than good; and we really should be greatly obliged if some experienced person, capable of forming a correct opinion on the matter, would direct his attention to it, and favour us with the result of his inquiries. Our own decided impression is, that it is mischievous folly to destroy indiscriminately all small birds; but we should much like to be favoured with really sound practical information on the subject. Hither'o, our French neighbours have been the most inveterate of bird destroyers. The result has been so enormous an increase of those reptiles and insects which prey upon the crops of grain and other vegetable food, and so deficient a harvest, that we should not be surprised if the French Government were to resort to stringent measures to prevent this wholesale slaughter. Let us state two facts for the con-

sideration of our rural readers, and there we leave the matter for the present. The chaffer deposits from 70 to 100 eggs, which are transformed into white grubs, which live the roots of our most valuable vegetables. The vil lays from 70 to 90 eggs, which, laid many grains of corn, become larvae, and creep up the corn. Now swallows, hedge-sparrows, and other small birds live principally upon caterpillars, and other insects and animals which prey on and destroy the products of agriculture. Ten swallows were recently discovered in their stomachs were found the remains of 5,482 insects, which must have been the result of a few hours' feeding. We trust our farmers will be induced to think of the matter, and will not join in unreasoning attacks against sparrows and water-wagtails, on the occasion of the supper at the "Toad under the Harrow" and the conviviality of the guests on the dead bodies of larks, wrens, finches, whistles, and others of the feathered songsters notes, for purity, richness, melody, and so on. We will back against the boisterous guests of the bacchanals who ever assembled at the "Toad under the Harrow" aforesaid. *Surrey Times*.

THE LONDON SHOEBLACKS AND THEIR REVENUE.—The shoeblacks who stud the broad London, in their cheerful jersey's, yellow and blue, have shown the possibility of getting out well. Nine years have elapsed since the branch of labour was introduced: and it is said, have earned about £12,000 in united earnings for the last financial year ended to £4,548, representing the black polishing of no less than 1,119,330 pairs of shoes.

A SHYING HORSE.—Nine out of ten horsemen start in their seat whenever a horse shies, and then the horse is either by the spur driven up to the object. The horses look at any singular object with nervousness, for they expect a thrashing at the same moment. The rider should not punish himself, nor notice it in his horse; and punish him.

A VALUABLE DISCOVERY.—Professor Turner says, that through a succession of experiments upon himself, his children, his horses, and other cases, he has discovered that Cod-liver-oil is a certain and speedy remedy for scrofulous taints, and all kinds of local diseases, such as rheumatism, pains in the side, shoulder, and joints, cramp, sore throat, bruises, cuts, and lacerations of all sorts on animals. He mentions several cases in his family, where the application of this oil has effected so beneficial, he has thought it worth while to make the discovery known to the public.

Editorial Notices, &c.

INSTRUCTIONS TO AGRICULTURIST.—We have bank the officers of Agricultural Societies, other correspondents, who act as agents for the *Agriculturist*, for their continued activity in obtaining subscriptions. The following statement, which was intended to have been published long ago, shows the prizes awarded the 20 highest paid subscription lists to 1st, 1861. Several correspondents who did not obtain prizes, would have been entitled to them if they had been sufficiently prompt in sending orders and remittances:

Correspondents.	No. of Copies	Am't of Premiums.
George Scarlett, Toronto, 277 copies,		\$20 00
A. Cooley, Ancaster.....	238	" 19 00
Wetenhall, Hamilton..	166	" 18 00
Findatt, Bowmanville...	154	" 17 00
A. Canfield, Ernestown..	124	" 16 00
W. Campbell, Almonte...	121	" 15 00
C. Kerr, Beamsville....	93	" 14 00
George Robson, Whitby....	78	" 13 00
Brough, Gananoque....	77	" 12 00
Lynch, Brampton.....	76	" 11 00
Mr Beaton, Pickering....	66	" 10 00
Harrington, Arnprior..	65	" 9 00
W. Wright, Guelph.....	64	" 8 00
A. Campbell, E. Zorra....	44	" 7 00
W. Keefer, Strathroy....	43	" 6 00
W. Young, Lanark.....	39	" 5 00
W. Wilson, Kingston..	37	" 4 00
W. Thomas, Barrie.....	36	" 3 00
Patton, Paris.....	35	" 2 00
Freed, Hamilton.....	34	" 1 00

Seeds! Seeds!! Seeds!!!

MR GEORGE WAITE
High Holborn, London, England.

THE LARGEST STOCK of VEGETABLE, AGRICULTURAL, and FLOWER SEEDS, IN THE WORLD, and can supply on better terms than any other who does, as he makes most extensive arrangements with none but experienced growers to secure his supply of seeds, which are raised from stock selected under his own personal superintendence, and as they are all selected and picked in his own extensive warehouses by an auxiliary strength of several hundred men and women, kept for that purpose, he is enabled to recommend, with the greatest confidence, every description of Seed offered by him for sale, and he therefore invites Seed buyers to apply for his Catalogue.

—Cash, or satisfactory reference in London.
June 1st, 1862.

et.

THOROUGH BRED STOCK FOR SALE.

THE SUBSCRIBER has for Sale Durham and Galloway Cattle, male and female. Leicester, Cotswold, Lincolnshire, Down and Cheviot Sheep; Cumberland and Yorkshire improved Pigs. All imported stock.

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FOR SALE.

A LOT of thorough bred improved Berkshire Pigs of various ages.

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Notice of Partnership.

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

JAMES FLEMING,

GEORGE W. BUCKLAND.

NOTICE.

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

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

Toronto, January 1st, 1861.

IMPROVED BERKSHIRE PIGS

FOR SALE by Mr. Denison, Dover Court, Toronto.

Toronto, April, 1862.

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AYRSHIRE BULL

FOR SALE, by Mr. Denison, Dover Court, Toronto.

April, 1862.

VETERINARY SURGEON.

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

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

Veterinary Establishment, Corner of Bay and Temperance Sts.

Toronto, January 22nd, 1862.

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Is Published on the first of every Month,

AT \$1 per annum for single copies, or to clubs of ten or more at 75 cents. per copy; to members of Mechanics' Institutes, and of Literary, Scientific, and Agricultural Societies, through their Secretary or other officer, 50 cents per annum per copy.

Subscriptions payable in advance.

Printed for the Board of Arts and Manufactures for Upper Canada, by W. C. CHEWETT & Co., King Street East, Toronto.

The Agriculturist,

OR JOURNAL AND TRANSACTIONS OF THE BOARD
OF AGRICULTURE OF UPPER CANADA,

IS published in Toronto on the 1st and 16th of each month.

Subscription—Half a dollar per annum for single copies; Eleven copies for Five Dollars Twenty-two copies for Ten Dollars, &c.

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

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FOR SALE.

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

JAMES COOPER

Olochmhor, Galt P. O., Oct. 19, 1861.

Printed at the "Guardian" Steam Press, Street East, Toronto.