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Canadian Agriculturist,

OR

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OF UPPER CANADA.

VOL. XII.

TORONTO, DECEMBER 1, 1860.

No. 23.

Testing Agricultural Implements.

A very suggestive paper was read at a recent meeting of the Central Farmers' Club, (London, England,) by Mr. Fisher Hobbs, on "The public and private Trials of Agricultural Implements; can they be made more efficient?"—Several of the leading Implement makers, as well as farmers, were present. The opinion seemed to be generally agreed to that notwithstanding the greater pains and more systematic accuracy that of late have been shown in testing implements, much yet remains to be accomplished, that may be regarded as practicable. Roughly competent judges, composed of Implement makers and practical farmers; more and fewer implements of different classes were tried, appeared to the meeting to be the chief desiderata. Each implement or machine should be tried in its proper season; that is, Reapers and Mowers when the grain and grass are sufficiently matured; ploughs, drills, scarifiers, &c., when the soil is in a suitable state for their practice; working in the ordinary routine of farm operations. Definite rules should be laid down for performing the work, and the motive power fully measured by the most accurate instruments procurable. In several minor matters relative to the carrying out of these objects considerable diversity of opinion prevailed. In Canada and we find, as in Canada, it is difficult to find competent people willing to incur the time and expense necessary in conducting trials in one

place; especially if they recur annually. The Royal English Society divides Implements and Machines into three classes, each of which is publicly tested every three years. Several of the leading members from some misunderstanding with the Society, refused to exhibit at the last Show at Canterbury. Some of them are opposed to the practice of giving premiums, and the old West of England Society has acted on this principle for the last two or three years, without, it would appear, diminishing the number of exhibitors. We doubt, however, the application of such a principle to Canada, and in England even, generally, and for a length of time.

The *Agricultural Gazette* argues that the number of improved implements is now so large and widely diffused, that the necessity for great central trials, however efficiently conducted, is every year diminishing; and that as good, or even better comparative estimates may be formed of their capabilities and special adaptations, by observing their working in the ordinary operations of the farm; since but few parishes in the more advanced districts that do not possess a number of the different kinds of improved implements and machines. This is a subject no doubt beset with difficulties, which it will be impossible, perhaps, ever wholly to remove. But what with as carefully conducted trials as circumstances will admit, and observing the working of different implements in ordinary opera-

tion in the field, not only may much reliable information be elicited, but a good practical man will not often be at a loss in coming to a pretty satisfactory conclusion.

Wheat Culture.

We gave some time ago some notices of the experiments of the Rev. Mr. Smith, of Lois-Weedon, Northamptonshire, England, in cultivating wheat on an adaptation of the Tullian theory. The following exposition of the plan, which we take from the Irish Country Gentleman, will be found interesting :

AN ADAPTATION OF THE LOIS-WEEDON ON HUSBANDRY.

BY A. HARDY, SEEDGROWER.

Some time ago I advised farmers, allottees, and cottage gardeners, to grow wheat instead of the precarious potato, and, for true economy, to do so on the Lois-Weedon principle. To render my advice the more practicable, I would now show how this principle may be carried out with the ordinary appliances on other farms. But I must show briefly first, Mr. Smith's own system in operation and in its results.

At the outset of his farming, fifteen years ago, Mr. Smith had a four-acre field, which was in grass; this he pared and took off the land, then ploughed it the full depth of the 5-inch staple for a crop of oats, followed by vetches. After this came the first triple-rowed wheat crop, with its wide intervals, which he dug one spade deep, bringing only a very few inches of yellow clay subsoil to the surface. The second year, these well-stirred intervals bore the wheat crop, and the stubble was dug in. And thus year after year, alternately, the same acre of land has had a fallow and a wheat crop too. In the third and fourth years the spade went down a few inches deeper, and so, gradually and regularly, for four years more, till a depth of sixteen or eighteen inches was reached, when he stayed his hand, and after that was satisfied for the four following years with a single spit. Last year, however, he returned to the double spit, and a fresh inch of clay. The digging, as may be seen, is now two spits deep; and after the pan was a little stirred, the staple, with the stubble, was returned upon it; the clods were shattered, and the second spit, with its sprinkling of yellow clay, was gently laid uppermost, in such a form that the frost might be let right through the whole. These high-ridged intervals will be thus, during winter, higher than the tender wheat, protecting it, and checking the drifted snow.

The winter fallow over, he levels the ridges

with the horse-hoc, cleans the rows well, and the intervals, keeping the surface of the latter constantly open, till the wheat is about to flower. Then will come a process peculiar to the plan and which meets a serious difficulty in our uncertain climate. We, rotation farmers, have sometimes a heavy crop of wheat, from high farming, &c.; but the wind and the rain, as in the present and many other seasons, we are utterly helpless against, whilst Mr. Smith enjoys general immunity from their evil effects. The broad fallow intervals enable him to take a turn with the plough, to *earth up his wheat with the mould-board*. Immediately after this, the same day it may be, follows another of singular efficacy in swelling the grain. He *subsoils*, with "Sigma's Subsoiler," as deeply as he can, with two horses, in the centre of each furrow just made by the plough, and this closes the work till harvest.

The crop being carried, he makes preparation at once for sowing. He first lightly horse-hoc and cleanses the furrows; then ploughs close the stubble, casting the earth back again in the centre. There are thus two furrows in each interval, and *these* he also subsoils, which leave the whole of the land intended for the next crop in a perfect hollow and pulverized condition. But though wheat loves a mellow bed, it loathes a soft one. He therefore consolidates the soil with a double clod-crusher, which takes two beds at once, the horse walking on the stubble in the centre. This being done he waits till near the middle of September for the rains, if it may be, to perfect the culture.

I would be glad to have your close attention while I now describe the sowing, because upon the accuracy of this process depends not only the goodness and fulness of the crop, but the great pleasure of, perhaps, a daily inspection of the true lines, and even vegetation of this beautiful plant for ten months in the year.

All machinery for sowing, besides the single hand dibble, he has long discarded. He rejects even "Sigma's" admirable planter—which he hears is so efficient—believing all to be comparatively unsafe and inefficient; for, with the hand dibble, the right hand dibbling and the left dipping the grain, *he can see the seed deposited* and he knows that it is there in its right place and at the right depth. He is satisfied too, of the rapidity with which the practised workman does his work. It is true, his work is made out for him more accurately and quickly than could do it himself. Another hand stretches the line nearly, but not quite in the centre, from end of the interval to the other. With a light hand implement, invented by Sigma, which has three small mould-boards, set at the required distance apart, he now, guiding the middle mould-board by the line, draws with all mathematical truth three minute furrows, which the dibbler deposits the seed. And the whole piece is completed, if the surface is dry enough, he covers over the seed, and c

up the channels with the crusher. In spring the crusher is again employed in compressing the wheat plant, after which the hand and the hand-hoe are busy between the rows, so long as it is safe, and then comes the last scene of all, the sickle and the harvest home.

Sum up, then, the annual average outlay for the wheat crops, from first to last, always keeping in mind the digging process I have described, how it begins with one shallow spit the first two years, increasing by degrees to two good spits of pulverized soil, two or three inches of solid clay being added, and for years not even that.

The very natural question here arises, How is it that, by so simple a process, *without manure*, the same acre of land is enabled year after year to yield such a produce of wheat? There are some few favored spots in England so rich that they produce, without any dressing, a constant succession of heavy wheat crops, by the ordinary way of farming. "If my land were like that," says Mr. Smith, "it would even then be surprising that forty bushels of wheat should ever be reaped from the moiety of the acre." But his clay piece is really nothing but ordinary heavy wheat land.

Just one thing more and I have done. Mr. Smith uses no manure for his wheat crop, as he needs the use of it too enriching. "Add manure," he says, "to my deep and thorough tillage, and well-fed intervals, and the crop would be too luxuriant, and blight on the spot, or come down and mildew." He fears even the smallest remnant of by-gone dressings, and depends wholly on mineral food from below, and a frost accumulations of atmospheric ammonia deposited from time to time in the soil, and its continuous, never-ending flow from the same *lural* sources.

Using, then, no manure for *wheat*, he has a noble supply for his other crops. Manure well mixed and well-made, from well-fed animals, including night-soil, liquid and solid. I will only mention his winter bean crop. I give here the process of its cultivation in detail, because, like the wheat crop, it is grown on the same acre of land, year after year. and the plan, like that of the wheat, is now reduced to a system. I give for another reason: it meets a very serious advantage in the ordinary growth of the bean crop—viz., the apparent impossibility of keeping clean. The weeds are scattered broadcast at sowing, and the foul straw, carried to the yard, perpetuates in manure the ineradicable evil. Let us look at his crop grown in single rows, five feet apart! (I should prefer double rows.) The soil is now up (November,) and in the centre the interval there is the single row of last year's stubble. He will shortly broadcast and rife, and stir the whole interval, strike a deep furrow in the line of the stubble, subsoil it, and dig into the channel a heavy dressing of guano, and leave it for the winter. In the spring, in preparation for the next planting, he sows and mixes the whole together, continuing

the cleaning process until he is shut out by the present crop, which, in June and July, will cover the land, as it were shaking hands. *There is hardly a weed to be seen, and not one in flower throughout the year.* The produce in 1858 was 42½ bushels, though dwindled by the heat. The year before it was 44. The year before that it was 50½ bushels. And most probably this year, 1860, being in double rows, (another row being introduced in spring to repair the broken plant, the unusual cold and wet winter having ruined it,) as I estimated when I saw them growing, will exceed 60 bushels—from, I repeat it, single or double rows of beans five feet apart.

I will now introduce Mr. Smith's balance-sheet, showing the actual average outlay, yield, and profit, at the *lowest* rate of produce and value for 14 years:—

Digging and cleaning the moiety of	£	s.	d.
each acre	1	14	0
Horse-hoeing ditto three times, and			
plough, 4s.	0	10	0
Hoeing and weeding	0	5	0
Rolling with crusher at seed time and			
at spring, 1s.	0	3	0
Two pecks of seed, 2s. 6d.; dib-			
bling, 5s.	0	7	6
Bird keeping	0	4	0
Earthing up wheat	0	3	0
Reaping, &c., to thrashing and mar-			
keting	0	13	0
Rent, £2; rates and taxes, 4s. 3d. . .	2	4	3
	£6	3	9
	£	s.	d.
34 bushels of wheat, at 5s.	8	10	0
1½ tons of straw, at 40s.	3	0	0
	£11	10	0
Deduct outlay	6	3	9
Net profit per acre	£5	6	3

The *principle* is *perfect* and *clean* cultivation, without manure, and without producing sterility in the soil, and cropping only half the land every year; against *imperfect* husbandry, with abundance of costly stimulants, and cropping the whole of the land only every four years with corn and WEEDS. From the moiety of each acre, in the year 1858, was upwards of forty bushels of fine red wheat, with an estimate of two tons of straw. The produce of 1859 and 1860, are not yet published, and it is probable they never will, though both these crops are likely to exceed any of the former, as Mr. Smith scorns the idea of publishing anything which savors of puffing of any of his goings, even when they are well substantiated. He calls it the *moiety* of each acre, for so it actually is; for a full acre of wheat in 10-inch rows contains, we will say, 120 10-inch divisions. Take away, then, every alternate three rows, and you have the Lois-Weedon with only sixty rows, being the exact moiety of the acre of wheat. In the year 1857 the pro-

duce was thirty-six bushels; the year before, 37; and of the prior years, beginning with 1847, the average yield may be safely given at 34, as in his balance-sheet. Some years it has been over 40, and it is likely to be so this year. It is a low average of the amount of straw also produced from the same moiety of each acre, and not returned to it, to put it at one and a-half ton, and not a high one when he values the ton at 40s.; for, whether he buys or sells it, such is its value to him.

Here, then, is the very point, and the only point, that first led him to publish these results, and how they were brought about. How, with wheat at 40s., or even less, it is possible to grow it with profit, a nett profit of at least £1 the acre. It has been declared that it is impossible to tell the precise value of an acre of wheat to the grower; that it is so mixed up with the tillage and dressings of the other crops in the rotation as to defy any exact calculation in the matter. But here recollect, in this system, the wheat crop is taken out of the rotation altogether. It has nothing to do with it; it begins and ends with itself; so that, giving the outlay, the profit is clear. Suppose then, a farmer to have a 400-acre arable farm, and that he sets apart 100 acres of heavy wheat land for wheat on this plan; suppose him, moreover to do as he has done, and to succeed,—for Mr. Smith rejects the unpleasing flattery that he can accomplish what others cannot—he has, with low prices, from one-fourth of his land, a nett profit of £400, with the remaining 300 acres to be dealt with in the ordinary way, in whatever rotation he pleases, including wheat, as a separate farm. Suppose, in like manner, a farm of less dimensions.—say twenty acres,—which perhaps will better serve for an illustration, on which no one can live by the present plans and prices, to farm it in the ordinary way, though it is possible he might by this; to have five acres set apart for Lois-Weedon. I will vouch for him who carries out the plan strictly that his profits will far exceed others practiced in the old jog-trot, four-course system, always alike, and bound down by restrictive leases, as if it could never be reformed.

And now, lastly, seeing it cannot be done on a broad scale thus for want of capital and manual labor to perform the digging, I will briefly give my proposition how it might be carried out with the common plough, saying nothing of what will yet be accomplished by steam power and other implements. It is simply to introduce five rows of wheat instead of Mr. Smith's three, on the middle of our common seven feet four inches stetches, at twelve inches apart, instead of ten, and the rest to be followed as Mr. Smith has directed. First, as a beginning, to clean and subsoil our old furrows and adjacent parts for the first crop, which can be put in with the common drill occasionally, or better by the hand-dibble and self-dropper, by adjusting its parts, and stopping the outside spouts; follow-

ing the counterpart or moiety of the land in winter and summer, &c., according to our worthy friend, the Rev. S. Smith's directions on his duration, with the exception, however, of always a furrow open in the centre, where no corn could grow were it there. Thus our common plough lands would be converted at once into Lois Weedon, or similarly so, even at less expense there being thus no digging to take into debt account. In four years, when the land will be clean as a whistle, the course could be changed if need be, and other land so cropped and cleared, till that is also free from weeds, &c.

Waldon, Essex, Sept., 1860.

An ordinary crop of wheat, ten inches apart in the rows.

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A Lois-Weedon crop of wheat, in triple rotation ten inches apart in the rows.

Exportation of American and Canadian Cheese and Butter.

It appears from a statement in a recent number of the *Mark Lane Express*, that the export of Butter and Cheese from this Continent to England, has astonishingly increased during the past year. The exports of *Butter* from the United States to Great Britain and Ireland, from September 1st, 1858, to September 1st, 1860, amounted to only 307 tons; while from September 1st, 1859, to September 1st, 1860, it reached the enormous quantity of 2,141 tons! During the former year the export of *Ch* was 2,599 tons; but during the latter, 7 tons, or nearly three-fold!

BUTTER EXPORTS BY SEA FROM MONTREAL

To Oct., 1860.	To Oct., 1859.	To Oct., 1858.
22,828 firkins.	7,871 firkins.	4,534 fir.

The exports from Montreal do not represent the aggregate Canadian exports, but a small portion. They represent the increase of the year, however, as fully as the aggregate can be when fully ascertained.

The writer observes:—"Such an increase in the dairy produce of one year may be said to be without example. Nor is there any doubt as to the ratio of increase being maintained in future years. The Canadian farmer may turn unlimited herds of cows into the bush to feed in summer; and the Western farmer has even more scope and less trouble on the prairies. Cheese and butter can be produced in America without limit, and at a less cost to the farmer than in any other country; and now that the production is taken in hand in a spirited way, the supply will be enormously increased. Nearly 7,000 tons more dairy produce have been received this year than last; and there is every reason to believe that the quantity to be received next year will at least be doubled."

After describing the imperfect manner of packing butter into firkins during the summer months, by which it is always unequal in quality and often proves rancid, he remarks—

"It is satisfactory to observe, that this untoward state of things is being changed, and that American dairy produce is in a fair way of getting rid of the bad name that has been so long attached to it. Within the past few years a class of men possessed of ample means, and to whom the making of cheese and butter is familiar, have found their way to Canada and the United States. These men, availing themselves of the facilities that now exist for sending what they have to market, have declined the services of the drapers and grocers and others, and sent their cheese and butter to New York and Boston, and elsewhere, direct by railway. Need the result be told? Well prepared Canadian and Western butter now command the highest market price; and dairy farming has received in the course of the present season an extension which is scarcely credible. Milk has ceased to be bestowed upon the hogs, or to be wasted in the household; and milch cows are everywhere great request. In short, dairy farming, which hitherto has been neglected on the American continent, is at length found to be highly profitable, and is being prosecuted in a way that will felt before long in England. No better proof of this can be afforded than by a comparison of the statements of exports from the United States and Canada."

We commend these observations to the best attention of our farmers. Most of our lime-stone soils, are admirably adapted to dairy purposes, and with proper care and judgment there is no reason why Canada as well as the adjoining States should not every year increase her exports both of Butter and Cheese of improving quality.

Death of the Duke of Richmond.

It is with deep regret that we record the decease of this estimable nobleman, than whom agriculture never had a warmer friend. Some fifteen years ago it was our good fortune to meet his Grace occasionally at public or private meetings for the encouragement and improvement of agriculture, and we can cheerfully testify to the geniality of his spirit, and his correct and extensive practical knowledge of this his favorite pursuit. In the Duke were combined all the essential elements of the statesman and the soldier; the generous landlord and the genuine British farmer. Many years ago we heard him publicly declare that he had resolved upon beating Jonas Webb as a Southdown breeder, but it took, we believe, some dozen years before he was able to accomplish his object; indicating a characteristic and exemplary perseverance. His Grace was in his 70th year. The following obituary notice is taken from the *Mark Lane Express*:—

"Agriculture had no truer friend than the Duke of Richmond. His heart was really in the cause, and it was as no mere stepping-stone to something else that he showed at a rural gathering or shook a farmer by the hand. *He was with them*, and his justly-earned popularity told how well they appreciated him. Through the varied fortunes that have followed agriculture, there was no so sure a man to depend upon, nor one who so readily responded to any call made upon his services—and there were many. Until within the last few years, when declining health alone compelled him gradually to withdraw from all excitement, no man was so often before the world as the advocate of agriculture. In the House of Lords, at meetings of all kinds held in association with the interest, amongst his own tenantry at Goodwood and in the North, he was equally staunch, active, and considerate. The Duke of Richmond was one of the warmest promoters of the Royal Agricultural Society, of which he had twice been President, and of which he died a Trustee. He has for many years been the President of the Smithfield Club, where his absence of late had been a source of general regret. When in gratitude to his exertions the farmers of the Kingdom offered him some testimonial of their thanks and respect, he would hear of this in no other form but in the establishment of an Institution for the benefit of their own order. He coveted no high places for himself, but would rise to speak from his seat in the midst of them, and triumph over his neighbour Rigden, or renew the challenge for the next meeting, as the fortune of the day might have

thirty thousand tourists visited Niagara Falls on the past season.

told for or against him. The princely hospitalities of Goodwood, and the taste and genuine feeling with which they were administered, have long been the theme not merely of Englishmen, but of the world. His devotion to his county as a soldier in his earlier life, and as a soldier to his latest breath, are as familiar to most of us. He may have almost been said to have died with harness on his back, for he only left the charge of his regiment when he could no longer get about. He dearly loved his profession, and Mars divided with Ceres his first hopes and aspirations. His Grace was, perhaps, only less keen as a sportsman, having been, previous to the wound he received at Othello, a good cricketer, a capital shot, and a forward man with hounds. Then, again, he made the race meetings in his own park, the best in the kingdom; but we fancy his own sympathies at Goodwood were more with his old shepherd and the Southdowns, than with Mr. Kent and the training stable. Agriculture, in fact, was something of a passion with him, while his career will stand as a memorial of how well he served her. Never was there an honor more justly earned than when the Smithfield Club placed Lord Spencer on the one side of their Gold Medal and the Duke of Richmond on the other.

Veterinary College in Ireland.

We observe that vigorous efforts are now making to establish a Veterinary College in Ireland, where no institution of the kind has heretofore existed, as in England and Scotland. The projectors appear to find the undertaking a more difficult one than was anticipated, but are persevering in their efforts. The *Irish Country Gentleman* of Dublin says:

"The various attempts which, for the last 100 years, have been made to establish a Veterinary College in Ireland, have been confined solely to suggestions; and these were generally of the most conflicting character. An effort like the present one was never made. If, in details, the Committee have erred, it should be borne in mind that error is an almost invariable result of attempting anything new; and *de facto*, the work in which the Committee are engaged is in its practical bearings, we venture still to believe, quite new in this city. But we have yet to discover that they are in error, inasmuch as they are only wedded to the important and indisputable right of endeavouring to achieve that object which *others* have only declared to be a *desideratum*.

It is said that a Veterinary College cannot be founded by money alone. The truth of this is so obvious that we should not expect it to call forth any discussion; and indeed we have many precedents to prove that the legacies of benevo-

lent persons, and the willing exertions of enlightened men, have failed to realise good, because of their want of proper guidance, and application by practical men, or by means of well devised schemes. A remarkable illustration of this is afforded in the case of the late Mr. Brown, of Dublin, who bequeathed £20,000 for the purpose of establishing an Institution for the Treatment of the Diseases of the Domesticated Animals, "within one mile of Westminster, Lambeth, or Dublin;" yet this princely bequest has not yet been applied. We have no doubt that if time be allowed, and a proper system of testing the qualifications of the Veterinary professors be adopted, competent graduates will not be wanting. We firmly believe that it is the earnest desire of the promoters of the Irish Veterinary College to go the right way to work. They invite the co-operation of all whose primary idea is identical with their own. This is not the time to set up claims of priority, or to introduce angry polemics. They hold forth the right hand of fellowship to all who will work to accomplish what on all sides is allowed to be a desired object; and they ask for advice as well as co-operation; and if all unite there can be no doubt as to the supply of one, at least, of Ireland's greatest wants—a National Veterinary College.

In conclusion, we are happy to be able to state that the project has been warmly approved of by Professor Gamgee, the distinguished Principal of the New Edinburgh Veterinary College, who has kindly offered to assist in any way in his power. Professor Dick, of the Edinburgh College, has also expressed his pleasure at perceiving that Ireland is at last astir on the subject of Veterinary education; a cause for which it has so long and successfully labored. We have lately visited both the colleges referred to, and have derived much pleasure as well as profit from our inspection of them. We have carefully studied the working of these institutions, and hope to apply the knowledge thus obtained assisting in the organisation of the Veterinary College of Ireland.

Thanksgiving Day.

The people of this Province very properly observed the day set apart by authority for special thanksgiving to Almighty God for having blessed the labors of the husbandman with abundant harvest. In a purely commercial point of view this is a matter of the greatest importance, and should call forth our thankfulness and the watchful care of a beneficent Providence. Unfortunately the severe commercial panic that spread its desolating influence, more or less over the whole civilized world, was followed in this Province by two successive bad harvests.

involving such a diminution of the fruits of the earth, as to produce the most serious stagnation and losses among all classes of the community. The previously existing monetary inflation and reckless speculation rendered the transition more intense and ruinous in the result. If, however, the commercial panic, which was so general in its operation, had been succeeded by harvests of average productiveness, Canada would have gone through the ordeal, not without serious inconvenience, but certainly with much less disastrous consequences. And it is to be hoped that as prosperity is again dawning upon us, the painful experience of the past will prove an effectual warning for the future against being again involved in chimerical projects and rash speculations. This country, we believe, holds out sufficient inducements to honest industry and the judicious employment of capital. All healthy and during progress must be comparatively slow and progressive; and this is in general as true of an individual as it is unquestionably of a nation. Haste is but seldom real progress; and we have high authority for believing, confirmed by every-day experience, that those who hasten to be rich will almost surely fall into a snare. But there is another view of the subject. How clearly does the history of this Province for the past few years indicate that agriculture, the *artificial* produce of the soil, is the almost exclusive source of our wealth and prosperity. And this must continue to be the case in nearly the same degree, for an indefinite time to come. Arts and manufactures naturally fall into the natural movement as they are required or can be made productive, but their development to be as altho' must be natural, that is slow and progressive. All the great analogies of nature are in accordance with this law of progress. The trunks of the forest outlive generations of mankind before reaching full maturity, and will go through a similar course in their decline; whereas the pumpkin gourd springs up and perishes in a night. Agriculture then, being the imperishable basis of our wealth and prosperity, it was meet and right for a christian people to return thanks in a special and public manner to Him from whom temporal as well as spiritual blessings flow, and to share the bountiful harvest with which we, in common with a neighboring nation, have been blessed. There is perhaps no pursuit in life,

which so forcibly reminds a man of his dependence upon God to bring his labors to a successful issue, as that of the farmer. He is endowed with faculties of mind and body which enable him to prepare the soil, select and sow the seed and do all other things in accordance with the natural laws of Providence, as far as he understands them; and then leaves the result, in the spirit of faith and hope, to Him, who "giveth the increase." Of all men, the farmer must be held the least excusable if he neglects to cultivate a devout and thankful spirit, seeing that his pursuit brings him into daily contact with the wonderful operations of creative and sustaining Power, in the orderly course of the seasons. We are glad to find that the old venerated festivities of "Harvest Home," in our father-land, are beginning to be accompanied by solemn thanksgiving in the parish churches, and that the becoming festivities and recreations of such occasions are in some measure balanced by a trusting faith and an elevated piety. May we in Canada so use the blessings which a gracious Providence showers down upon us, that the mere accumulation of worldly wealth may not appear to be the exclusive or even the chief object of desire; but that we may employ them in ministering to the necessities of the poor; in diffusing as widely as possible, the advantages of sound, secular knowledge among the mass of the people, and in aiding the ministrations of christianity among those who are filling up the remote and spiritually destitute portions of our country.

History of Gypsum as a Manure.

The grand value of gypsum to the farmer, and even the chief interest of it to the merchant, are its uses as a manure. Virgil, in commending the use of ashes to the Roman farmers, speaks of the value of a very impure variety of gypsum; and the early inhabitants of Britain, and the farmers of Lombardy, made use of it in some such way as the Romans. But none of these parties were acquainted with its real nature; and even the chemists, till comparatively late period, were unable to distinguish it from limestone or other calcareous substances. About the middle of the 18th century, a substance which was long afterwards shown to be an impure gypsum, which had been used as a fertilizer in the neighbourhood of Hanover, drew the attention of Mayer, a talented Protestant pastor in the principality of Hohenlohe, and

was found by him to possess such manurial powers as promised to be of great and general service to agriculture. He recommended and published the substance by both example and writing; and he speedily made a deep and extensive impression in its favour. Many agriculturists subjected it to experiment; and Schubart in Germany, Tschiffeli in Switzerland, and Franklin in America, wrote in recommendation of it, pushed it into notoriety, and both won for it a host of friends and provoked against it a host of foes.

The use of gypsum extended rapidly in various parts of Europe, particularly in the district around Paris; and was so zealously propagated in North America as to occasion exportations from the quarries of Montmartre to the western side of the Atlantic; and gypsum rapidly obtained the fame, in both the old world and the new, of being one of the most powerful auxiliaries of vegetation. But the opposers of it were many and formidable; and among the most strenuous of these were the proprietors of the salt-pans, who maintained that schlot or the refuse of their pans was the only true fertilizer of its class, and could never be superseded or competed with by gypsum; and yet this very schlot turned out, in a maturer state of mineral analysis, to be itself an artificial gypsum, of precisely similar constitution and action to the natural gypsum of the quarries. The advocates of gypsum, however, were, in a sense, its worst enemies; for they so exaggerated its powers, and spoke of it as a universal manure, and recommended it for all sorts of manurial purposes, as necessarily to produce great disappointment, and in consequence to provoke disgust, anger, and opposition. Experience eventually, though slowly and hesitatingly, assigned very distinct and somewhat confined limits to its fertilizing power; pronounced it to require, in every case, the co-existence with it in the soil, either naturally or artificially, of organic manures; declared it to be efficacious chiefly on soils rich in humus and poor in salts, and generally to but a small number of ordinarily cultivated plants, such as lucern, sainfoin, clover, rye-grass, turnips, and the grasses of artificial meadows; and condemned it as almost or altogether worthless to cereal crops, to the greater number of hoed crops, and to most kinds of natural grass lands. Opinions were very long divided, too, respecting the seasons and methods of applying it; particularly as to whether it should be pulverized and applied in its natural state, or first burned and then pulverized, and as to whether it should be sprinkled on the surface as a top-dressing or thoroughly intermixed with the soil. In many and extensive districts, also, whose soil has since been supposed to contain a sufficient natural intermixture of gypsum for all the purposes of vegetation, the application of the new manure, no matter how or when made, was found to produce no beneficial effect whatever upon any kind of ground or crop.

"The opinions of practical men, with regard to the advantages and propriety of applying gypsum," says Boussingault, "although they agree in certain determinate circumstances, were still far from being unanimous. A particular inquiry into the subject was therefore held worthy of its attention by the French Government, and a comprehensive report on all the information collected was made by M. Bose to the Royal Central Agricultural Society of France. This report shows in a striking manner the advantages that may be derived from the lights of practical men; in a single line or sentence, we frequently find a summary of 20 or 30 years' experience. The following series of questions and answers I believe to embrace most of the points of any interest connected with the employment of gypsum. 1st. Does plaster act favourably on artificial meadows? Of 43 opinions given, 40 are in the affirmative, and three in the negative. 2nd. Does it act favourably on artificial meadows, the soil of which is very damp? Ten opinions given; unanimously, No. 3rd. Will it supply the place of organic manure? or will a barren soil be converted into a fertile one by the use of it? Seven opinions given; unanimously, No. 4th. Does gypsum sensibly increase the crops of the cereals? Of 32 opinions, 30 were negative, and two affirmative." Some subsequent experiments, judiciously planned and carefully executed by Mr. Smith in England, and M. de Ville in France, as well as other experiments of a less prominent character by other distinguished agriculturists, have drawn a very distinct limit round the manurial utility of gypsum, and fully ascertained the conditions in which its fertilizing power is developed.

The Methods of using Gypsum as a Manure.—Gypsum, when used as a manure, ought to be ground and applied in its natural state; for it has been proved by abundant experiments to acquire no increase of power from burning or from any other known preparatory process than simple pulverization. It is usually sown or sprinkled upon the surface of meadows but, though it acts well enough when applied in that way, it acts still better when incorporated with the soil. It is generally believed to act peculiarly well when sprinkled under such conditions as to make it lie like a film upon the wet leaves of the growing plants; but it probably derives all the advantages of that mode of deposition from the equality with which it is distributed and detained athwart the surface. Yet whenever used as a top-dressing, it ought certainly be applied in calm, moist weather and will be all the more successful if applied the particular time in spring when the young plants of lucern or sainfoin, or clover, have already made some degree of progress. "I have noticed, in applying gypsum to grasses," says Mr. Johnson, in his prize-essay in the Royal Agricultural Society's Journal, "that the weather at the time of spreading it has a ve-

material influence upon the result of the experiment. Its effects are never soon apparent when it is sown in dry weather; but if the season is damp so that the white powdered gypsum adheres to the leaves and stalks of the young grass, the good effect is then immediate. This observation was made, many years since, by Arthur Young, by Mr. Smith, and by the American farmers; it is a well-known fact with the sainfoin growers of the Berkshire and Hampshire chalk formations, the clover cultivators of the gravels and loams of Surrey and Kent, and on the lucern grounds of the alluvial soils of Essex and Middlesex. The farmers of the United States, when dressing their turnips with gypsum, always found it answer best when spread in rainy weather."

The Crops which Gypsum Fertilizes.—The highly fertilizing power of gypsum upon sainfoin, and some of the circumstances which modify it, were well ascertained by Mr. Smith's experiments in three years of the last decade of last century. The soil on which the experiments were made was a light vegetable earth, three feet deep at the upper end of the field, and gradually lessening to three inches at the lower end, and everywhere incumbent on a subsoil of chalk; and the field was divided into equal breadths for gypsed and ungypped growths of sainfoin, with every precaution that the circumstances should as nearly as possible be equal. In one experiment, the crop on the deeper ungypped soil amounted to 3,357 lbs. of the dry herb, and 419 lbs. of seed; while that of the contiguous breadth, which had received about 15 bushels of gypsum in the spring of 1794, amounted to 5,462 lbs. of the dry herb, and 582 lbs. of seed. In another experiment, the crop on a shallower and ungypped part amounted to 2,766 lbs. of the dry herb, and 245 lbs. of seed; while that upon the contiguous part, which had received about 15 bushels of gypsum in the spring of 1792, amounted to 4,381 lbs. of the dry herb, and 379 lbs. of seed. In a third experiment, the crop on the shallowest part, ungypped, amounted to 2,068 lbs. of the dry herb, and 66 lbs. of seed; while that upon the contiguous part, which received about 15 bushels of gypsum in the spring of 1794, amounted to 4,879 lbs. of the dry herb, and 211 lbs. of seed; and that upon the same part, gypsed with 15 bushels also in the spring of 1792, amounted to 4,310 lbs. of the dry herb, and 205 lbs. of seed. Thus the crop from the ungypped breadth being taken as 100, that upon the gypsed breadth is 231—it is more than doubled. But on comparing the weight of the herbaceous portion with that of the seed, widely different relations are apparent; for the proportion of herb to seed in the ungypped portion of the first experiment was as 100 to 2.5—in the gypsed portion of that experiment, as 100 to 10.7; in the ungypped portion of the second experiment, as 100 to 8.9—in the gypsed portion of that experiment, as 100 to 8.7;

in the ungypped portion of the third experiment, as 100 to 3.2—in the once gypsed portion of that experiment, as 100 to 4.3; and in the twice gypsed portion of that experiment, as 100 to 4.8. Both without and with gypsum, therefore, the proportion of the seed to the herb falls rapidly off from the deep soil to the shallow. Some principle essential to fructification was hence supposed by Mr. Smith to be very deficient in shallow soil; and this principle, in all probability, is some portion of the compound product of decomposed and decomposing organic matter.

The fertilizing power of gypsum upon white clover was ascertained by Mr. Smith to be still greater than upon sainfoin. He applied the gypsum in connection with his crop in the proportion of six bushels per acre, at an advanced period in May, when the clover looked pale, and seemed to want sap; and only a fortnight afterwards, though no rain fell in the interval, the clover was vigorous, and began rapidly to form so thick a covering as to protect the ground from an intense sunshine, which scorched every adjacent ungypped spot. In one experiment, the ungypped crop amounted to 839 lbs. of the herb, and 56 lbs. of seed, while the gypsed crop amounted to 2,226 lbs. of the herb, and 316 lbs. of seed; and in another, the ungypped crop amounted to 500 lbs. of the herb, and 61 lbs. of seed; while the gypsed crop amounted to 2,270 lbs. of the herb, and 174 lbs. of the seed. The mean of these experiments shows the increase from gypsing to have been as 225 to 100. M. Villele's experiments do not show so largely; yet, in consequence of having been made on moist, stony, clayey soil, of about 16 inches in depth, and incumbent on a stiff clay subsoil, they are quite as decisive and considerably more interesting. In one of his experiments, gypsum was applied in the proportion of 4 cwt. per acre, and the ungypped dry crop amounted to 20 cwt. 1 qr. 23 lbs., while the gypsed dry crop amounted to 40 cwt. 3 qrs. 19 lbs.; and in another, gypsum was applied in the proportion of 5½ cwt. per acre, and the ungypped dry crop amounted to 19 cwt. 2 qrs. 16 lbs., while the gypsed dry crop amounted to 32 cwt. 2 qrs. 27 lbs. So far as past experience discloses, gypsum may, perhaps, be pronounced less variably and more certainly beneficial to clover than to any other agricultural plant; and it has often the curious property of materially benefitting clover in such a manner as to render the effect observable only when the crop is converted into hay. "I have tried gypsum on a great variety of soils," says Dr. Shier, "in general with but little success. In a few instances, however, it proved highly beneficial to clover. In these cases I observed that the advantage could not be detected by the eye, or even by the balance, when the produce was weighed green; but it was very apparent on weighing the dried hay."

The fertilizing power of gypsum upon legu-

trivious plants, as a class of vegetables, refers generally to their herbage, and has seldom any connection with their seeds. Any inference which might be drawn from the suitability of gypsum for sainfoin and clover to the suitability of it for peas and beans would be a total and ruinous mistake. Any leguminous plants whose seeds are used for food, and which are grown upon soil either naturally or artificially capable of yielding to them even a very small proportion of sulphate of lime, usually assimilate so much of this salt into their seeds that these cannot easily be softened by boiling. The stubborn hardness of some peas and beans is frequently ascribed by cultivators to the temperature of the seasons of growth, or the rains which fall at the time of harvest, but is really caused by the assimilation of gypsum, and may be readily corrected by throwing a little subcarbonate of soda into the water in which they are boiled. But when leguminous plants are grown entirely for the sake of their herbage, and especially when they are intended to form a perennial cropping of green fodder for cattle, the enriching of the soil with gypsum gives them great energy of vegetation, and causes them to push forth very succulent leaves, and to renew for a long time the stems which are cut for fodder.

Some statements say that gypsum is usually very beneficial to turnips; and others assert that it is more uniformly successful for potatoes than for any other field crop. We have no means of decidedly affirming or denying these statements, or of recording the particular conditions under which they may be correct. But an unsuccessful experiment upon the gypsing of mangel wurzel by Boussingault may probably be regarded as indicative of the general inutility of gypsum to root crops. "The plants," says he, "were transplanted and watered, and the gypsum was applied at the time of earthing up. A good deal of rain fell; and shortly after having been laid on, the gypsum become incorporated with the ground. The crop was gathered on the 5th of October, three months after the gypsing, and from two equal surfaces, each of 242 square yards in extent, weighed as follows:—from the gypsed ground, 13 cwt. 2 qrs. 6 lbs.; from the ungypped, 12 cwt. 2 qrs. 3 lbs. The gypsum would, therefore, appear to have had no beneficial effect; for the difference in favour of the gypsed piece is so trifling that it cannot be reasonably ascribed to the mineral manure; in fact, the quantity obtained from the gypsed surface does not exceed that which we constantly take from fields in the ordinary course of cultivation, and which have received no gypsum."

The fertilizing power of gypsum upon the cereal crops, as we formerly saw, was denied in 30 out of 32 answers, to the Royal Agricultural Society of France, and affirmed in only 2. This ought to be decisive; yet it is hindered from making a due impression by a statement

that, in the experiments of Smith, gypsed land as compared to ungypped land produced grain in the proportion of 192 to 100. A doubt thus started, which requires to be laid at rest and it may be dealt with by an appeal to the recent experiments of Boussingault. He tried gypsum on wheat after ploughed-in clover, after mangel wurzel, and after potatoes, all in 1841 and the results in the entire produce were—after the ploughed-in clover, 319 lbs. on the gypsed piece, 323 on one ungypped piece, and 3rd lbs. on another ungypped piece; after the mangel wurzel, 195 lbs. on the gypsed piece, 17 lbs. on one ungypped piece, and 158 lbs. on another ungypped piece; and after the potatoes, 25 lbs. on the gypsed piece, 245 lbs. on one ungypped piece, and 264 lbs. on another ungypped piece, thus giving on average, on the three experiments, of 250 lbs. on the gypsed piece, 248 lbs. on one ungypped piece, and 250 on another ungypped piece. But as the year 1842 was unfavourable to wheat other experiments were made in the eminent favourable year 1843, on equal areas of 2 square yards each, with a dose of 70 lbs. gypsum on each of the gypsed areas, and the results were as follows:—Rye with gypsum, 5 lbs. in sheaves, and 137 lbs. of grain; rye without gypsum, 472 lbs. in sheaves, and 127 lbs. grain. Oats with gypsum, 329 lbs. in sheaves, and 112 lbs. of grain; oats without gypsum, 368 lbs. in sheaves, and 113 lbs. of grain. Wheat with gypsum, 462 lbs. in sheaves, and 147 lbs. of grain; wheat without gypsum one place, 453 lbs. in sheaves, and 143 lbs. grain; wheat without gypsum in another place, 510 lbs. in sheaves, and 156 lbs. of grain.

The fertilizing power of gypsum upon the artificial grasses, except in cases where the soil naturally contains a sufficient portion of sulphate of lime, is well ascertained, and of great practical value. This is particularly true with respect to the usual rotational mixture of clover and ray-grass. "If the farmer find," says Mr. Johnson, in his prize essay, "that fields will only grow clover successfully one, eight or twelve years, and that his neighbours tell him his land is 'tired' of clover, or 'clover sick'—if he notices that even the application of farm-yard compost hardly adds to the luxuriance of his grasses—he may then safely conclude that his crops have gradually exhausted his land of sulphate of lime, and he may, with every confidence of success, apply a dressing of gypsum, at the rate of 2 cwt. per acre, taking care to choose a wet morning for the application and this may be done at any season of the year but it is better in April or the first days of May." He then declares that he can attribute these facts from experience and observation and narrates two remarkable verifications of this in the case respectively of an old paddock of clover and sainfoin lands. The paddock was old, and had gradually become less and less productive; and after being vainly plied with

many kinds of mineral and compost manures, a portion of it suddenly became luxuriant under a dose of 40 bushels per acre of peat ashes, containing 12 per cent. of sulphate of lime, and otherwise consisting of sand, chalk, red oxide of iron, and a small quantity of common salt; and when suspicion arose that this revived portion owed its revival solely to the sulphate of lime, another portion was dosed with finely pulverized gypsum, at the rate of 2 cwt. per acre, and experienced fully as great a revival, not only sending up its former grasses with renovated vigour, but producing white clover and other grasses, whose seeds had long been sleeping in the soil. The soil of the paddock contained 6½ per cent. of organic and soluble matters, and 19 per cent. of carbonates of lime and magnesia, and was about ten inches deep, and rested on thin stratum of gravel, immediately incumbent on chalk. The experimenter in the case of the clover and sainfoin lands, Mr. Barnard, of Little Boreham, in Hampshire, says, "I have sown gypsum six or seven years, and never on clover or sainfoin without satisfactory proof of its efficacy, having usually grown half a ton or more of hay per acre by its use;" and he adds that, on the 1st of May, 1838, he gyped a piece of a field of two-year-old sainfoin at the rate of ½ cwt. per acre; that, at harvest time, he reaped from it a produce of hay quite one ton per acre extra; that in October he reaped from the gyped portion another produce of 1½ ton per acre, while there was scarcely any on the ungyped portion; and that, in the following year, without making any new application of gypsum, he got two mowings from the gyped portion, and could find nothing to cut on the ungyped portion.

An incidental verification of the fertilizing power of gypsum upon the artificial herbage plants, similar to that afforded by the instance of the peat ashes, occurs in the common and successful use of coal ashes as a top-dressing for clover, lucern, and sainfoin. Such coal ashes are found on the analysis to contain a considerable proportion, say about one-tenth of their whole weight, of sulphate of lime, are generally found by farmers to be the most efficacious top-dressing for these plants which they apply; and as they otherwise comprise but very small proportion of fertilizing substances they may be inferred to owe all or very nearly their efficacy to their gypsum. A fact of considerable interest in reference to gyped grass lands, too, is that horses and cattle always prefer the grass of a gyped portion of a field to that of an ungyped portion. But let not any farmer be induced by these considerations to throw away money and labour in the gypsing of ordinary natural pastures. "It is certain," says Boussingault, "that gypsum has no effect on natural meadows. Positive experience has satisfied me of the absolute inutility of the practice here; so that upon my natural meadows at Bechelbronn I now never employ a particle of it.—*Rural Cyclopaedia.*

FOR AN AGRICULTURAL ANNIVERSARY.

By Mrs. Sarah S. Socwell.

Praise ye the Lord! Let joyful songs
Rise gladly from this band;
Praise him for all the blessings given
By His unsparing hand.
'Tis he that gives the gentle rain,
The sunlight bright and clear;
His mercies are for ever new,
His goodness crowns the year.

Another year, since here we met,
On time's swift wings hath fled,
And still, upon our happy homes
Rich blessings have been shed.
Spring brought the fresh and verdant grass,
The swelling buds and flowers,
The tender shoot of springing grain,
The soft, refreshing showers.

Then came fair summer, bright and gay,
With plenty in her train,
Clothing the farmer's fertile fields
In robes of waving grain;
A crown of blossoms o'er the earth
Her fairy fingers shed,
A rich and ever-varied feast
Of luscious fruits she spread.

Now Autumn comes, with gorgeous robe
Of brilliant, changeful dye,
Seeming as if it caught its hue
From the bright sunset sky.
With rustling sheaves of golden corn
His ear is thickly bound,
With purple clusters of the vine
His brow is richly crowned.

And thus thro' all the changing year
The ever-circling train
Bring joy, and peace, and plenteousness,
With each successive reign.
Then praise the Lord! Let joyful songs
Ring on the Autumn air;
Praise him for plenty which hath crowned
Our plains and valleys fair.

A Paradise for Farmers.

The correspondent of the *Times*, who reports the progress of the Prince of Wales in his North American tour, writes as follows respecting the advantages offered to British emigrants by the rich and fertile soil of Upper Canada:—"The country between Hamilton and Detroit, like all the land of Upper Canada, is rich and well cultivated, even where the black gnarled stumps of burnt pines stick up like tombstones of the forest, looming dark and mournfully upon the upstart growth of Indian corn beneath. Sometimes it is meadow land, with the ragged zigzag fences of lopped trees strewn loosely between the fields—sometimes a long track of corn is

passed, with the massive sheaves stacked together like straw tents, and the ground covered with bright orange pumpkins and squashes, which the inexhaustible fertility of the land has nurtured between the ridges of the maize. Then come acres and acres of orchards, with trees heavy and over-borne with their rich burden, drooping like willows to the ground, and their red and yellow fruit sparkling softly in the evening sun. All the barn-doors of the clean, white farm houses stand wide open, showing heaps of corn piled within; and across the clearings oxen come slowly along with mounds of other sheaves in rough wooden carts, dragging a plenty for which the farmer has no room in the timber outbuildings which ordinarily accommodate the harvest. On every side are such signs of boundless abundance; there is such a calm in these wild, clean, fruitful homesteads, there are such signs of progress and of energy, even in the forests hacked aside to make room for cultivation, that one can but gaze with lingering astonishment upon the scene of rising prosperity, and think of that vast class at home whom Bumble denominates as 'able bodied paupers,' going supperless to bed for want of work. Why, here are millions of acres of such fertile land as English farmers never think of getting without draining, manures and top dressings, and all the scientific agricultural slang which mark the presence of poor land. Here are millions of acres still clad in all the savage grandeur of the wilderness, and seeming to call—in their rich-matted growth of timber and luxuriant underwood—for some one to clear an overburdened soil, and let the natural fertility of the earth have scope to show its proper might and usefulness. Where the lumberers fell timber in the Upper Ottawa they scatter handfuls of Indian corn among the ragged stumps, and lo! in some six weeks' time, a harvest for a few in number, though enough in quantity to keep an English parish. Yet men break stones in England for 5d a day, and cost the country 10d more while doing it, and farmers in Upper Canada cry out for labour and get it for a few short months, till their servants have saved enough to better themselves and buy land, when at once the law of Canada steps in with restrictions which drive them in hundreds and thousands yearly to the far west of America. It is not to be supposed that the active folly which drove the States into manly insurrection and independence will ever be repeated by the home Government; but one sees each hour such slimy traces of red tape barnacles over Canada, such signs of its being left to the miseries of short-sighted legislation, such checks upon its growth, as no young colony, however vigorous, withstands for long. There is a mighty future for Upper Canada, if emigration to its fertile soil is only encouraged and developed by the Government at home; if they will only hold out such real inducements as American agents hold out falsely, and who manage to persuade people, even when half settled in British dominions, to make another and

a final move for prairie land. Land for land, the prairie is better than even the picturesque valleys of Upper Canada; but there is not at all that difference between the two which would lead a farmer to prefer 100 acres out West to 150, or even 120, round Hamilton or London. Enable emigrants to buy three acres in Canada for what they would only get two in Michigan, Illinois, or Wisconsin; let a man buy 10 acres or 1000 if he pleases, or as means permit, and there would be no want of settlers in Canada. The value of uncleared land in Upper Canada, varies from two dollars to four dollars an acre; yet sometimes, during the prevalence of speculative epidemic, £600 sterling per acre has been offered and refused, and as much as £120 per foot of frontage tendered in vain for by-streets in small towns."

Fattening Pigs.

There are many individuals who, if asked which is the most important of our domestic animals, would unhesitatingly answer—the pig, and probably, in some respects, the opinion would not be so far astray, for the pig is essentially the animal of all classes, being found alike under the shelter of the humblest cabin and in the spacious farmeries of the wealthy. Royalty itself delights in contributing to add to the number of exhibitors at our great shows of this particular class of animals; whilst the peasant—and especially the peasant of the Emerald Isle—designates it familiarly as "the pig, the craytur," or places it in the more dignified position of "the gintleman that pays the rint."

With such a claim upon our notice, therefore, we need not feel surprised to find that the improvement in this class of animals has occupied a considerable share of attention, and that the various efforts which have been made with this view have been crowned with success. The gaunt, ill-favored, slow-feeding animals which were familiar to us in our earlier days have now entirely disappeared, unless in some very remote districts, or in some locality into which general improvement has scarcely penetrated. We have even observed that in some places where improvement in other respects is as yet almost unknown, still the breed of pigs existing in those places present characteristics which at once show that, however backward the particular locality may be in so far as regards other matters, yet that the pigs of the district have been derived from other places which are more advanced, and thus it may, in such cases, be regarded as the pioneer of improvement.

The sow should not be put to breed until she is at least twelve months old. During the period of gestation—which extends over sixteen weeks—she should not be allowed to get too fat, but on farrowing plenty of nourishing food must be given. Oatmeal gruel, mixed with a little bran, given in a moderately warm state, will first be given, gradually increasing the strength of the food by adding barley-meal, boiled barley

pea-meal, boiled or steamed potatoes, &c.; but the food must at all times be milk-warm when given to her. Milk may also be added to the mess, and the young pigs will also soon begin to learn to use the food, which, with the milk afforded by their dam, will carry them on rapidly—a material point, if it is intended to dispose of them quickly.

Very little litter must be allowed to the sow during the time of parturition, as well as for some time afterwards, as the young pigs are apt to be smothered when a large quantity of straw is put into the sty. The sow must also be carefully watched during parturition, as many sows have a habit of devouring their young, especially those which are farrowed dead, or which die soon after.

Unless under certain circumstances, the sow should not farrow during winter, as the young pigs will not thrive during cold weather. The only exception is, when the pigs are to be sold to the butcher at Christmas as sucking pigs, and in such cases the sow and her young must be kept in a warm place. Sucking pigs are justly considered a great delicacy, and in many parts of the country, but especially in London and other large towns in England, high prices are realized for them when properly fattened for the table, and when the pigs are not more than a month, or at most six weeks old. When the litter is to be sold for this purpose, the pigs, besides being frequently supplied with the food already mentioned, must be confined as much as possible, so as to keep them from running about; and it is recommended that they be occasionally washed, with the view of promoting the fattening process.

The next stage in which pigs are much relished by consumers, is that of porkers; that is when well fed, and when from 48 to 56 lbs in weight. Previous to attaining this state they are weaned when from six weeks to eight weeks old. Some wean them at once, but it is the better plan to do gradually, particularly if they are intended to be sold as porkers. When not sold to the butcher as sucking pigs, the young males of the litter must be gelded when a fortnight old, and if it is not intended to keep the females for breeding purposes, but to be fattened, it will be as well to have them spayed at the same time. Porkers should be kept as closely confined as is consistent with their health, their food varied frequently, and given often, but not in such large quantities as to cause any to be left over. Skim or buttermilk, mixed with barley-meal, oat-meal, or pea-meal, makes exquisite pork; Indian corn and bean-meal will also be found very excellent food for this purpose. The meal must be made into a moderately thin stirabout or porridge, slightly seasoned with salt, and then mixed with the milk previous to being given to the pigs. Raw or unprepared food should never at any time be given to pigs which are being fattened, as it is in a great measure thrown away.

With store pigs the case is different, and they may not only get raw vegetable food, but must also have the run of a large yard or paddock, in order to afford them that exercise which is neces-

sary for growing animals. Vetches, cabbages, and, in fact, any succulent food is much relished by, and is well adapted for store pigs; at the same time, it is well to give them one meal a day of bean-meal, made into stirabout, or mixed with water and allowed to stand over night before being used, in order to correct any tendency to looseness which may be brought on by the free use of green food. Boiled potatoes, boiled or steamed Swedes or mangels, mixed with a little pea or bean-meal, is excellent food for store pigs, and brewers' grains may also be used with advantage, when such are obtainable. Store pigs may also have the run of a grass field or the corn stubbles, but before they are admitted into such, a ring must be inserted into their nose, in order to prevent them from turning up the soil. When confined merely to stubbles which are soon to be ploughed up, this operation is, of course, the less necessary, but as in general, store pigs have also access to other places, they ought to be ringed.

Fattening pigs consist of stores put up when about twenty months old, or brood sows of different ages. The fattening pigs must be kept closely shut up, for perfect tranquility is indispensable. Combined with this must be regularity in feeding, the feeding times being thrice a day, viz., morning, noon and night. The appetite must be stimulated by varying the food, and as much must be given at a time as the pig will consume without being surfeited. Pigs which are purchased from jobbers, and have probably been very moderately fed for some time previously, if put up to fatten and allowed at first as much food as they will eat, will gorge themselves, and sicken; but if gradually accustomed to nutritious food, they will go on improving from the first. Cooked potatoes, combined with a mixture of different kinds of grain ground into meal—viz., one-third barley meal, one-third pea-meal or bran, and one-third Indian meal—will be found the best description of food to give to fattening pigs. As the animal approaches maturity, let the potatoes and pea-meal be gradually lessened, and the quantity given of ground barley and Indian meal be proportionately increased, by which means the meat will be of the best quality.* Linseed meal, or cake is never given to fattening pigs as this description of food imparts a rank flavor to the meat; at the same time it may be given to young pigs which are intended to be kept as stores before being put up to fatten. Chandlers' greaves and grease are frequently given to pigs, but although they will fatten quickly on such food, it will only be given sparingly by those who wish to have a fine quality of meat for their own use. A considerable amount of greasy matter will, of course, always form a proportion of the kitchen waste set aside for the use of their pigs, but in such cases it is well mixed with other food.

In general, although it is not always the case, food is usually given to pigs in a slightly sour

* "The fine flavor of the Westmoreland and Cumberland hams is principally due to the fact of their being fed on oatmeal and buttermilk, and not to the mode of curing.—*Roxlandson's Prize Essay on Pigs. Journal of the Royal Agricultural Society of England, Feb. 11.*

state, and it has been found that pigs are more easily fattened on such food than when it is given in a fresh and sweet state. In some parts of England a food tank forms a regular part of each set of farm-yard buildings; and where only one or two pigs are kept by the cottager, a large cask is used for the same purpose. The tank or cask is filled with boiled turnips, sharps, brewers' grains, kitchen waste, and, in fact everything which can be converted into food, and the stuff so collected is allowed to remain until perfectly sour, and often until it is actually putrid, before it is given to the animals, when some fresh barley-meal, bran, or bean-meal is mixed with each painful as it is taken from the cistern.

The following extracts from *Caird's English Agriculture* contain the outlines of different systems of management in connection with pig-feeding:—

"On Mr. Huxtable's farm, Dorsetshire, we are informed that the pigs are kept as a manure factory, from which a given expenditure in meal will be returned, with the cost of attendance, in the increased value of the animals, and all the manure they leave to clear gain. . . . The pig food is, therefore, all purchased exclusively on their account, partly in the market, and partly from the inferior corn of the farm. Cheap Egyptian beans, lentils, and barley are ground into meal, the proportion of beans being increased in cold weather, and barley in warm weather, as being then respectively most suitable to the constitution of the animal. The requisite quantity is steeped over night in cold water to render it more palatable and soluble, but undergoes no other preparation."

"In Hampshire, pig-feeding we found in favor with some farmers, as being at present the best paying stock. One farmer we visited has from 40 to 50 breeding sows, which he keeps in very cheaply fitted up yards and sheds, feeding them on swedes alone till they are nearly about to litter. They are then placed in separate pigsties, and supplied with more generous food. The progeny are kept till worth about 20s. each, when they are sold. A young sow pig can be bought for the same price as a ewe; the ewe produces only one lamb in the year, while the sow brings on an average two litters of seven or eight in each, or fourteen to sixteen pigs annually. Hence our informant considers the sow by much the more profitable investment for his money.

"In Berkshire, Sir John Conroy endeavors to fatten every year as many hogs as he has acres, and has, therefore, always on the farm between 300 and 400, eighty of which are in the fattening pens to be finished. The only food they receive is barley-meal and water, a 'kitchen' being conveniently placed for each pig-yard, with a trough sunk in the ground, into which the requisite quantity of meal is put among water in the evening for the morning's feed, and the trough again filled in the morning for the evening meal. Each pig is calculated to consume about ten bushels of barley in the course of feeding. The eighty fattening pigs are kept in three yards, with a shed, all well littered with straw.

"In Essex the feeding of pigs is carried on to a great extent by Mr. Huntley. He breeds none, but buys pigs at about 18s, and feeds them five weeks, when they are ready for the London market. They are fed on meal of different kinds, and sometimes on boiled Indian corn. The money realized, including prime cost, from the pig stock for one year, has reached more than £2,000, and seldom falls below £1,200 or £1,500.

"At Brancroft, on Earl Talbot's estate, in Staffordshire, a large stock of pigs is kept on the farm. They are cheaply fed on roots in winter, and on clover in summer, receiving little or no meal until they are finally put up to fatten. They are driven out every morning, and folded on the clover like sheep, returning in the afternoon to the farm-yard, where they remain during the night, well littered with straw. They eat the clover very bare; and in the following wheat crop the benefits of the pig-fold are readily recognized by its superior luxuriance.

The accommodation for pigs in the farm-yard is a matter of considerable importance. In many cases we find the piggeries stuck in any out-of-the-way corner, and much unnecessary trouble is, therefore, often imposed upon the attendants. Instead of this, the piggeries should be arranged on a distinct plan, and always convenient to the steaming-house, so that the food may be conveyed to them expeditiously, and with little trouble or loss of time. Generally, the sty consists of a roofed apartment and a small enclosed yard, open above, each division being from four to six feet square, according as the sties are intended for the accommodation of fattening pigs or breeding sows; and a range of similar apartments, with their respective yards, constitute the piggery. We prefer the plan of having the pens placed in a separate house, having a walk up the centre, with the pens on each side of the walk. The animals can be more easily inspected at all times when kept in this manner, are cooler in summer, and warmer in winter than in the old-fashioned sties, and the pens can be kept cleaner and with less trouble. Proper ventilation must be provided by means of ventilators in the roof. The floor will be composed of bricks or tiles, having a slight inclination from the wall to the centre walk, where a line of covered drain with gratings will convey the liquid to the tank. The divisions between the compartments will be made of stout planks set in grooved posts, and the height of the divisions may be about four feet. The feeding troughs, whether in the ordinary sties or in the case just mentioned, must be placed along the front of the yard or pen, and firmly secured, access from the outside being given by means of a flap-board, suspended above the trough, and the trough itself should be divided into at least two divisions, so as to keep the animals quiet whilst feeding.

Sparred floors have been introduced into piggeries as well as into cattle and sheep sheds, and many who have adopted these sparred floors speak highly of the advantages which they experience in the use of such. The planks used are 1½ inch thick, 3 inches wide, and the space

between each plank varies from 1 to 1½ inch, according to the size of pigs which are to be kept in the respective pens. The manure drops into a receiver under neath, and is removed at pleasure, no straw being used as litter.

With regard to sparr'd floors, Mr. Mechi says—"I have had 300 to 400 pigs at one time for several years and never had disease, but if you litter them on straw, and have many, they will get heaves, or lung disease. Mine have been on open sparr'd floors, so that air always circulated under and around them, and the atmosphere did not become putrescent, which is almost sure to take place on straw. Ten years of experience with the sparr'd floors have more and more convinced me of their superiority for stock."

By the use of the sparr'd floors, perfect cleanliness is insured, and where the ordinary houses exist care must be taken to keep the sties clean. It is a gross mistake to suppose that the pig is naturally a dirty animal; if left to himself, he is quite the reverse although, like his congeners, of the order *Pachy-dermata*—the elephant, hippopotamus, &c.,—he delights during hot weather in lying in a wet hole; but he also delights in a clean sty, and in cleanly-kept troughs. During hot weather some cold water should be occasionally thrown over the sty-fed pigs, as this cools them, and renders them more comfortable. The inside of the houses must be regularly white-washed with lime three or four times a year; and, in short, it never must be forgotten that cleanliness and general careful attention are as necessary in the proper management of pigs as that of any other class of our domestic animals.—*Pringle's Meat Manufacture.*

Correspondence.

Cheviot Sheep.

EDITOR CANADIAN AGRICULTURIST,—In your list of prizes of the late Hamilton Show, I perceive the judges of Cheviot Sheep appended some remarks to their report, which are rather derogatory to that breed, and which I cannot but think are premature and uncalled for. Have the gentlemen who made these remarks had any experience with Cheviots? or have they made any experiments betwixt them and any other breeds in Canada? If so, I for one would be glad to know what the results were. For my part, although one of the exhibitors in this class, I have not had much experience with them; but believing, from what I had heard and read, that they are a hardy and useful breed, and better adapted than some others to stand our long and rigorous winters, I purchased a few of them about a year ago. As far as my experience goes, I can truly say, they have exceeded my expectations, and I think deserve to be patronized.

If any one expects to see Cheviots-rivalling

in size and perfection with the Leicesters and Cotswolds, I should not be surprised if they were disappointed. They are entirely a different class of sheep: just as much so (with the exception of black faces) as the various Down sheep are different from those breeds; or, to illustrate by another comparison, as distinct as Durhams are from Devons. Whilst no one will attempt to deny the distinctive characteristics and relative qualifications of each, they are no doubt naturally adapted to their different localities, and have evidently their own peculiar spheres of usefulness. Just so it is with sheep; the massive forms and expansive chests of the one are suitable for grazing on nature's rich plains, or to luxuriate in cultivated fields well stocked with the various artificial grasses; whilst the agile bodies and active limbs of the other are better adapted to obtain their supplies from the scanty herbage and natural grasses which too many of the farms in Canada afford.

But, Sir, it seems the more singular that the committee should have made such remarks when these very sheep are first beginning to attract public attention in this country, and at the same time, were not only favorably noticed by your own reporter, but have also received strong recommendations by different writers for agricultural journals in the United States.

By your permission, I will make a few brief comments on their remarks, taking them in order. They say, "Notwithstanding the patronage of the Association, we find but few entries in this class." Not so very few either (41), when one of the greatest breeders of Cheviots was absent from the field altogether, and this too for a new breed but partially known, and but lately introduced; I find several classes of animals of longer standing with still fewer entries and less competition. "Generally surpassed in both size of carcass and quality of wool by the various grades exhibited among them." For size of carcass I admit they were surpassed; and this is one of the qualities for which it is said the Cheviots are peculiarly adapted, viz: to cross with almost any other breed and produce thereby a valuable sheep both for wool and mutton; but the query is, where are we to get our grades from, unless we have the pure breeds to cross with? But for quality of wool, if fineness is the test of quality, I contend they were not surpassed. True, the grades having apparently been produced from some heavy long-wooled sheep, had more wool than the true Cheviot, but the quality of their fleece, in my opinion was not near as good. Here I would remark that the Cheviots have a much finer texture of wool, and a shorter, closer fleece than any of the other long-wooled breeds, so called. This is one reason, no doubt, why they can so well stand the storms of their own native hills, and also why their advocates suppose they will the better be able to brave the cold winds and falling snows of a Canadian winter. Their wool is also better adapted for

home manufacture, which was one principal reason with me in getting them.

Before I conclude I would like to quote from some standard Agricultural works in Britain, the remarks of some eminent and experienced sheep traders and graziers, after the reading of which I think the Association will not "doubt the propriety of giving so many prizes to a class of sheep" apparently so eminently "adapted to the wants of this country." The *Complete Farmer*, in describing the Cheviots, says: "This breed of sheep is known by the want of horns; by the face and legs being mostly white, and the eyes lively and prominent; the body long; little depth in the breast; narrow there and on the chime; clean, fine small-boned legs and thin pelts. Mr. Culley considers this as a valuable breed of mountain sheep, where the herbage is chiefly of the natural grass kind, which is the case in the situations where these are found the most prevalent, and from which they have obtained their name. It is a breed which has undergone much improvement within these few years in respect to its form, and other qualities, and has been lately introduced into the most northern districts; and from its hardiness, its affording a portion of fine wool, and being quick in fattening, it is likely to answer well in such situations."

It is observed by the writer of the Argyshire Report, that "the Cheviot sheep are in every respect superior to the black-faced kind. They are hardy, fine-wooled, and well-shaped. They are long-bodied and long-limbed, which fits them for climbing steep mountains, and for travelling, either for seeking their food or going to a distant market. Their fleece too is *finer, closer, and warmer*. They have every property that should be sought in a mountain sheep, and accordingly they have been found to thrive in every part of the Highlands in which they have been tried, and are said to be less subject to diseases than other breeds. Indeed no part of the country is more inclement than that from which they came, where the hills are sometimes covered with snow for three or four months in a year, and where many of the lower walks consist of peat hogs and deep morasses, so that with us their situation would be mended; a circumstance which will always ensure success."

It is stated in the twelfth volume of the Statistical Account of Scotland, that "the following experiment, made in the parish of Barr, in Ayrshire, shows the comparative hardiness and value of the Cheviot breed. In June a ram, and two score of ewe hogs of the Cheviot breed, were put upon one of the highest and coldest farms in the parish. The harvest was wet, the winter and spring stormy, and the loss of the native sheep through poverty and disease, was considerable. Yet all these, though strangers and in such a situation, did well."

And in "Observations on different breeds of sheep," it is stated that "i. Etrick, Ewesdale, and Liddesdale, they are now converting

their flocks as quickly as possible into the Cheviot breed."

The Roxburgh Report also says, that "Liddesdale is the worst district, yet the Cheviot breed thrive in it."

The writer of the first of these Reports remarks that "it is difficult for those who have already got another kind to change their breed but new beginners ought undoubtedly to stoop with the Cheviot kind. It is said that the Yorkshire graziers have a prejudice against this kind probably because they would then have more rivals in the trade, which is now in few hands as the carcass and not the wool is the principal object of attention. Whatever may be in this the introduction of the Cheviot, which would treble the price of wool, would more than balance it." And he adds from the same volume of the Statistical Account of Scotland, that "even they who have another stock, and cannot conveniently change it, might at least cross it with the Cheviot breed, which might be done with little trouble, and to great advantage."

More might be added, but I fear I have already rendered this article too lengthy for your columns.

THOMAS GUY.

Sydenham Farm, Port Oshawa, }
November 27, 1860. }

Principles of Breeding.

All breeding is founded on the principle that like begets like. This is, however, liable to some exceptions, and is much more generally true when breeding down than when breeding up. If two animals (which can never be exactly similar in all respects) are requisite to the perpetuation of the species, it necessarily results that the progeny must differ in a more or less degree from each parent. With wild animals, and such of the domestic as are allowed to propagate without the interference of art, and whose habit, treatment, and food are nearly similar to their natural condition, the change through successive generations is scarcely perceptible. It is only when we attempt to improve the good qualities that it is essential carefully to determine, and rigidly to apply, what are adopted as the present scientific principles of breeding. We cannot believe that we have penetrated beyond the mere threshold of this art. Unless then we launch into experiments, which are necessarily attended with uncertainty, our duty will be to take for our guide the most successful practice of modern times, until further discoveries enable us to modify or add to such as are already known and adopted. We may assume, then, as the present rules for this art,—

- 1st. That the animals selected for breeding from should unite in themselves all the good qualities we wish to perpetuate in the offspring.
- 2nd. These qualities, technically called points,

should be inbred in the animals as far as practicable, by a long line of descent from parents similarly constituted. The necessity for this rule is evident from the fact, that in mixing different species, and especially mongrels, with a long-established breed, the latter will strongly stamp the issue with its own peculiarities. This is forcibly illustrated in the case of the Devon cattle, an ancient race, whose color, form, and characteristics are strikingly perpetuated, sometimes to the sixth or even later generation. So far is this principle carried by many experienced breeders, that they will use an animal of inferior external appearance, but of approved descent (blood) in preference to a decidedly superior one, whose pedigree is imperfect.

3rd. All the conditions of soil, situation, climate, treatment, and food, should be favorable to the object sought.

4th. As a general rule the female should be relatively larger than the male. This gives ample room for the perfect development of the uterus, easy parturition, and a large supply of milk for the offspring, at a period in its existence when food has a greater influence in perfecting character and form than at any subsequent time. Exceptions to this rule may be made when greater size is required than can be obtained from the female, and especially when more vigor and hardiness of constitution are desirable. For this purpose, strong masculine development in the male is proper, and if otherwise unattainable, something of coarseness may be admitted, as it may be afterwards corrected, and nothing ill atone for want of constitution and strength.

6th. Pairing should be with a strict reference to correcting the imperfections of one animal by a corresponding excellence in the other.

7th. Breeding in-and-in, or propagating from animals nearly allied, may be tolerated under certain circumstances, though seldom; and only in extreme cases between those of the same generation, as brother and sister. When the male possesses much stamina and peculiar merit, which it is desired to perpetuate in the breed, it may be done either in the ascending or descending line, as in breeding the son to the father, or the parent to his own progeny. This has been practiced with decided advantage, and some cases have been continued successively, down as the sixth generation.

8th. It is always better to avoid close relationship, by the selection of equally meritorious stock-getters of the same breed from other sources.

9th. Wholesome, nutritious food, at all times sufficient to keep the animals steadily advancing, should be provided, but they must never be allowed to get fat. Of the two evils, starving is preferable to surfeit. Careful treatment and absence of diseases must be always fully considered.

10th. Animals should never be allowed to be bred either too early or too late in life. These rules cannot be arbitrarily laid down, but

must depend on their time of maturity, the longevity of the breed, and the stamina of the individual.

11th. No violent cross or mixing of distinct breeds should ever be admitted for the purpose of perpetuation, as cattle of diverse sizes; horses of unlike characters, the merino and long-wools, or even the long or short, and the middle-wools. For carcass and constitution, these crosses are unexceptionable, and it is a practice very common in this country, and judicious enough when the whole produce is early destined for the shambles. But when the progeny are designed for breeders, the practice should be branded with unqualified reprehension.

W. A. C.

Ancaster, Dec., 1860.

Herefords in Canada.

GUELPH, 21st Nov., 1860.

MY DEAR SIR,—You no doubt will remember the remark I made when with you in July last, at the Royal Agricultural Exhibition held at Canterbury, England, when viewing the splendid lot of Herefords exhibited there, so incomparably superior to what we had seen at our Provincial Show for some years, viz: that I was inclined to purchase four or five to show Canadians what pure Herefords were. I had hoped to have met with you again at Dumfries, but only staying there one day had not that pleasure; being anxious to visit the Yorkshire Show, which I did, and found it equally as attractive, if not more so, than the one at Dumfries. After visiting many Shows and a large number of the most noted herds of Short-horns, I paid a visit to Monmouthshire and Herefordshire, and being in the midst of Hereford cattle took occasion to view several herds, and, from the appearance of the cattle and good reputation of the breed, I fully made up my mind to try and secure some of the young animals we so much admired at Canterbury, a number of which would be sold the end of September. On my return to London I requested my brother to attend Lord Bateman's sale, to take place on the 25th September, and purchase for me four heifers and one young bull, as I was returning to Canada on 30th August, and could not attend. He did so, and the result was, he purchased eight heifers and the finest young bull, and I am pleased to inform you at this time I have the nine here in good condition, four of them were at Canterbury, one of which was awarded the first prize for heifers under two years old; her companion and the two younger ones commended. The whole class of heifers was commended.

With such a beginning I propose to establish a herd of Herefords at my farm, in Puslinch, and trust that for the future this breed of cattle will receive the attention they merit, in this Province. Many, no doubt, will think it strange of me commencing a herd of Herefords, par-

ticularly so when I state my object in doing so is founded upon the merits of them, as a distinct breed, and, in my opinion, so much superior to what most Canadians think them, that I am determined to try and see how they will suit our wants and climate. If all is well I intend to give them a fair trial; and I trust to show a herd of Herefords next year at the Provincial Exhibition, London, which will at least attract attention. The cattle will have to rest upon their own merits, let the results be what they may. I feel sanguine they will suit this Province, and, when better known, become appreciated.

You will remark this herd is intended to be kept at my farm in Puslinch, the adjoining township to Guelph. I mention this, as it is my present determination to keep at Moreton Lodge the best herd of *Short Horns* I can breed, and shall endeavor to have a herd second to none in America, having some very promising young stock growing up, and expecting to have about twenty calves during the year. I am pleased to say the Cotswold sheep I brought out, as also my previous flock, have done well, and I hope their produce will increase my flock of pure Cotswolds next summer to nearly three hundred, which I trust will equal, upon the whole, any flock even in Britain, for quality.

It is pleasing that the crops the past season were good and the weather so fine to secure them. I have an extraordinary crop of turnips, and the past season has been the finest for agricultural operations I ever remember.

Any remarks you may think proper to make respecting the Hereford breed of cattle, and my importation (from what you saw of the breed when in England) in the *Agriculturist*, as regards their adaptation to Canada, &c., will oblige,

Yours truly,

FRED. WM. STONE.

PROF. BUCKLAND, Toronto.

[We are most happy to learn that our respected correspondent has received, "safe and sound," the animals purchased for him at the late sale of Lord Bateman's renowned Hereford blood, which perhaps stands unequalled for purity, size, and symmetry, in England. The Herefords we examined in company with Mr. Stone at the Annual Exhibition of the Royal Agricultural Society of England at Canterbury, last July, were certainly superior to anything we ever saw before: although we had formerly good opportunities of observing the best specimens of this valuable race of cattle. We do therefore with the greatest sincerity congratulate Mr. Stone and his Province on having safely

received his costly importation, and we trust that this "experiment," as Mr. Stone terms it, will prove profitable to himself and beneficial to the country. The very few Herefords that have been *occasionally* shown at our Provincial Exhibitions, (and in general this breed is wholly unrepresented,) could scarcely be considered even second-rate animals; and in the United States, at least till very recently, matters have not been much better. We found last summer, that during an absence of thirteen years from England, the Hereford cattle, as well as many other things connected with agriculture, had greatly improved. We are glad to find that Mr. Stone will still continue his short-horn herd, for which he deservedly enjoys a high reputation on this continent, and we think his determination judicious to keep the two breeds quite distinct on separate farms. We shall have much pleasure in complying with our correspondent's request, and will give, in an early number of this journal our impressions of the Hereford cattle, from what we heard and saw of them during our recent visit to England. We shall also have something to say on several other matters that came under observation.

Since our correspondent's letter came to hand we have found the following information respecting Mr. Stone's importation, in one of our most valued British exchanges, *The Mark Lane Express*, published in London, and which cannot fail to interest our readers.]—Ed.

HEREFORDS FOR AUSTRALIA AND CANADA.

Last week three young bulls of this famous race of cattle left the port of London for White of Sydney. They were selected from the following herds, viz: that of the Rev. Arch. Clive, Whitfield, Mr. Evans, Llandowlaire, Mr. Rees Keene, Pencraig, Monmouthshire. On the 24th the Steamer *Anglo-Saxon* sailed from Liverpool with one of the largest and most choice selection of these animals we have ever known leave our shores at one time. They were purchased at the recent sale of Lord Bateman's herd by Mr. J. J. Stone, of London, for his brother, Mr. F. W. Stone, of Moreton Lodge, Guelph, Canada West, who has long been a successful breeder of short-horn cattle and Cotswold sheep; but now having added another to his estate, he is about to commence breeding Herefords. This gentleman, from a purebred agriculturist, takes a prominent part in the progress of that district, being President of their Agricultural Society, at whose exhibitions he had frequently seen with regret awards given

to animals of the Hereford breed having but little claim to the intrinsic merits of the purebred animal. This induced him to have the following purchases made upon his account at Lord Lateman's sale, viz: Gentle, Baroness, Hebe, Nelly, Verbena, a daughter of Vesta (Vesta is an own sister to Gentle), a daughter of Little Beauty and own sister to Baroness, a daughter of Peersess and own sister to Nelly—which, together with the bull Patriot, are destined to form the basis of the Moreton Lodge herd of Herefords. They are all of prize-taking families; and Gentle and Baroness were two of the four sifer-winners of a first prize at Leominster, 1859, and are own sisters to Nymph and Vesta, the winners of first prizes at Cardiff and Leominster, 1858, and second at Hereford. Vesta also took a first prize at Barnstaple, 1959, and Hebe and Nelly were winners of first prizes at Hereford, 1859, Dorchester, 1860, as well as at Anterbury. With the exception of Vesta's daughter, the animals purchased are all by Carlisle (923), the winner of the first in his class at Cardiff, 1858, besides eight other prizes at different agricultural meetings. Vesta's daughter is Shobdon (1725). Shobdon by Carlisle was winner of a second prize at Barnstaple. On the same day that these animals left Liverpool for Canada two young bulls from Mr. Duckham's stud sailed from London, in the *Star of Peace* for Sydney, viz: Cronkill (1558) and Emperor. The former was bred by the right Hon. Lord Warwick, and by his Lordship's celebrated bull Dingham, (911); Attingham was a winner of first prizes at the Shrewsbury and Carlisle meetings of the Royal Agricultural Society of England; Cherry the 7th, Cronkhill's dam, won a first prize at Windsor, and second at Lewes. Emperor is by Napoleon the 3rd (1019), winner of the first prize at Chelmsford, and medal with high commendation at Paris, where his sire Alfred (871,) won the first prize of 1,000 francs and gold medal; his dam Carlisle won the first prize in her class at the Carlisle, Chelmsford, and Salisbury meetings of the Royal Agricultural Society of England. Animals so descended will not fail to improve the herds in which they are placed.

sons who will feel an increasing attachment to the paper and an anxiety for its prosperity, and many of these agents will probably become contributors.

The long winter nights have commenced, and farmers and their sons, and mechanics, will need something to interest them, and we hope your paper will do its part in this respect. I hope many of your contributors will suggest some topics in the discussion of which both farmers and mechanics may become interested and profited from week to week at meetings appointed for the purpose.

For instance, suppose we appoint a meeting in school-house section No. —, for Tuesday evening, 4th December, for the purpose of discussing the subject as to what are the kinds and classes of fruit which we may cultivate with the greatest profit, including the age at which the tree should be planted out, the time of the year and method of cultivation, taking into account our climate, our soil and our particular locality.

Next meeting, a week from to night, namely the 11th December—subject, agriculture as a profession; there show its antiquity its great importance to our country; its healthfulness as a profession; its comparative freedom from trouble and disappointment; the importance of storing the minds of our children with these thoughts, and the great utility of agricultural papers being introduced into our families.

Next meeting, 18th December,—subject, agricultural societies, their origin, their design or object; their progress in Canada; their reflex influence on the country.

Next meeting, 24th December,—subject, draining, its importance; different methods of making underground drains, cost per rod in building, &c.

Now we have some leading spirits in almost all our school sections, who can get up such meetings and lead in these discussions, to the interest and profit of all. S. KING.

Ryckman's Corners, Nov. 21, 1860.

Agricultural Intelligence.

Noting the Circulation of the Agriculturalist, Evening Meetings for Discussion, &c.

EDITOR AGRICULTURIST.—The time has come you and all the friends and well wishers of the *Canadian Agriculturist*, to put forth all your efforts to secure a large increase of subscribers to your useful paper and welcome visitors to your families. Can you not hold forth inducements to such as may act as agents, by offering prizes, thus following the example of the *Farmer* and other papers of like character? This will secure a large number of per-

The Vintage of France and Germany.

From an elaborate Report of the great London House of Messrs. Groves & Co., we learn that the results of the vintage in Europe is generally of a most unsatisfactory character. In the spring, the vines were, upon the whole, promising, but the almost unparalleled cold and wet of the summer and autumn, prevented the proper ripening of the fruit, and consequently affected most injuriously the quality of the wine.

In several districts the grapes are represented as being ripe, green, and perfectly rotten, so that where pains have not been taken in separating them, the wine must necessarily be of the most common description. All authorities seem to agree that so wet and cold a season has not occurred since 1816.

SHOULD SEED WHEAT BE BROUGHT FROM THE SOUTH OR NORTH?—I perceive from the remarks of N. S., in July number of the *Farmer*, that the mooted question of "Whether wheat for early ripening should be brought from the North or South," is yet unsettled. Near the city of Edinburgh, in Scotland, is a tract of land cultivated by intelligent, scientific farmers. These practical men, every two or three years, import their seed wheat from the London market, three or four hundred miles south of them, and it pays well, as they gain two weeks or more in that cool, dripping climate—where I recollect the papers stating, one wet season, they had not been able to gather their oats yet in December. For corn, the very reverse of this should be the rule. If it is important to have corn to ripen early bring it from the North, where it must mature early or be caught by frost. I have raised corn, Gourd seed, from the rich Miami bottoms near Cincinnati; it grew large and very promising, but its habits of late ripening, exposed it to frost in the last of September, and but few sound ears could be found in a ten-acre field.—*Genesee Farmer*.

Horticultural.

Horticultural Hints.

But little can now be done in the flower or vegetable garden, or shrubbery, except to see that all tender things are properly protected, and the clearing away, if not done before, all cuttings, leaves, &c., which give an untidy appearance to a place. Hitherto the weather has been favorable to the finishing of out-door operations, but as severe cold may now be expected every day, not a moment should be lost in seeing that the mulching and protection of such plants as require this kind of treatment are made as perfect as possible. From want of proper attention to these matters many of our choicest plants are injured or destroyed during our inclement winters and changeful springs. Manure may now be got out ready to be incorporated with the soil when the season for such operation arrives. In this cold climate, farm-yard dung,

when exposed on the surface, does not lose much of its ammonia and deliquescent salts; the chief risk is in early spring, when the heavy rain which frequently accompany the melting of the snow are likely to wash away the warm soluble portion. This may in most cases be easily prevented by a little extra attention, which will be found amply to repay the trouble.

At this leisure season, plans should be formed for conducting operations the coming year. Whatever defects were noted down during the past season should be carefully corrected the next. In this way a place may be progressively improved, without serious outlay at any one time, and without so sweeping a change as might be felt undesirable, if not positively objectionable, for a few years to come. Mice are frequently found to do irreparable injury to fruit trees during deep and protracted snow. When the stems are not artificially protected it is a good plan to keep the snow around them closely trampled down so as to form a hard substance which will often prevent, or at least mitigate the evil. The treading down of the snow in case of trees that are winter mulched is deserving particular attention.

The conservatory or greenhouse require vigilant attention in order to keep plants in healthy condition. As wealth and taste increase, it is pleasing to see these indices of comfort and refinement increase also. Many scores of greenhouses and cold vineries have been erected in Canada during the last few years. The great thing is to erect plant-houses on such principles as will effectually keep out frost during the severest weather, without incurring the heavy an expenditure of fuel, and injuring the plants by too much heat and imperfect ventilation. Something will depend upon the situation of the house, a warm sheltered aspect when obtainable, should always be secured. During severe weather every crack or chink especially in the walls or foundation, should be carefully filled up with list or cotton wool, which will tend to keep an equable temperature, and prevent what is so peculiarly injurious and destructive to plants, cold draughts and sudden transitions from heat to cold. Much may be done in extreme weather to economise fuel, and promote the health and beauty of plants.

covering the sides and even roof of the house by matting or any kind of sheeting. We saw this done with excellent effect in a small greenhouse, belonging to a gentleman of taste, in one of our back townships, in a hard winter a few years since. Artificial heat should be conducted with caution through the colder parts of the house; pans of water are beneficial to moisten the atmosphere by evaporation, and the syringe is frequently required for this purpose, and to clean the plants. Mildew is apt to make its appearance at this season, and usually attacks the most crowded and weakest plants, or such as have been too much exposed near the door, to the undue action of heat. Changing these conditions will sometimes arrest its progress, and in severe cases sulphur water may be used with excellent effect. Flower of sulphur is mixed with water and distributed over the plants with a syringe; or dry sulphur may be sprinkled on them after they have been wetted, or the sulphur will not adhere. The closest attention to cleanliness and ventilation, when the external temperature will admit, that is when it is about that of the house, is essential to the healthy condition of plants.

To Keep Grapes Fresh in Winter.

As many persons fail in keeping grapes through the winter, we will briefly state the conditions of success in the experiment.

Grapes must be kept cool. Heat, and especially alternations of heat and cold, will promote decay. Let the grapes be kept in as cold a place as possible without freezing: and indeed a degree or two of frost will not hurt them, if they thaw out very slowly.

They should be kept dry. Heat and moisture are the two great agents in producing decomposition. There are very few cellars which are dry enough for grapes. A chamber or retired closet is a better place. Yet, if the house is warmed by a furnace, or even by coalstoves, the air will probably be made so very dry in the chambers, that the grapes will shrivel up and nearly spoil. This should be guarded against.

When gathering grapes, wait until they are fully ripe; then make sure of a fine, dry day, and pick the clusters during the middle of the day—say between nine o'clock and four. Carry them in baskets to a cool, airy chamber, and spread them on the floor. Pick them over carefully, culling all bruised, unripe or defective berries, and let them stand in baskets holding about half a bushel, for a week or ten days. In this time,

they will have gone through "the sweating process," and may then be packed down for winter.

In packing, various methods are employed, and there does not seem to be much choice between them. A very good way is this: Take boxes holding a peck or half a bushel, place a layer of cotton batting at the bottom, then a layer of grapes, then layers of cotton and grapes alternately, until the box is filled. To prevent the clusters pressing too heavily on each other, some practice putting a wad of cotton between them. When the box is full, put on the cover and set it away in a cold place.

Some persons use champagne baskets for packing in, arguing that the circulation of air through the meshes of the basket favors the preservation of the fruit. Others again paste paper over the whole, to keep out all air! We will not undertake to pronounce upon either of these methods, for we know that grapes keep well in both, provided they are kept where they are neither too hot or too cold, neither too moist or too dry.

A friend of ours keeps his grapes in a garret, where the mercury often falls to 20° above zero. But when a very cold snap approaches, he throws a heavy coverlet or two over his boxes, and they get no harm. At any day, from November till April, he can entertain his guests with the plumpest and freshest of grapes. With him, the *Isabella* is the best keeper; the *Diana* next best. *American Agriculturist.*

Domestic.

SALERATUS.—If there is any practice that is more destructive of good flour, and which more readily turns what was meant to be healthy food into most deadly poison, than the use of saleratus, we would like to know it. We loathe the smell of the article in every kind of mixture, that is intended for food; and consider its use detestable. The *Philadelphia Ledger* thus remarks upon the use of this abominable alkali:

"If our western friends can in any way teach their wives, daughters, or cooks, to keep the pearlsh out of the bread, all the yellow people, especially the yellow children, who are supposed to be turned yellow by the fever and ague and billious fevers will soon be turned white. It is a great mistake to suppose that the yellow countenances of the west come from bile, when it is only the enormous quantities of pearlsh eaten in the bread that is reflected through the skin. Bread is the staff of life, it is said—and so it is;—but it is the staff of death too in this country. Bad bread kills about as many people here as bad rum. So many people eat poisonous pearlsh for bread that they die by inches. Dyspepsia—that great monster disease of the country, that deranges the liver, brings on costiveness, and thus finally kills the human victim,—is half the time 'pearlsh.' Here in the east—out of New England—we have nearly driven off the pearlsh-saleratus cooks, but not altogether. Pearlsh lives here yet in bread, but in cities and towns we have nearly whipped out the mur-

derer. I. the distant western towns, beyond the good hotels of the lakes and rivers, pearlash, under the name of saleratus, is king. It is pearlash for breakfast, pearlash for dinner, pearlash for supper. It is not any wonder then that the people of the east turn yellow in the west, and sicken; not of fever and ague, bilious and congestive fevers, but of pearlash three times a day."

HOP YEAST.—Peel and slice four good-sized potatoes and put into two quarts of water, together with two handfuls of hops—let it boil until the potatoes are soft, then put as much flour in a pan as it will require to make a stiff batter. Add two tablespoonfuls of sugar; one of salt, one of ginger; then, while boiling hot, strain it through a sieve over the flour, stirring while pouring it on. When cool add a teacup of yeast, and let it remain where it is warm until it gets light, then stir in Indian meal until it is dry enough to roll and cut, and make yeast cakes, which are far preferable for summer, as they will keep without any trouble, if they are dried through, put in a bag, and kept in a dry place. Care should be taken that the sun does not come upon them while drying, as it will scald them if it is hot. The yeast will keep for a number of weeks in winter by putting it in a stone jar, and keeping in the cellar.

SWEET CORN BOILED WHEN RIPE.—For several years I have saved my sweet corn that ripened on the hill, and cooked it in the winter, and found it almost equal to the "fresh article." My plan is this: I gather it when ripe, dry it in the ear, and lay it by for use. When wanted, shell a portion, say a quart; put it in a kettle with water sufficient to keep it covered, and boil; put in soon after a half-pint of lye; boil till the cuticle or skin of the kernel becomes soft and is easily removed; put it in cold water, wash and rub with the hands till clean. Now boil slowly for several hours, or steep till done. Serve with butter and salt, or eat with milk. Better than "samp." May be kept several days in the water in which it was boiled. Heat when wanted. So says J. L. H., in *Iowa Farmer*.

EXCELLENT RICE PUDDING.—The yolks of four eggs; one teacup of boiled rice; one pint of milk and a little salt. Take the whites of the four eggs and one pound of white sugar, a few drops of lemon juice; make a frosting, and just as the pudding is done, spread it on, and set it in the oven to harden.

TO CLEAN KNIVES.—I find, says a writer in the *Germanatown Telegraph*, that to take one-half of a raw potatoe and dip it in brick dust and apply it to knives, has an excellent effect in brightening them—a desideratum to all house-keepers and families certainly most devoutly to be wished.

A young dog, alive and kicking, was picked up at sea, not long ago, though neither land nor vessel was in sight.

Statements of Exhibitors.

WINTER WHEAT.

STATEMENT OF HENRY MOYLE, BRANTFORD,

Awarded Canada Company's premium of \$100, for 25 bushels Winter Wheat.

The wheat, Blue Stem, to which the Canada Company's prize of one hundred dollars was awarded, was grown in the Township of Brantford, from seed imported the year before from Ohio, and known there as "Kentucky White." The soil is a light sandy loam, with a subsoil of redish earth, in some places nearly becoming clay, with spots of sand and gravel. The depth of soil available for cultivation, is only limited by the capability of the plough to turn up. The field in which the wheat was grown had been in grass for four years; was ploughed up early in the summer, say June, was harrowed three or four times to keep down the grass and weeds, and the sheep turned on it. After harvest, in August, I put on the gang plough, and kept it and the harrow at work till the time for seeding. It was sown on the 9th, 10th, and 12th, of September, with a drill, at the rate of one bushel and a peck to the acre, and cut the last week in July. The injury sustained by the midge was not to any appreciable extent, though at one time I feared it would be serious, as the flies were very numerous, or appeared to be so to me. I regret I cannot do more than give an estimate of the produce, having only threshed one stack for seed. I do not however expect it will be more than 28 bushels per acre, as it was considerably injured by the frost in the winter and spring.

HENRY MOYLE.

Brantford, Nov. 22, 1860.

BUTTER.

STATEMENT OF THOMAS BOLTON, GUELPH,

Awarded Silver Medal for best June Butter.

My dairy consists of eight cows, which I milked regularly twice a day. I use earthen ware pans, which are scalded with hot water and then cooled with cold water every tin they are used. I let my milk stand 4 hours; I stir my cream every mornin.

churn twice a week, and use a box churn. I bring my cream out of the cellar over night and let it stand till the temperature is about 60°, then it generally takes from 40 to 60 minutes churning. When the globules of cream begin to break, I put a little cold water into the churn, and continue to do so till the butter is well gathered. I have my butter tray scalded with boiling water, and rinsed with cold water, then take the butter out of the churn with a wooden ladle, and first work out the buttermilk; secondly, wash it well with clear cold water, and thirdly I work in the salt in the proportion of about one pound of salt to twenty pounds butter; after which I wash it again with cold water, and let it stand in the butter tray in the cellar till evening. then work it again and leave it till morning, then work out all the water possible. It is then ready to pack in the firkin. The manner in which I prepare the firkin for use is as follows: I first put a handful of salt and one of bran into the firkin, and also one pail of scalding water, and cover it close for an hour, after which I empty it and fill with cold water and let it stand a day, then empty and rub well with salt; the firkin is then ready for use. I pack the butter with a wooden ladle; when the firkin is full I put a cloth on the butter and cover the cloth with a thick layer of salt to keep the air from the butter. I use the common salt, rolled, and I consider it the best.

THOMAS BOLTON.

Guelph, September, 1860.

FLAX.

STATEMENT OF ALEXANDER & Co., NORVAL,

awarded special premium of \$20, for collection of fibres adapted to manufactures, the growth of the Province.

Straw purchased from farmers, with the seed. The return to those who cultivated the flax for us, varied from \$25 to \$50 per acre. The sample exhibited was scutched, without giving the advantage of passing through the reaking rollers, which we could not get fit to run up in time. The cost to us of bringing the fibre into the state of the sample exhibited is 8 to 9 cents per lb.

A grizzly bear in the mountains of California supposed to have killed no less than seven men in the last year.

Miscellaneous.

SCIENCE IN FAMILIAR THINGS—SALTING THE STREETS TO REMOVE SNOW—ITS EFFECT UPON HORSES' HOOFS.—Coming to our office the other morning, we saw a man strewing salt along the railroad track for the purpose of melting the snow. This is the common practice on our city railroads, but objections have been made to it on account of its injurious effects on the horses' feet. Both of these facts—the melting of the snow by the salt and the injuries to the horses' feet by the liquid—are instances of the application of the most beautiful and subtle principles of nature to the common affairs of life. There are several substances besides snow and salt which are solid while separate, but which, on being placed in contact, become liquid; why they do so is wholly unknown. It is just as completely a mystery to Professor Faraday or Professor Doremus as it is to the most ignorant laborer that strews the snow with salt. But the cold that results from this change of the two substances from the solid to the liquid form is one of the exhibitions of latent heat—a matter which has been the subject of profound and laborious investigations, and is found to play a part in the operations of steam and air engines, in the artificial making of ice, and, indeed, in almost all the mechanic arts. The subject, when properly stated, is perfectly simple.

If a piece of very cold ice, of a temperature far below the freezing point, is brought into a warm room, the ice will become warm gradually till it reaches the temperature of 32°, at which point it will remain till the ice is all melted, when the increase of temperature will be resumed, and will go on till the water becomes as warm as the air in the room. If the relative temperature of the room and ice is such that the cold ice is warmed one degree a minute, it is found that the temperature rises at this rate till it reaches 32°, at which point it stops and remains for 140 minutes, during which the ice is all melted, after which the rise in the temperature again goes on at the rate of one degree a minute. The heat which enters the ice while melting does not affect the thermometer and is not perceptible to the senses; it is hidden, and therefore called latent heat. The sensible heat, which becomes latent in the change of bodies from the solid to the liquid condition, varies with different substances—in water, as we have seen, it is 140°; in sulphur it is 144°; in lead, 370°; and in zinc, 493°.

Now, it is found that when two solid substances are changed to the liquid condition by simply being brought in contact, this change is accompanied by the conversion of sensible into latent heat; a large amount of heat is rendered latent, and this is absorbed from surrounding substances. This is the philosophy of freezing mixtures. If one pound of salt is mixed with two pounds of snow and a thermometer placed in contact with

the mixture, as the mass melts it will absorb so much heat from the mercury as will carry it down to 5° below zero. If a horse's foot is in the mixture a portion of this heat must come from the foot, and it is not strange that it should leave the part so intensely cold as to prove injurious.—*Scientific American.*

UNLUCKY PEOPLE.—It is part of the great fact of luck—the indubitable fact that there are men, women, ships, horses, railway engines, whole railways, which are lucky, and others which are unlucky. I do not believe in the common theory of luck, but no thoughtful or observant man can deny the fact of it. And in no fashion does it appear more certainly than in this, that in the case of some men cross-accidents are always marring them, and the effect they would fain produce. The system of things is against them. They are not in every case unsuccessful, but whatever success they attain is gained by brave fighting against wind and tide. At college they carried off many honors, but not such luck ever befel them as that some wealthy person should offer during their days some special medal for essay or examination, which they should have gained as of course. There was no extra harvest for them to reap; they could do no more than win all that was to be won. They go to the bar, and they gradually make their way; but the day never comes on which their leader is suddenly taken ill, and they have the opportunity of earning a brilliant reputation by conducting in his absence a case in which they are thoroughly prepared. They go into the church and earn a fair character as preachers; but the living they would like never becomes vacant; and when they are appointed to preach upon some important occasion, it happens that the ground is a foot deep with snow.—*Fraser's Magazine.*

HORACE GREELY ON AGRICULTURAL PAPERS. There are at present some fifty or sixty periodicals published in our country devoted to farming—as many, I presume, as in all the world beside. They have been built up at great expense of talent, labor, and money; for when Col. Skinner started the first of them at Baltimore, some forty years ago, the idea of teaching farmers anything in that way was hooted by them as ridiculous, and he found it hardly possible to give his early numbers away. Hundreds of thousands of dollars have been spent on these publications; and they are this day, in my judgment, doing more to promote the true growth of the country, and the substantial, enduring welfare of our people, than Congress, the Army and the Navy, for the support of which they are taxed some forty millions per annum.

CLIMATE.—The effect of climate on the human constitution is shown in a striking manner by the inhabitants of Australia, who in the course of two or three generations, lose the corpulence characteristic of Englishmen, and become a tall, gaunt, raw-boned race, like the inhabitants of our southern States.

HOW I SHOT MY FIRST DUCK, AND WHAT SORT OF A DUCK IT WAS.—In the morning, when the light was about the colour of a grey cat in a cellar, Tim roused me up, and we sallied forth. We marched silently along shore, "looking sharp" through the reeds, Tim constantly whispering me to "keep my eye skinned." The gull felt very heavy, and in that peculiar light looked about fifteen feet long. On we strode, our pulse going like that of a volunteer at Buer Vista. Suddenly says Tim softly: "Ah! There a chance, by Jove! Now, my boy, all ready!" "Eh, chance, where, at what?" Tim put his finger on his lips, and making me crouch down pointed through the reeds. In a minute, or so enough, I saw a duck gracefully bobbing up and down, about fifty yards off or less. I became awfully excited. "Let, let me shoot him, Tim?" "Certainly; crack away," I kneeled down; my fingers trembled like those of a surgeon at his first operation. The duck looked about the size of a turkey gobbler to my distorted vision. It was a fearful moment. However I recovered myself by a resolute effort, brought the gun up, took a long, murderous aim, and my fingers pressed the trigger—whang! I beheld the sky, and fourteen hundred thousand stars perpendicularly before me. Upon examination I found this phenomenon was occasioned by the horizontal position on my back, combined with the concussion of the shot. "You've hit him," cried Tim; "he's wounded. Quick, quick, take my gun, while I load yours." I looked at my weapon. I had fired both barrels at once. I looked at the duck; he was bobbing up and down violently. Considerably bewildered, however, seized Tim's gun, resumed my position, took another deadly aim, and fired. "Trot! Trot! barrel quick, or he's off!" cried Tim. Bang! "By George; you've missed him! He's—no, he can't fly?" See him spin round. He gave him one more. Mind, aim carefully. Now Bang! fizz-z-z! bang! I saw the sky, and a thousand more planets than before. When he arose, that diabolical duck was still there, spinning around more merrily than ever. "Tim," said I, "that duck is remarkably tenacious of life." "Ye—yes. The fact is, ducks are generally, especially canvas backs; they are called so on account of the thickness of their skin. I'm convinced that's a canvas-back." "Tim," said I, "I'll take the skiff and shove out there and get 'em. You wait here. He's nearly gone now." "Yes; I'll go back to the house for order breakfast. Our shots have spoiled the sport for this morning. I'll have things ready for the time you get back." And without waiting for any remonstrance, Tim walked rapidly. I got into the skiff, shoved out, reached the duck (who appeared, as I advanced, to have head entirely shot off), picked it up; and for that—it was a decoy! My remarks to Tim upon rejoicing him at the hotel, I have upon reflection, concluded to omit.—*Wild Spirit.*

PEAS A SUBSTITUTE FOR POTATOES.—Professor Huxham, of the Royal Agricultural College at Cirencester, in a report on the agriculture on the south coast, remarks that the vast extent of peas cultivated there strikes a stranger as somewhat curious, until he finds out that to a great extent they take the place of beans as a feeding crop; and besides, that peas are even now used as an article of food amongst the poor to a greater extent than at present prevails in most parts of England. "Go where one will," he says, "the hucksters' shops will be found to exhibit a large pan of fried peas, in the centre of which is a half-pint measure indicative of the manner in which it is retailed to the poor; and good and serviceable food it is. This is a matter of no small importance when we consider their value in a muscle-making point of view; and it is to be known that 1lb of peas is equal to out 20lbs of potatoes in real feeding and strength-giving properties, no country need regret the loss of the latter fickle plant, if it has a good store of peas to fall back upon." If this calculation be correct, a coomb of peas, weighing perhaps 16 stone, at 23s, which is more than their present price, would be equal in point of nourishment to 80 bushels of potatoes, costing, 5s. per bushel, £20. But, according to the tale of Prof. Johnston, which is more nearly in agreement with the report of the members of the French Institute, the proportion of nourishment in potatoes, as compared with peas, is out 1 to 5. But even at this rate, potatoes at a bushel are four times as dear as peas, considering their relative nutriment. Our guardians and friends of the poor should remember this. *Mary and Norwich Post.*

CALUMNIATED BIRD.—There are many well-known proverbs relating to the power of calumny, and the readiness with which evil report is received and retained, notwithstanding it has been repeatedly proved to be false and libellous. The common goat-sucker is a good instance of the truth of this remark, for it was called *airothelos* goat-sucker by Aristotle, in the days of old, and has been religiously supposed to have sucked its victim ever afterwards. The Latin word *capri-gus* bears the same signification. It was long supposed that after the bird had succeeded in sucking some unfortunate goat, the fount of life was immediately dried up, and the poor victim also lost its sight. Starting from this report all kinds of strange rumours flew about the world, and the poor goat-sucker, or night-jar, as might more rightly be called, has been invariably hated as a bird of ill-omen to man and beast. As usual, man reviles his best benefactor, there are very few creatures which do such service to mankind as the night-jar. Arriving in this country in the month of May or June, it frequents our shores just in time to catch cock-chaffers, as they fly about during the night in search of their food, and does not leave us until it has done its best to eat every chaffer that comes across its path. The damage which is done by these brown-backed, white-ribbed, hooked beetles is almost incredible, for they are not only extremely destructive in their larvæ

states, but are scarcely less voracious when they have assumed their perfect form. Passing a life of three years or so below the level of the ground, the larva of the cock-chaffer shears away the grass-roots and other subterranean vegetation with their scissor-like jaws, and are constantly busy in satiating the hunger of their huge stomachs, which occupy nearly the whole of the body of the grub. When they have passed through their earlier changes of form, the cock-chaffers rise from the ground, and, taking to flight, settle upon the trees, and devour the foliage just as they had previously fed upon the roots. Sometimes a whole series of trees may be seen which have been entirely stripped of their leaves by the chaffers. I well remember seeing a row of trees that extended along a country road near Dieppe, that had been totally despoiled of their foliage, and which stretched their naked branches abroad as if they had been blasted by the destroying breath of the Simoom.—*Routledge's Illustrated Natural History.*

CANADIAN MAMMOTH TREES.—Few people have heard of the mammoth walnut tree that grows in the township of Metcalfe, and that one of extraordinary growth that stood, until Saturday last upon Captain Beer's farm. This giant of the forest attracted the attention of the firm of Smith, Williams & Co, of 442 Washington Street, New York, and, having purchased it of Captain B., preparations were made to lay it low. A number of people were invited to see this, the largest tree of Western Canada, fall, which at last took place with a tremendous crash. At one foot above the roots it measured thirty-six feet, where the branches commenced with four great limbs that appeared as large in their girth as some of the surrounding trees. As it lay, the butt measured twelve feet of its length. The wood is beautifully marked and variegated with knots and veins, and will work up into an immense number of gun and pistol stocks, and ornamental cabinet work.—*London (C. W.) Free Press.*

CENTRAL HEAT OF THE EARTH.—The rate of increase of heat is equal to one degree of Fahrenheit for every forty-five feet of descent. Looking to the result of such a rate of increase, it is seen that at seven thousand two hundred and ninety feet from the surface the heat will reach two hundred and twelve degrees, the boiling point of water. At twenty-five thousand five hundred feet it will melt lead; at twenty-one miles melt gold; at seventy-four miles cast iron; at ninety-seven miles soft iron; and at one hundred miles from the surface all will be fluid as water, a mass of seething and boiling rock in a perpetually molten state, doomed possibly never to be cooled or crystallized. The heat will exceed any with which man is acquainted; it will exceed the heat of the electric spark, or the effect of a continued voltaic current. The heat which melts platina as if it were wax, is as ice to it. Could we visually observe its effects, our intellect would afford no means of measuring its intensity. Here is the region of perpetual fire, the source of earthquake and volcanic power.—*Recreative Science.*

INTERESTING EXPERIMENTS—If a wafer be laid on a surface of polished steel, which is then breathed upon, and if, when the moisture of the breath has evaporated, the wafer be shaken off, we shall find that the whole polished surface is not as it was before, although our senses can detect no difference: for, if we breathe again upon it, the surface will be moist everywhere except on the spot previously sheltered by the wafer, which will now appear as a spectral image on the surface. Again and again we breathe, and the moisture evaporates, but still the spectral wafer re-appears. This experiment succeeds after a lapse of many months, if the metal be carefully put aside where the surface cannot be disturbed. If a sheet of paper on which a key has been laid be exposed for some minutes to the sunshine, and then instantaneously viewed in the dark, the key being removed, a fading spectre of the key will be visible. Let this paper be put aside for many months where nothing can disturb it, and then in darkness be laid on a plate of hot metal, the spectre of the key will again appear. In the case of bodies more highly phosphorescent than paper, the spectres of many different objects which may have been laid on in succession, will, on warming, emerge in their proper order.—*Lewes' Studies in Animal Life.*

SPIRAL TENDENCY OF ORGANIC BODIES.—The most superficial glance reveals a spiral tendency as a general characteristic both of the vegetable and animal creation; but a minute examination traces it in every detail. An essentially spiral construction is manifested from the lowest rudiments of life upwards throughout every organ of the highest and most complex animal. The beautifully spiral form of the branches of many trees, and of the shells which adorn the coast, are striking examples only of a universal law. But the spiral is the direction which a body moving under resistance ever tends to take, as may be well seen by watching a bubble rising in water, or a moderately heavy body sinking through it. They will rise or sink in manifestly spiral curves. Growth under resistance is the chief cause of the spiral form assumed by living things. Parts which grow freely show it well:—the horns of animals, or the roots of seeds when made to germinate in water. The expanding tissue, compressed by its own resisting external coat, weathers itself into spiral curves. A similar result may be attained artificially by winding a thread around a leaf bud on a tree, so as to impede its expansion; it will curve itself into a spiral as it grows. The formation of the heart is an interesting illustration of the law of spiral growth. The organ originates in a mass of pulsating cells, which, gradually becoming hollow, gives the first form of the heart in a straight tube, more or less subdivided, and terminating at each extremity in blood-vessels.—*Cornhill Magazine.*

PENNYROYAL AND PEPPERMINT.—In answer to the query of your correspondent 'Fragaria,' I would say that pennyroyal is not abundant enough in this State, or in the northwest generally, to make its collection an object particularly

as it grows more abundantly in some of the old states. With reference to peppermint, I have no doubt, but that it can be cultivated successfully and with profit. It has been cultivated for many years, and in 1835 its cultivation was first attempted in Michigan. So successful has been here, that for the last twelve years, much oil has been obtained from the peppermint plantations of St. Joseph county, than from all the rest of the United States. The oak-openings are generally speaking well adapted to the growth of the peppermint. The chief difficulty in the way of cultivating it on the prairie, and in certain parts of the north-west, is the fact of the root being winter-killed. Where there is snow upon the ground as in parts of Wisconsin, and Minnesota, this difficulty would be removed, provided the season is long enough, but in the central and southern parts of this State, this objection would no doubt be obviated. In the northern part of the State the ground would have been specially selected on account of its warmth. I have seen it grow well in different parts of the north-west in gardens. For further information upon the subject, we are indebted to an excellent paper read before the American Pharmaceutical Association in 1838 on the Peppermint Plantations of Michigan, by Frederick Stearns, of Detroit. J. H. R.—*Illinois Prairie Farmer*

UNADDRESS'D LETTERS.—Collectively speaking persons remember and forget certain things with as much regularity as if memory and attention were the result of wheel work. A very common instance of forgetfulness is presented by persons posting letters without any address upon them. The number of times this act of obiviousness annually happens is known with the greatest precision, inasmuch as such letters are transferred to, and recorded in a bureau especially devoted to the purpose in each post-office. Now, it is found by the post-office returns in England and France, that the number of these unaddressed letters in each country is almost the same yearly. In London the number of such letters is about 2,000, being at the rate of six per day. But connected with this is another circumstance equally remarkable. A certain proportion of these letters is found to contain money and other valuable enclosures; and, like the whole number this portion is also invariable.—*Dr. Lardner.*

GRAIN GOING FORWARD.—The *Express* states that Buffalo has received and handled thus far the present season, the enormous amount of 3,179,835 bushels of wheat, corn, oats, barley, a, rye, and 1,172,107 barrels of flour. Adding the wheat its equivalent of flour, according to the ordinary rule of five bushels to the barrel, the gross grain receipts at that port from the opening of navigation to the first day of December in the year 1860, were 37,040,397 bushels—nearly double the average receipts of the past dozen years, and almost ten million bushels greater than the greatest amount ever before received in any one season.—*Detroit Tribune.*

SONG-BIRDS "TAMED" BY NATURAL MAGIC.—Now, let me show you the power of "Natural Magic" when practiced at the breakfast-table. It is here you will find that you possess the key to your bird's heart. Invite him regularly as your guest, and bid him hearty welcome. "Dicky" must be—shall be—one of our "Happy Family." So place him on the table every morning. Let us imagine—the morning sacrifice duly paid, and all comfortably seated around the well-spread table with smiling faces—that we are about to take our grand lesson in bird-ming. Open the door, or doors of your little friend's dwelling. Let him see he is invited to a "free." Have ready on the table-cloth some little delicacy in which he delights, such as a twig of ripe groundsel or flowery chickweed, a nice morsel of egg, or a bit of spongecake—above all, his bath. His little majesty will note that you are doing, and readily resolve in his intuitive mind the meaning of everything he beholds. If he has been long neglected and treated with indifference, he may not, perhaps, realize the first morning all you expect from him. Such a thing as this would be unnatural: would it not? He will most probably alight on the edge of the open door, look out, survey all that is going forward, and return to his old quarters. The rest of the day he will devote to thinking matters over. That birds do think I am quite prepared to prove. Next morning again invite your pet or pets: again open their doors, again read before them some tempting luxury. Mark the result, and let it be decisive evidence that they have very-retentive memories, as well as dery-affectionate hearts. Looking up archly, your little friend will now, perhaps, leisurely descend from their seat, hop along the table, help themselves to some tit-bit, and stare you boldly eye, saucily, in the face. They will then show their "consequence," by coquettishly approaching close to your tea-cup, and may be, with extended wing, give you battle. A week will accomplish all this, and very much more.—*William Id.*

A VERY OLD LADY.—Among the visitors to an agricultural show recently held at Skipton, West-riding, was, says the *Manchester Examiner*, an old lady who attracted considerable attention. The dame in question was a poor woman named Mary Walker, who was born on the 2nd of February, 1759 (the year Wolfe was killed,) and was consequently 101 years of age. George II. reigned in England at the time of her birth, and lived through the reigns of George II., III., IV., and William IV., to the 23rd year of Majesty Queen Victoria. The youngest of sons, himself a man "getting in years," as remarked, drew the ancient dame on a low-wheeled carriage. She conversed readily with those around her, and on our expressing praise at her age, she exclaimed, "Oh! I'm done yet."

THE MOVING GLACIERS.—In 1837 Hugo ran up the cabin at the base of a rock which divides Finster Aar from the Lauter-Aar tributaries. During in 1830, he found that it had sailed

down the frozen stream to a distance of about 330 feet. Six years afterwards this nomadic mansion had advanced upwards of 2,400 feet; and when Agassiz fell in with it, in 1841, greatly to his surprise he discovered that it had performed a journey of 4,400 feet since its erection. There it was, as sound and well preserved after its lonely travels as if it had been kept under a glass case all the while. In 1787, De Saussure left a ladder on the Glacier du Geant. In 1830 it was found embedded in the Mer de Glace, having traveled the intervening distance at the rate of 375 feet per annum.—*British Quarterly Review.*

THE GREAT WESTERN PLAINS OF AMERICA.—These occupy a longitudinal parallelogram, nearly one thousand miles wide, extending from the Texan to the Arctic coast, and from the Rocky Mountains to the western border of Louisiana, Arkansas, Missouri, and Iowa, an area equal to the surface of twenty-four States between the Mississippi and the Atlantic, without a single abrupt mountain, timbered space, desert or lake. There is no timber on this area, and single trees are scarce. The soil is not silicious or sandy, but a fine calcareous mould. The country is thickly clad with grasses, edible and nutritious, through the year, and swarms with animal life. The climate is comparatively rainless; the rivers which abound, and which all run from west to east, serve, like the Nile, to irrigate rather than drain the neighboring surface. From their dimensions and position they may yet be the pasture field of the world, and upon them pastoral agriculture may yet become a separate department of national industry.

VEGETATION.—For what infinite wonderfulness there is in this vegetation, considered, as indeed it is, the means by which the earth becomes the companion of man—his friend and his teacher! In the conditions which we have traced in its rocks, there could only be seen preparation for his existence; the characters which enable him to live on it safely, and to work with it easily—in all these it has been inanimate and passive; but vegetation is to it as an imperfect soul, given to meet the soul of man. The earth in its depths must remain dead and cold, incapable except of slow crystalline change; but at its surface, which human beings look upon and deal with, it ministers to them through a veil of strange intermediate being, which breathes, but has no voice; moves, but cannot leave its appointed place; passes through life without consciousness, to death without bitterness; wears the beauty of youth without its passion; and declines to the weakness of age, without its regret.—*Modern Painters; by John Ruskin.*

GOLD AND AGRICULTURE IN AUSTRALIA.—There is one remarkable feature in the history of the gold-discoveries of Australia which distinguishes it from other events of a similar nature. It is this—after the first excitement had in some measure subsided, the colonists, for the most part, at once settled down again to the ordinary pursuits of life. Agriculture in particular—the most important industry to a young and rising

country—so far from being injuriously interfered with, has received a fresh and enormous impetus from the vast amount of capital created at the "Diggings." This is proved, by the liberal support of agricultural societies, the increase in the production of wool and other colonial produce, by the extensive import from Europe of agricultural implements and machinery of the most modern and expensive description, and of horses, cattle and sheep, purchased in England at enormously high prices.

GYMNASIA IN COLLEGES AND SCHOOLS.—The experiment of introducing physical culture, by means of gymnastic and calisthenic exercises, as part of the system of education at Amherst College, is pronounced, after trial for one term, a decided success. The institution has a gymnasium, thoroughly appointed, with bowling alleys and wash rooms. The department is under control of a graduated professor, whose business it is not only to regulate the mode and quantity of exercise, but to impart instruction in physiology and hygiene as well. It is made obligatory upon the students to take exercise, just as it is to recite Latin and Greek. And it is found, under a careful and natural regimen, that what was feared would be disagreeable as partaking of the nature of compulsory routine, is a very pleasant pastime, under which great bodily good is realized by all the students.

INFALLIBLE CURE FOR CANCER.—The following recipe for the cure of this most loathsome disease, by Mr. Fugett, an old gentleman living in this country, who assures us that he has never yet known it to fail:

General Cancer Receipte.—Take pulverized beech drops, 29 grains. Red Puc coon root, 3 grains. Pure arsenic, 1½ grains. Mix together and keep in a dark place.

To make Ointment.—Take a handful of slippery elm bark, a handful of the weed life-everlasting; put in a pot and cover them with water, and boil until you get the strength thoroughly out; then remove the herbs and strain the liquor; then cleanse the vessel and return the strained liquor, and boil slowly down to one pint; then add about one pound of rosin, and one pound of mutton suet. Continue to simmer down until the water is out. While the mixture is cooling you must stir it.

Application.—If the cancer be not raw, scarify it, and take a piece of thin cloth, half an inch larger in diameter than the cancer, and spread the salve over it, and apply it to the cancer at night; the next morning remove it and put on a good coat of powders with the salve only on the good flesh, so as to hold the powders on the parts which are raw, let the powders remain about thirty-six hours and so continue until the cancered flesh is all eaten out; if the dead flesh should not come away of itself, or sticks to the bone, you may hasten the operation by cutting it away before applying the powders. Be not alarmed at this medicine, for it will not waste away good flesh. After you know the cancer is killed, and all the cancered flesh is out and

cleaned off well, you must keep the salve on the cancered parts until cured up, keeping all way from the cancer from the commencement.

I am an old man, now nearly eighty-five years of age—and I wish the world to know the virtue of this medicine and the good it has done. Be ware of all counterfeits for there are many in existence. I have received many counterfeit receipts, to know if genuine, which had my name falsely signed. This is my reason for publishing this recipe. I let Dr. January of Murfreesboro, have a recipe and medicine, and request him to let the people know the good of it; but he has not complied with my request, neither will he give his medicine out.

I hope editors generally will copy this article for the good of the people, as the medicine is a sure cure.—*American Paper.*

TOUNSEND FUGETT

BELBUKLE, Bedford Co., Tenn.

IMPORTANCE OF OCCUPATION.—Not unfrequently have I heard women, who were surrounded by all the advantages that outward wealth can give, say, with sad and timid self-proach, "I ought to be happy. It is my own fault that I am not. But, I do not know how it is cannot get up an interest in anything." When I remind them that Richter said, "I have five proof perennial enjoyments, called employments," few have faith in such a cure for the inanity of life. But the only certain way to attain habitual content and cheerfulness is the active use of our faculties and feelings. As Somerville finds too much excitement and pleasure in her astronomical investigations, to be the poor stimulus of extravagant expenditure gossiping about her neighbours. Yet the astronomer discharges all womanly duties with beautiful propriety. She takes nothing from her family. She merely gives to science the hours which many women in the same state waste in idleness and dissipation. What can more charming than the example of Mrs. Huldevoting herself to the study of natural history to assist her blind husband in his observations. Or Mrs. Blake, making graceful drawings in her husband's studio, working off the impressions on his plates, and colouring them beautifully with her own hand?—*Mrs. Child.*

MATERNAL INFLUENCE.—The moral destinies of the world depend not so much upon institutions or upon education, as upon moral influence. The most powerful of all influences is the maternal. On the maternal character depend the mind, the prejudices, the virtues of nations: other words, the regeneration of mankind.—*Aime Martin.*

The following facts in physiology are curious and interesting: A man is taller in morning than at night to the extent of an inch, owing to the relaxation of the cartilages. The human brain is the twenty-eighth

f the body, but in the horse but a four-
undreth. Ten days per annum is the aver-
ge sickness of human life. About the age
f 36, the lean man generally becomes fatter,
nd the fat man leaner. Richter enumerates
00 distinct species of disease in the eye.—
he pulse of children is 180 in a minute; at
uberty it is 80; and at 60, only 60. Dr.
etom ascribes health and wealsh to water;
appiness to small beer; and all diseases and
rimes to the use of spirits. Elephants live
r two hundred, three hundred, and even
ur hundred years. A healthy full grown
ephant consumes thirty pounds of grain per
ay. Bats in India are called flying foxes,
d measure six feet from tip to tip. Sheep
wild pastures practise self-defence by an
ay in which rams stand foremost, in con-
rt with ewes and lambs, in the centre of a
allow square. Three Hudson's Bay dogs
aw a sledge, loaded with 300 pounds, fif-
en miles per day. One pair of pigs will
crease in six years to 119,160, taking the
crease at fourteen per annum. A pair of
cep, in the same time, would be but 64.
single female horsefly produces in one sea-
n, 20,080,320 eggs. The flea, grass-hopper
d locust jump 200 times their own length,
ual to a quarter of a mile for a man.—*Up-
r Canada Journal of Education.*

DR. HALL'S JOURNAL OF HEALTH ON
E WAY TO CURE A COLD.—Hall's *Jour-
l of Health* says, the moment a man is
ified that he has taken a cold, let him do
ee things:—1st, eat nothing; 2nd, go to
, cover up warm, in a warm room; 3rd,
nk as much as he can, and as he wants, or
much hot herb tea as he can, in three
es out of four he will be almost well in
rty-six hours.

f he does nothing for his cold forty-eight
rs after the cough commences, there is
hing that he can swallow that will by any
sibility, do him any good, for the cold,
s such a start, will run its course of about
rtnight, in spite of all that can be done,
what is swallowed in the mean time in
way of physic, is a hindrance, and not a

Feed a cold and starve a fever," is a mis-
vous fallacy. A cold always brings a
; the cold never beginning to get well
the fever subsides; but every mouthful
lowed is so much more fuel to feed the
, but for the fact that as soon as a cold

is fairly seated, nature in a kind of despera-
tion, steps in and takes away the appetite,
the commonest cold would be followed by
very serious results, and in frail people would
be almost fatal.

These things being so, the very fact of
waiting forty-eight hours, gives time for the
cold to fix itself in the system; for a cold
does not usually cause a cough until a day
or two has passed, and then waiting two days
longer gives it the fullest chance to do its
work before anything at all is done.

SCRATCHES IN HORSES.—This trouble-
some cutaneous disorder, it is said by corres-
pondent of the *N. E. Farmer*, may be cured
by washing the part affected with warm cast-
ile soap-suds, wiping it dry, and then bathing
it with a decoction of the leaves and twigs of
an evergreen plant called "Lamb-Kill," com-
mon on cold wet land, and a valuable medi-
cine in all diseases of the skin. A few thor-
ough applications will effect a cure, and no
dosing is necessary, though some attention to
the diet, that it be cool and loosening, should
be given in severe cases. Roots—potatoes
particularly—might form a part of the feed.

THE ENGLISH FARMER.—Unfortunately,
farmers have, like o'er people, a greater
sense of the faults o' others than of their
own. They are not conscious of their own
want of education and of their own awkward-
ness in many things; and yet they often en-
tertain a most profound contempt for town-
people. It would be better if they piqued
themselves upon their real merits and posi-
tion rather than on their being able to do a
few things which, living as they do in the
country, they cannot avoid understanding.
They really have a position and a character
to maintain, and be proud of. The English
farmer is a member of a most important class
of society. Living in the country, and in
the enjoyment of sun, and air, and fields, and
trees, without the wearing routine of labour,
which too often blinds the peasant to all
these blessings, and makes him walk amongst
them as if they were not; removed from all
the excitement of city life; enjoying a dis-
tinctly marked position, free from the tempt-
ation of moving up into a higher grade, and
so losing happiness and fortune, and all which
makes life sweet and honourable; living in
old manor-houses, occupied often from father
to son for centuries, with their quiet country
church, and honest invigorating recreations,
the farmer has the means of being one of the

most sober-minded, sensible, independent, and happy men in the realm. If he is not this, it is his own fault, or the fault of parents, or clergyman, or of some external circumstances. He might be an anchor and a principle of steadfastness to his country, and more useful, by far, in his quiet circle, than many bustling in larger spheres, and of greater pretensions.—*William Blake, by the Rev. W. E. Heygate.*

THE FREEDOM OF WALES.—The prophecy is still repeated, if not believed, that the Ancient Britons will not recover their freedom till they have brought back the bones of the old King from Italy. But this is a prophecy which is not likely to disturb the peace of the wearer of the crown of England, nor of the young heir thereto who bears the old title of Llewellyn—Prince of Wales. It would be as difficult to discover the bones of Cadwallader, as it would be to select a number of pure-blooded Britons sufficient to carry anything that remains of that monarch of blessed but sorrowful memory.—*The Book of the Princes of Wales. By Dr. Doran, F. S. A.*

COUNTRY GAITIES IN THE EIGHTEENTH CENTURY.—These were the great glories of the country; but lesser assemblies were established at many of those old market towns which have now dwindled into villages. It must have happened to some of our readers, in passing through such places, to have observed in the rambling, roomy inn, which, since the abolition of coaches, seems quietly mouldering away, the long and spacious apartment where these festivities were conducted. Hither a hundred years ago, to this obscure village, to this dingy room, now haunted by stale odours of tobacco, and abandoned to overseers and guardians, came all the youth and beauty and rank of ten miles around. We know of few things more calculated to touch a sanguine-minded man with momentary melancholy, than the sight of one of these old rooms. The local life, and mirth, and good fellowship seem to have so entirely departed; the utter dulness and desolation contrasts so forcibly with what the imagination conjures up; and it is so desperately hard to conjecture how the present landlord escapes bankruptcy; that we are glad to hurry away down the creaking old stair, past the bar where punch bowls once familiar to noble and knightly lips now shine uselessly, out into the open air and away

upon our journey. Such places seem un-
a spell, and we don't feel happy till we le-
them. Here, as we say, two or three tir-
in the year the country gentleman brou-
his wife and daughters; and it is easy to
that the cavalier who rode a dozen miles r-
morning to inquire after his partner of
previous evening, was paying no mere c-
pliment of gallantry, but that the lady
really lucky if she arrived at home with
misadventure of any sort. The servants
to be drunk; papa, perhaps, slightly fudd-
the roads deep, and narrow, and hilly;
night pitch-dark—here were surely plent
excellent reasons why a gentleman shoul
anxious about the object of his affectio-
he had seen her safe and sound next m-
ing.—*Universal Review.*

The Rockland (Me.) Gazette says th
subterranean retreat has been discovere
Megunticook Mountain, Camden.

A project is on foot in New York to
ply water through meters, on the same
ciple that gas is now supplied.

No less than three daily papers are
lished at Denver City, Pike's Peak—a
of less than five thousand inhabitants.

The omnibus receipts of London
week, ending October 10, were some \$6
an average of \$2,000,000 a year.

Editorial Notices, &c.

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nto, who is agent for the work.

PRAIRIE FARMER: *Chicago, Illinois.*—
ery & Co.

have the pleasure of acknowledging the
t, from the publishers, of several numbers
s well executed Weekly, which is a valua-
epertory of Western agriculture and the
nic arts. It has the largest circulation of
aper of its class in the West and North-
and is a valuable medium to farmers,
ers, nurserymen, and implement manufac-
Terms, \$2 per annum; 3 copies for \$5;
copies, one year and to one agent, \$9.

our enterprising farmers and implement
in Canada, we would strongly recom-
papers of this sort published in the United
which would furnish them at regular
ls with all that is going on in the wide
elating to their respective pursuits. Such
as the above, and the *Country Gentle-*
ublished by L. Tucker & Son at Albany,
Moore's Rural New Yorker, Roches-
Y.; and the *Michigan Farmer*, De-
ntain in every number, something which
er, gardener, and mechanic may turn to
cal account. What is more particularly
is to induce people to read, think, and

AMERICAN SHORTHORN HERD BOOK.—We are
glad to learn that Mr. Lewis F. Allan is engaged
in preparing a *fifth* volume of his well known
Herd Book of Durham Cattle. It is gratifying
to know that this valuable breed is so rapidly
spreading on this continent as to require every
few years an additional volume to record their
pedigrees. Shorthorn breeders in Canada who
desire to have their animals recorded in the
American Herd Book, should communicate *at*
once to Mr. Allan, Black Rock, N. Y., who is
desirous of giving any information, or to make
any corrections of errors that may have inad-
vertently crept into the former volumes. Pedi-
grees should be fully and precisely stated, and
written in a plain hand, paying special attention
to dates, and the correct spelling of proper
names. The new volume is to be issued in the
Spring, so that parties wishing to occupy space
in it, should communicate their intentions *im-*
mediately. The price to subscribers will be \$5.
Mr. Allan has copies of the 2nd, 3rd, and 4th
volumes on hand, which he will send to order by
Express for \$5 each; or \$5 50, by mail, post-
paid, in advance.

JOURNAL OF THE BATH AND WEST OF ENGLAND
SOCIETY. *London*: J. Ridgway. 1860.

We have been favored by the Secretary of this
venerable Society, which was established in the
year 1777, with a copy of its Transactions
for the current year. This Society was estab-
lished for the encouragement not only of agri-
culture but also of arts, manufactures, and com-
merce; thus resembling in its leading features,
our own Provincial Association. The volume
contains in addition to much local information
and routine matter, a number of well written
reports and articles having a general interest;
from which we shall hereafter borrow for the
information of our readers.

NORTH BRITISH REVIEW AND BLACKWOOD'S
MAGAZINE for November. L. Scott & Co.,
54 Gold street, New York.

We have received through Mr. Rowsell, Book-
seller, of this city, the November number of the
North British and Blackwood. The former,
under the new management, continues to im-
prove the already high literary standing of that
excellent Quarterly, while *Blackwood* having

for many years attained to the ordinary life of the highest class of periodicals, evinces as much vigour and freshness as characterized its earlier days. The following articles of the *North British*, will well repay the most careful perusal:—Modern Thought, its progress and consummation; The Disturbances in Syria; Leigh Hunt; The Spanish Republics of South America; Province of Logic and recent British Logicians; Lord Macaulay's place in English literature; American Humour; Revivals; The Martyrdom of Galileo; The Sicilian Game. *Blackwood* for November contains in addition to the continuation of its leading Tales and Romances of the highest literary merit, excellent articles on Civil Service Appointments; The Administration of India; The Courtesies of War; Dando, the oyster eater; Iron-clad Ships of War, &c.

The London Quarterly in Politics is Conservative; The Edinburgh, Whig; The North British, Free Church; The Westminster, Liberal; and Blackwood's Magazine, Tory. It must not be inferred however, from this statement, that party political articles constitute the greater portion of these world-renowned periodicals. To general readers they are especially adapted, and their pages are mainly filled with often elaborate articles from the best writers, on history, science, biography, commerce and political economy, jurisprudence, geographical discovery, embracing in short all subjects within the wide range of literature and science. Our purely agricultural readers will occasionally find in them most valuable papers treating on subjects directly belonging to their own pursuits. The four Reviews are each published quarterly; while Blackwood's Magazine appears monthly. Messrs. Scott & Co. pay the British Publishers for advance sheets, the result being that the Reprints are produced and circulated over this extensive continent within two or three weeks at the most of their first appearance in Britain, and at near one-fourth of the original price! These periodicals may be regularly obtained as they are published, of any respectable bookseller in the Province, and the commencement of a new year is a peculiarly fitting time for subscribers to commence. In such cases as the taking of the whole by individuals would be felt

inconvenient, we would recommend a few neighbors clubbing together and taking all five at the marvellously low price of \$10 per annum.—What a rich fund of mental recreation and improvement would thus be opened to them! The following are the terms:—

	Per ann.
For any one of the four Reviews.....	\$3 00
For any two of the four Reviews.....	5 00
For any three of the four Reviews.....	7 00
For all four of the Reviews.....	8 00
For Blackwood's Magazine	3 00
For Blackwood and one Review.....	5 00
For Blackwood and two Reviews.....	7 00
For Blackwood and three Reviews.....	9 00
For Blackwood and the four Reviews...	10 00

RURAL ANNUAL AND HORTICULTURAL DIRECTORY for 1861. Rochester, N. Y. Joseph Harris.

This is the sixth annual issue of this very useful publication, proceeding from the office of the well known *Genesee Farmer*, and containing articles of permanent interest to the farmer, gardener, mechanic, housewives, and rural readers generally. It contains 120 pages, illustrated by 80 well executed wood engravings, for the small sum of 25 cents per copy. We hail works of this kind among us as indicative of an improved, inquiring spirit among the great bulk of the agriculturists.

THE AGRICULTURIST FOR 1861.

Now is the time to forward subscriptions for the *Agriculturist* for 1861. We shall announce a list of money premiums in our next for the 15 or 20 largest lists of subscriptions forwarded prior to, say 15th February or thereabouts. The terms will be highly advantageous to Societies and agents.

The Agriculturist,

OR JOURNAL AND TRANSACTIONS OF THE B.
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 Backland, of University College, Toronto, and Hugh C. Thomson, Secretary of the Board of Agriculture, Toronto, whom all orders and remittances are to be addressed.

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