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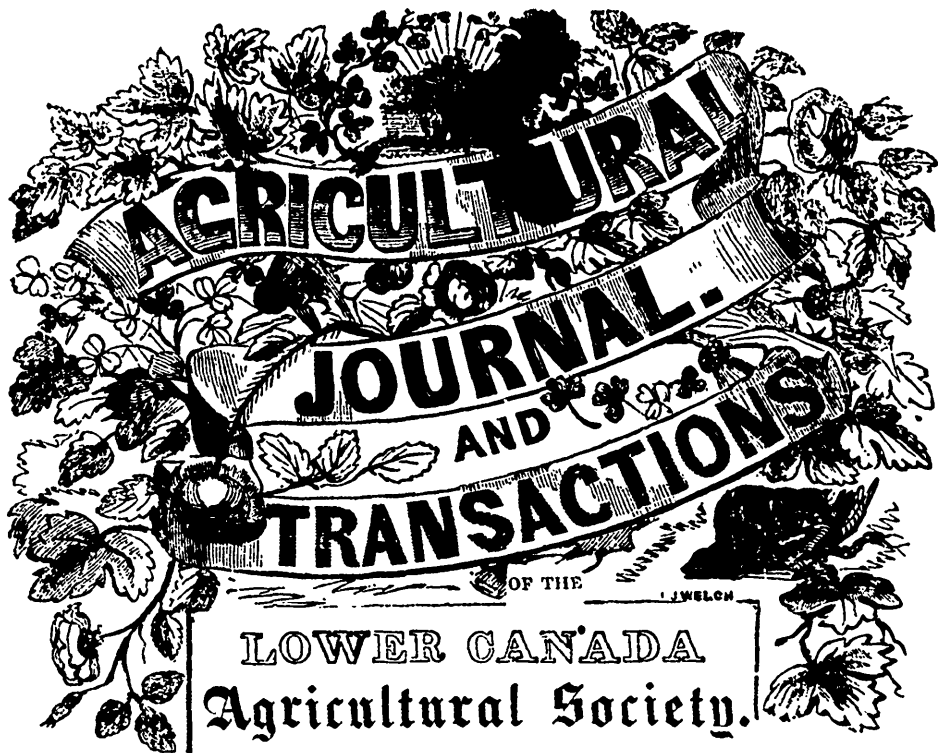
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AGRICULTURAL
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No. 2.

**ADVANTAGE OF RAILROADS AND
CANALS.**

There cannot be any mistake as to the great advantage of navigable waters, canals, and rail-roads to this vast country. It is by means of those, that the country can be opened up, and her resources made available to her population. These means of communication may not yield a large annual dividend immediately, but it is by their construction alone, that the country can be settled, and the produce of the settler's industry made valuable. We have a good example before us, in the result of the constructing the Erie Canal of the United States. It has been the means of producing almost incalculable advantages to the country through which it passes, for a distance of over 500 miles. The benefit of our own canals is already beginning to be manifest, and will soon prove the wisdom of those who favoured and advocated their construction. If British America

had only to boast of a grand rail-road from Halifax to Quebec, we should have reason to be proud of our position, and our connection with the British Empire. This would be completing the great connecting line between the British Isles and the centre of this valuable portion of the British Empire, and with our great inland water communications to the most Western part of Upper Canada, we certainly would not have any cause to be ashamed of our progress or condition, even situated as we are, so close to the great "go-a-head" population of the United States. There cannot be a doubt that the people of the United States, had they a rail-road to construct of equal importance and extent as that from Halifax to Canada, they would find means very soon to complete it. Why should we have any difficulty? We should be able to derive equal advantages from the construction of the rail-road as any other people would do. However parties may

question the benefit such a rail-road would be to the people of the British Isles, as well as to those of British America, we humbly conceive that there can be no question of the fact, that the advantages would be perfectly reciprocal. Easy and certain means of communication between the British Isles and British America, cannot fail of producing great advantages to both, and the general prosperity of British America must add to the prosperity of the British Isles. Time, we have no doubt, would prove, that the rail-road in question would produce all the advantages we could possibly anticipate to the British Isles and British America, and we hope we may be spared to see this great national work put in progress of construction by the aid of the British government.

To the Editor of the Agricultural Journal.

SIR,—Your very favorable notice of the communication of a ploughman in last number, in some degree induces the present, for next number, which may be followed, not continuously, but occasionally, perhaps, during the Winter months, on some Agricultural subject.

From the tenor of the maker of the Journal, on ploughs and ploughing, which I have observed, from the October number of last year, in an article ending with "our object in writing this, is to induce our ploughmen to become as eminent and scientific, as they are expert workmen," up till the last number. Your views on one of the two points, which you do not agree with, were not surprising, but anticipated.

It can be demonstrated on paper, as well as in the field, that the proportions of furrow given to young ploughmen to aim at as a standard, for *lea* ploughing, viz.: 6 inches deep, by $7\frac{1}{2}$ wide, can be set to the most perfect position, and to the satisfaction of the most fastidious eye on the matter. Or, in other words, these proportions of furrow, which exceed in depth the proportion of two-thirds of its breadth, can be set with sock and coulter sides at equal angles to the horizon, measuring the same both ways, and so *packed* and closed, as to prevent the

possibility of seed being lost, and the vegetation of grass. Certainly, a furrow above measure, or too square, such as nine by nine, cannot be gyrated farther than the perpendicular, and consequently stands on edge, unenclosed.

But though it is not uncommon, or rare, to find ploughs that leave furrows much less square, than the one given as a standard, standing on edge, it does not necessarily follow, that it is impossible to make perfect ploughing with the squarer proportions. If these proportions are held, and placed properly, the fault lies in the trim of plough. It may be laid down as an axiom, that the plough which will manage properly the squarest furrow is the best for *lea*; but good holding may be bad ploughing, since the truer the proportions of furrow held, the worse the ploughing, if the plough be not trimmed to work the narrow and deep kind of furrow. First class ploughmen are more apt to make bad ploughing with a bad plough, than the inferior class are, because the former, knowing comparatively better the advantages of the narrow and deep dimensions, and detesting the flat sort, he goes beyond the powers of the trim of his implement; while the latter, though less skilful, takes the best of the two faults, and lays it flat.

But since it is admitted that that style is best, which gives the minutest division of soil, and closes the furrow properly, hopes may be entertained of gaining those over to the style which they cannot but admire in ignorance of the means to attain it, but which, on knowing, they deprecate as false and ruinous. Strange inconsistency—analagous to desiring a gigantic superstructure, and prescribing a tiny foundation.

This hue and cry against square ploughing, or rather against that deep cutting on landside, and other things increasing the draught essential, to secure it perfectly, is of English origin, arising from the use of wheel ploughs, and testing the efficiency of ploughs by the dynamometer, which criterion, more than all things put together, creates more nonsense and excitement than common sense can see through, and leads them out of the principles of good ploughing. Lightness on draught is desirable, so far as it does not interfere with the efficiency or perfection; but when it so engrosses the subject as to

influence a preponderance over all other considerations, it is destroying of all knowledge on the art. In Scotland, the English kind of ploughing passes merely for an imitation of good ploughing. In England, the *swing ploughs* used are constructed to please the friends who rest all criterions of efficiency on the dynamometer, and the wheel ploughs cannot set a furrow: so neither of the English ploughs can manage but common furrows, such as 5 x 8, 6 x 9, 7 x 10, which will not at all be accepted in Scotland in lea-ploughing. King's and Ransome's swing ploughs—at present the best England makes—were at one time the only kind used in Scotland, but the superior ploughs of the West, from Wilkie's original improvements, have gradually progressed to the East, and, in their course, are not leaving a solitary instance of the Ransome kind that it ever existed there—notwithstanding all the ludicrous attempts of the East to suppress the invasion; but the matches told a woeful tale to the implement of the Eastern counties, by the implements of the wild moors of the West beating them hollow off the ground; but the time is not far distant when the English style will change, and wheel ploughs become practically unknown in England.

At present, however, from the scope given to improvement by such as the Highland and Agricultural Societies of Scotland, theoretical men are judges of mechanical Agriculture implements, and follow the proper notions sometimes a little in their decisions, and thus influence agricultural implement makers to depart from their better judgment, for interest sake, in the construction of their implements. I will here give two cases of both times at which the Highland Agricultural Society's Show was held at Glasgow, in 1844 and 1850.

The Grays' of Addington, along with many others, competed for the Society's prize, for the horse plough of light draught, and won the prize. I remember well of that in 1844, when standing with one of the sons, with whom I was well acquainted, how he chuckled to himself and laughed at the many criticisms of the many farmers respecting the merits of the premium plough; as to its qualities for lea ploughing, each had some objection, such as the sock too flat, the coulter

not plum enough one way, and too plum another, and the mould board too baul or convex, and altogether a shade too light. Unable to contain himself longer, he wheeled round, giving me a *dump with his elbow*, and saying in a merry mood:—"They're right enough, but she *wasna* made for *matching*, but was made for light draught for the dynamometer," and perhaps through this very plough he obtained many orders. But in making or mounting a plough for a *crack* ploughman, for catching prizes, how different the construction and trim in the superficies that gives the results! Then, at the same Society's Show, held last July in Glasgow, the same kind of farce was acted over again, which I here quote from a letter of a friend—a blacksmith, and judge on the matter he speaks of. Respecting the implements, he says:—"The Glasgow's were all beat with the ploughs. The plough that got the first prize was of the class of ploughs, as Smalls, with a loug convex board—the sock horizontal with the sole—and the coulter in plum with the landside plane. She may do for fallow or red land, but for work that requires *setting*, such as lea, she will be a vexation. At a glance, I saw she was nothing for particular lea, but I examined her properly for satisfaction. The owner and exhibitor was explaining its properties to a number of farmers, but one of them questioned him about its lea working qualities, and doubted much whether it would plough that well. The exhibitor said it had beat all the rest, and besides it was *easier drawn*. I then put in my word, and asked, if that was a great improvement? He replied, I was not acquainted with ploughs, or I would never have asked that. I said, I was that much acquainted with the subject, that I could give him this strange piece of information, that its lightness of draught, from its construction, constituted its defects for the lay ploughing, and was no improvement at all, but rather an overlook, and a very ignorant one, of the judges, and that it, nor any of its sort, that is so easy drawn, could no more plough a *round ridge of lea* properly, than it could fly in the air. He then said he'd bet £50, that it would plough old lea, any place in Scotland, as well as any plough on the Show ground. Well, said I, here's one that I'll take, (I did not

know whose it was at the time, but judged from its looks to be superior—it was one Clark's of Blantyre, and if it does not beat your's, I'll lose all that I am worth, and eat it to the bargain, after all is over. They laughed the man off the ground—he would not stand. After the exhibitor was off, Mr. Clark, and a number of men, asked me how I knew so well: that I was surely a smith, and was not like one. I told them I was a smith. Well, said he, give me your address, I must call on you some time. You know things about ploughs that I never heard any one could speak about." There is a significant difference in these two exhibitors. The one of 1844 would not defend his implement except on its dynamometer view; and the one of 1850 attempted to defend his, as best, in every respect. The reason was, the winner of 1844 belonged to the West of Scotland, where ploughing is known, and the other from the East contaminated about the border, and English humbug about light draught. I have never seen any of the English wheel or swing ploughs working, but knowing the kind of ploughing that is most desirable, and the impossibility of the English construction to manage these kinds of furrow, and knowing well that a swing plough, trimmed to the highest pitch of furrow, workable by the English wheel and swing ploughs, can be made to go with as little guiding as any wheel plough. I therefore believe, it would only be renewing farces to solace absolute drejudice, to revive or institute demonstrations, (falsely so called) for either the wheel or swing ploughs of England to attempt trials with the immoved Scotch swing plough, is entirely out of place.

Much more might be said in illustration of the comparative merits of the obtuse and acute style of ploughing, relative to England and Scotland, each of which claim theirs as being the best; but perhaps enough has been said of the nature of the debated styles to produce a verdict against the English. Being a Scotchman, it is no reproach to have a bias towards Scotland; but divesting all partiality in that respect, and judging the merits of the relative styles adopted by the two countries, I must say that, in this, England is far behind Scotland, and has yet to learn the principles indispensable to perfect ploughing of *lea* land. The most perfect

style, however, like all rules, is liable to some objections under certain circumstances; these may in a future paper be examined, in connection with things, the examination of which should, perhaps, precede it. Mean-time, however, I may say a few words now, of the objections to allowing ploughmen all the means they possess of making their work, at matches, as good as they possibly can, being restricted to Time. It is almost impossible to show clearly, any persons who have not followed the plough, the propriety of not doing so; but ploughmen, in every-day work, intuitively see the fallacy and ultraism of the exertions in question. Rest assured no ploughman will, if he can possibly avoid it, or help it, bother and vex himself by touching his work with anything but his plough; but if obstructions of any kind renders it a duty to resort to it, it should be done. "A stitch in time saves nine," and it is in this view that the ploughman should be allowed to arrange any bad place when it occurs, to prevent interruption and labour creation afterwards, to him or his employer.

Why, at matches, tolerate or rather prescribe a declension, which every common sense farmer deprecates in his every-day common work at home? What! a Society for the elevation of the art, exacting conditions, calculated to defeat its purpose! It reminds me of a "Highland Cure" resorted to, to do away with the nuisance which the injunction in question has the natural tendency to foster, related in "The Schoolmaster," which, from being pertinent and interesting to young ploughmen, I quote in full, notwithstanding its length: "A farmer in the Highlands had a very careless servant, and from the artful manner in which he concealed his faults, it was with considerable difficulty, and not till serious losses had ensued, that they could be discovered. One of his chief crimes consisted in his reckless management of the plough. He did not consider it of much importance whether the soil was regularly turned up or not; he thought it enough if he got the surface to bear an even and proper appearance, so as to conceal the blemishes that were below. With this view, when his plough stumbled upon any impediment, or *jumped* over a part of the furrow, which it ought to have turned

up, in the next round or *bout* he took care to make the plough run so deep as to turn up a sufficient quantity of earth, both for the present furrow, and to cover the part he had previously leaped over. This was a very common occurrence with him, and he seemed to exult in the execution of the deception, for on its completion he was known frequently to exclaim, "That *haps* that." His master had, in consequence, suffered considerable detriment. He had tried every means he could think of for reclaiming his servant from the error of his ways, but all in vain, and at last he resolved to dismiss him. Before putting this *ultimatum* into execution, however, he wished to make trial of an experiment which had not hitherto occurred to him. One day, while the servant was ploughing, and pursuing his usual practice of happing, or covering, his master quietly followed him down one of the furrows. He had not proceeded far when several minor *jumps* occurred. At last, the raising and downfall of a great quantity of earth, which extended over a large scar, caused the servant to exclaim, with much emphases, "That *haps* that." His master immediately seized him by the collar, took his bonnet from his head, and, with a cane, inflicted a smart blow on the cerebellum. The thunderstruck culprit stood amazed, and it was sometime before either opened their lips. At last, the master placed the bonnet on the poor fellow's bruised head, and staring him in the face, said, "That *haps* that." This practical lesson had the desired effect, and reclaimed the servant from his besetting sin." Highland Cure, *versus* Canadiam Implement! Of any matches I have ever witnessed, (and I've seen not a few,) competitors have not all equal chance—always a something—a hollow to go through—a hill to go over—a *gaw* to cross—a side-lying ridge—a steep *furrow*—a *flanked ridge*—and an ill *fur* to *fur* in. In the face of such, which will occur in almost any lands that can be abated, it is, to say the least, ridiculous, the exactions in question. But with restriction to *time*, a sufficient allowance to do the work well, and no more, almost all restrictions besides may be laid aside, as the precedents of the old country demonstrate that any means used allows ample time to finish the lots in and within the specified time, as *the*

time is the best incentive to ingenuity for the proficiency and perfection of the art.

A PLOUGHMAN.

To the Editor of the Agricultural Journal.

SIR,—I willingly avail myself of your kind permission, to discuss in the columns of the Journal, "The best means to adopt, in order to promote the improvement of Agriculture in Lower Canada." The publication of a Journal such as the present, is, no doubt, one means, and it is good in proportion to the extent of its circulation; but the question is, are there no other means and of a more popular nature? I pass over Agricultural Schools and Model Farms, as experiments, of which we do not possess sufficient information, to justify us in recommending them to such a country as Lower Canada, and I will confine my remarks entirely to Exhibitions. An Annual Agricultural Exhibition, conducted under the auspices of the Lower Canada Agricultural Society, appears to me, to be more required than anything else, and to which there would be no difficulty in obtaining support, as I suppose the character of the Society would be considered a sufficient guarantee of good management, and that the judges would be selected from persons competent to fill the office.

We certainly have our County and District Exhibitions, but it is too well known these Shows are conducted in a most ignorant and inefficient manner; in this neighbourhood, I can answer for this, and according to the report of the Journal for November, the District of Montreal appears to be in an equally benighted condition. The *London Economist* of the 23d November last, in reference to the last District Show of St. Johns, describes your account of it as bespeaking "a very rude "state of Agriculture in the District," and instances the Exhibition as a proof that "backward as our own husbandry is in "many wide Districts, we have nothing so "slow as that which prevails abroad."

This is all true. Our Agricultural Exhibitions, as at present conducted, are a source of very slight advantage to the country, and afford little more than another proof of our total want of knowledge, in connection with Modern Farming. The plan I therefore advocate, is to petition the Legislature to do

away with the County Societies altogether, and to grant their monies: 1st. to increase the amounts granted to the District Societies, and, 2ndly., for the establishment of an Annual Lower Canada Provincial Show.

The grounds on which I would support this petition, are, that the counties do not contain, within themselves, persons competent to conduct a society, the total absence of the requisite number of judges, and that these societies are too local, and too much under the influence of party, to be of much public advantage. In the preparation required between the Farmer and the Provincial Show, it is necessary he should have an opportunity of trying his strength somewhere, this would be afforded him by the District Shows, and by an increase of their grants, there would be greater competition and greater difficulties in putting in force the dishonest practices, too often seen at the County Shows.

The Provincial Show to be alternately at Sherbrooke, Montreal, Three Rivers and Quebec, would act as a model of good management for the District Societies, and would be a means of instructing young judges in the merits of the different breeds, and thereby enable them to form and mature their judgment in a matter in which they must necessarily be very ill-informed.

Unless some means of this kind are adopted, I can see no probability of any very rapid agricultural improvement in Lower Canada, the great improvements in farming have been induced principally by well conducted Exhibitions, and so long as this branch of High Farming is neglected I have no hopes for the future. I cannot believe the publication of the Journal is the best and only course to be adopted by the Directors of the Lower Canada Agricultural Society; book farming is very well in conjunction with practice, but book farming alone can never make a habitant a judge of Lincolnshire Long Wools or South Downs, and without judges you can have no Exhibitions of any value, and without Exhibitions you can have no permanent Agricultural Improvement. Let the Agricultural Society of Lower Canada arise from its lethargy, show symptoms of vitality and by the aid of an influential body of such a nature, much may be done, but the want of means is no excuse for the

want of energy, *aide toi, Dieu t'aidera* is good French at Paris, and not bad advice on the present occasion.

I have the honor to be,
Mr. Editor,

Your most obedient servant,

QUEBEC.

December, 23rd, 1850.

To the Editor of the Agricultural Journal.

SIR,—I have long wished to obtain a Stump Extractor of strength, simple construction and at small cost. At page 87 for 1849, a description of one is given, but it appears to be complicated and the cost too great for small farmers. At page 377, same year, another description is given of an extirpator, which is said to be simple and the cost only £5. I imagine this latter is the one which was awarded the first prize at the late Industrial Exhibition in Montreal, made by N. St. Onge, St. Leon. Can you or any of your correspondents inform me if this last or any other equally simple and low priced machine for extracting stumps is for sale in Montreal?

I am, Sir,

Your obedt. servt.

AN ENQUIRER.

W. Evans, Esq.

In reply to "An Enquirer" we beg to state that the Stump Extractor of Mr. St. Onge, which obtained the prize at the Montreal Exhibition, is the only one we have seen in Montreal and may be had at Mr. Hagar's Hardware store. The one we referred to in the Journal in 1849, we have no doubt, is very superior, from the description given of it by Mr. Taché, M. P. P., but we have not seen it, nor do we believe it is to be had in Montreal. The price of Mr. St. Onge's machine is twenty dollars.

THE JERSEY OR ALDERNEY COW.

The young cow-keeper, especially if he is of the middle or upper classes of the community, and his land or other facilities for cow-keeping are of small extent, will naturally remember the Jersey, or, as it is improperly called, the Alderney cow—so small, so docile, so beautiful—and yielding such delicious milk and cream. The best of these

cows, however, bear a much higher price than is within the means of many persons : and, besides, her yield of milk is no so copious in *measure* (though rich in quality) as that of cows of other breeds. As, however, many, into whose hands this work may find its way, will have facilities for keeping this beautiful animal, we can hardly, perhaps, take a better course than to hear the evidence of a distinguished Jersey cow-keeper on the points and successful treatment of this excellent little breed of cows, since so much of the matter which applies to this cow will be found valuable in the selection and management of all others. The conclusion, then, of Colonel Le Couteur, of Belle Vue, in the Island of Jersey (*Jour. R. A. S.*, vol. v., p. 43) is, that "the breed of cattle, familiarly known throughout Britain as the Alderney, and correctly termed in the article Cattle, of the 'Library of Useful Knowledge,' 'the crumpled horned,' was, it is conceived, originally Norman, as cows very similar to them in form and colour are to be seen in various parts of Normandy, and Brittany, also; but the difference in their milking and creaming qualities is really astonishing, the Jersey cow producing nearly double the quantity of butter." This increased value of the breed, however, has been the result of long and careful attention to the selection of the animals possessing the best qualities.

"Ten years," adds the Colonel, "have elapsed since the attempt was first made by fixed rules to improve the form and quality of the Jersey cow. A few gentlemen, presided over by the then Lieutenant-Governor, Major-General Thornton, selected two beautiful cows, with the best qualities, as models. One of these was held to be perfect in her barrel and fore-quarters; the other equally so in her hind-quarters. From these two the following points were laid down to be the rule of governing the judges in all the cattle-shows of the Jersey Agricultural Society. The accuracy of this arrangement is proved by the fact that no deviation from it has been made, the experience of ten years having only added to the scale the points for general appearance and condition.

Scale of Points for Cows and Heifers.

- I.—Breed, on male and female sides, reputed for producing rich and yellow butter..... 4
- II.—Head small, fine, and tapering; eye full and lively. Muzzle fine and encircled with white; horns polished and a little crumpled, tipped with black; ears small, of an orange colour within..... 8
- III.—Back straight from the withers to the setting of the tail; chest deep and nearly of a line with the belly..... 4

- IV.—Hide thin, moveable, but not too loose, well covered with fine soft hair, of good colour..... 2
 - V.—Barrel hooped and deep, well ribbed home, having but little space between the ribs and hips; tail fine, hanging 2 inches below the hock..... 4
 - VI.—Fore legs straight and fine, thighs full and long, close together when viewed from behind; hind legs short, and bones rather fine; hoof small; hind legs not to cross in walking... 2
 - VII.—Udder full, well up behind; teats large and squarely placed, being wide apart; milk veins large and swelling..... 4
 - VIII.—Growth..... 1
 - IX.—General appearance..... 1
- Perfection for cows..... 39

"The Jersey cow is a singularly docile and gentle animal. In those bred on the heights of St. Ouen, St. Brelade, and St. Mary, there is a hardness and a sound constitution that enable them to meet even a Scotch winter without injury; those bred in the low grounds and rich pastures are of a larger carcass, but are more delicate in constitution. Of the ancient race it was stated; perhaps with truth, that it had no tendency to fatten; indeed some cows of the old breed were so ungainly, high-boned, and ragged in form, Megs Merrilies of cows, that no attempt to fatten them might succeed—the great quantities of milk and cream which they produced probably absorbing all their fattening properties. Yet careful attention to crossing has greatly remedied this defect. By having studied the habits of a good cow with a little more tendency to fatten than others, and crossing her with a fleshy well-conditioned bull of a race that was also known to produce quality of butter, the next generation has proved of a rounder form, with a tendency to make fat, without having lost the butyraceous nature. Some of these improved animals have fattened so rapidly while being stall-fed, from the month of December to March, as to suffer in parturition, when both cow and calf have been lost; to prevent which it is indispensable to lower the condition of the cow, or to bleed, in good time. Such animals will fatten rapidly. Their beef is excellent; the only defect being in the colour of the fat, which is sometimes too yellow. It is now a fair question, whether the improved breed may not fatten as rapidly as any breed known?"

"The grand desideratum," continues Col. Le Couteur, "is to discover a breed that will be useful to the grazier, the dairyman, and the small farmer. In so small a spot as Jersey, it is difficult to cross the breed essentially—a great step towards it is gained

by crossing cattle bred in the low rich pastures with those of the exposed hills on the western or northern coast: these being smaller, finer boned, of a more hardy constitution, and feeding on a short rich bite, impart strength of constitution and hardihood to the larger and more delicate animals of the sheltered low grounds.

"It is believed that cattle are generally more healthy and free from epidemics here than in most countries. This may be attributable in some measure to the saline particles which, being so frequently in suspension over the island, are afterwards deposited on the herbage, and tend to its salubrity. After heavy gales, it is frequently found that the grass all across the island has a strong saline flavour. So partial are cattle to this flavour, that they will greedily devour grass which has been watered with sea-water which they previously rejected. Two pipes per acre, spread from an ordinary watering-cart, or from a pipe which may be made to pour into a long deal box perforated with holes, will be found of great utility where sea-water or salt can be obtained at small cost.

"The Jersey farmer treats his cow with gentleness and care; it might be more correct to say that his wife does so. On good farms she is usually housed at night after the end of October to the end of February, if heavy rain, hail, or snow prevail. It is deemed to be healthful to give a cow a short run daily through the winter, excepting in stormy weather. At this season, which is usually several degrees warmer than in the mildest part of Devonshire, she is fed with a certain portion of straw, from 10 lbs. to 20 lbs. of hay, with about 10 lbs. to 20 lbs. of parsnips, white carrots, turnips, or mangel-wurzel. The small portion of grass which she may pick up in the winter, with the above quantity of food, enable her to produce a rich and well-coloured sample of butter till within six weeks of parturition. At this period, which is usually regulated to take place about the month of March or April, just when the cow, being in full milk, may soon be placed on the fresh spring pasture in April or May, she is an object of extreme care. On calving she is given a warm potation of cider, with a little powdered ginger. Quayle hints that pet cows are further indulged with a toast in their caudle. The calf is taken from the cow at once, and fed by hand. It may be well to advise that, on the first occasion of calving, the calf should be allowed to draw the cow fully; for no milking by hand will so completely empty the udder, nor cause the milk-veins to swell to their full development, as will the suction of the calf.

"Some of the early meadows produce rich grass in March; but the general flush of grass, which comes on generally late in April, is the period when the Jersey farmer looks forwards with anxiety.

"The cow is then tethered to the ground by means of a halter five or six feet long, this is appended by a ring and swivel to a chain, which encircles her horns, closed by a ring and bar; the other end of the halter is fastened to a chain 6 or 8 feet long, which is connected by a wooden mallet. The cow having this circular range of 12 feet or more, is compelled to eat it clean. She is usually moved thrice a day, and milked morning and evening; on many farms at mid-day also.

"Under this system, the writer has owned four cows that produced eight-and-forty pounds Jersey, or above 51 lbs. imperial weight, of rich yellow butter per week, in the month of May and part of June.

"In very hot weather, in July or August, it is advisable to shelter the cow from the heat and flies; otherwise these tease cows to such a degree, by forcing them to run about incessantly, that they have no time for repose or for chewing the cud; they, in consequence, afford much less milk or cream.

"It was anciently thought that cream from the Jersey cow was too rich for making cheese. M. Le Feuvre of La Hague, who has a fine breed of cows, tried the experiment two years since, and succeeded to admiration. It was made from the pure milk, cream and all, as it comes from the cow. It was found that the quantity of milk that would have produced a pound of butter afforded 1½ lb. of cheese.

"From the quantity of milk which produced a cheese of 20 lb. weight, the *drainings* of the curds and whey, on being churned, yielded 4 lbs. of butter. This butter was of an inferior quality when eaten with bread, but was superior to any other for the making of pastry; it was peculiarly hard, and of excellent texture for such use in hot weather. The writer has tasted cheeses from Mr. Le Feuvre's farm quite equal in quality to the richest double-Gloster.

"On one or two farms besides General Touzel's, butter is made from clouted cream in the Devonshire mode; but as this is not peculiar to Jersey, it is not noticed further than that 10 lbs. of butter are usually made in five minutes by this process. The usual way of procuring the cream is by placing the milk in pans about 6 inches deep—the glazed shallow earthenware having taken the place of the unglazed deep vessels.

"It is admitted that the richest milk and cream are produced by cows whose ears have a yellow or orange colour within. Some of the best cows give 26 quarts of milk in twenty-four hours, and 14 lbs. of butter from such milk in one week. Such are rare. Good cows afford 20 quarts of milk daily, and 10 lbs. of butter weekly, in the spring and summer months. Butter is made every second or third day.

"Jersey butter, made with the cows are

partially fed on parsnips, or white carrots and grass, in September and October, when salted and potted, will keep till the following spring, preserving as well as Irish butter, with a much less rank flavour. The price of the best Jersey cows, including points and quality, is from £20 to £30; and up to £20s is given for the best heifers. Yearling bulls, of the best breed and points, from £10 to £15."

In the choice of a cow let me very earnestly impress upon the purchaser that her *youth* must, be one chief consideration, for which hardly any other advantage will compensate. As a cow increases in years, her milk decreases in value, and yet her appetite increases at an equally rapid rate. Then again, when she is to be fatted off for the butcher, there is no amount or quality of food which can be given to an old cow that will remunerate her owner for the expense. Buy, then, a young cow, and dispose of her in some way or other (without she is very good for milk and butter (before she is more than six or seven years old, and just before calving.—*Modern Dairy*.

AGRICULTURE IN 1685.

The fact that the sum raised in England by taxation has, in a time not exceeding two long lives, been multiplied thirty-fold, is strange, and may at first sight seem appalling. But those who are alarmed by the public burdens may perhaps be re-assured when they have considered the increase of the public resources. In the year 1685, the value of the produce of the soil far exceeded the value of all the other fruits of human industry. Yet agriculture was in what would now be considered as a very rude and imperfect state. The arable land and pasture land were not supposed by the best political arithmeticians of that age to amount to much more than half the area of the kingdom. The remainder was believed to consist of moor, forest, and fen. These computations are strongly confirmed by the road books and maps of the seventeenth century. From these books and maps it is clear that many routes which now pass through an endless succession of orchards, hayfields, and beanfields, then ran through nothing but heath, swamp, and warren. In the drawings of English landscapes made in that age for the Grand Duke Cosmo, scarce a hedgerow is to be seen, and numerous tracts, now rich with cultivation, appear as bare Salisbury Plain. At Enfield, hardly out of sight of the smoke of the capital, was a region of five and twenty miles in circumference, which contained only three houses and scarcely any inclosed fields. Deer, as free as in an American forest, wandered there by thousands. It is to be remarked, that wild animals of large size were then far more numerous than at present. The last wild boars, indeed, which had been preserved for

the royal diversion, and had been allowed to ravage the cultivated land with their tusks, had been slaughtered by the exasperated rustics during the license of the civil war. The last wolf that has roamed our island had been slain in Scotland a short time before the close of the reign of Charles the Second. But many breeds, now extinct or rare, both of quadrupeds and birds, were still common. The fox, whose life is, in many counties, held almost as sacred as that of a human being, was considered as a mere nuisance. Oliver Saint John told the Long Parliament that Stafford was to be regarded, not as a stag or a hare, to whom some law was to be given, but as a fox, who was to be snared by any means, and knocked on the head without pity. This illustration would be by no means a happy one, if addressed to country gentlemen of our time: but in Saint John's days there were not seldom great massacres of foxes, to which the peasantry thronged with all the dogs that could be mustered: traps were set; nets were spread; no quarter was given; and to shoot a female with cub was considered as a feat which merited the gratitude of the neighbourhood. The red deer were then as common in Gloucestershire and Hampshire as they now are among the Grampian Hills. On one occasion Queen Anne, on her way to Portsmouth, saw a herd of no less than five hundred. The wild bull with his white mane was still to be found wandering in a few of the southern forests. The badger made his dark and tortuous hole on the side of every hill where the copewood grew thick. The wild cats were frequently heard by night wailing round the lodges of the rangers of Whittlebury and Needwood. The yellow-breasted martin was still pursued in Cranbourne Chase for his fur, reputed inferior only to that of the sable. Fen eagles, measuring more than nine feet between the extremities of the wings, preyed on fish along the coast of Norfolk. On all the downs, from the British Channel to Yorkshire, huge bustards strayed in troops of fifty or sixty, and were often hunted with greyhounds. The marshes of Cambridgeshire and Lincolnshire were covered during some months of every year by immense clouds of cranes. Some of these races the progress of cultivation has extirpated. Of others the numbers are so much diminished that men crowd to gaze at a specimen as at a Bengal tiger, or a Polar bear. The progress of this great change can nowhere be more clearly traced than in the Statute Book. The number of inclosure acts passed since King George the Second came to the throne exceeds four thousand. The area inclosed under the authority of those acts, exceeds, on a moderate calculation, ten thousand square miles. How many square miles, which were formerly uncultivated or ill cultivated, have, during the same period, been fenced and carefully tilled by the proprietors, without any application to the legis-

lature, can only be conjectured. But it seems highly probable that a fourth part of England has been, in the course of a little more than a century, turned from a wild into a garden. Even in those parts of the kingdom, which at the close of the reign of Charles the Second were the best cultivated, the farming, though greatly improved since the civil war, was not such as would now be thought skilful. To this day no effectual steps have been taken by public authority for the purpose of obtaining accurate accounts of the produce of the English soil. The historian must therefore follow, with some misgivings, the guidance of those writers on statistics whose reputation for diligence and fidelity stands highest. At present an average crop of wheat, rye, barley, oats, and beans, is supposed considerably to exceed thirty millions of quarters. The crop of wheat would be thought wretched if it did not exceed twelve millions of quarters. According to the computation made in the year 1696 by Gregory King, the whole quantity of wheat, rye, barley, oats, and beans, then annually grown in the kingdom, was somewhat less than ten millions of quarters. The wheat, which was then cultivated only on the strongest clay, and consumed only by those who were in easy circumstances, he estimated at less than two millions of quarters. Charles Davenant, an acute and well informed though most unprincipled and rancorous politician, differed from King as to some of the items of the account, but came to nearly the same general conclusion. The rotation of crops was very imperfectly understood. It was known, indeed, that some vegetables lately introduced into our island, particularly the turnip, afforded excellent nutriment in winter to sheep and oxen; but it was not yet the practice to feed cattle in this manner. It was therefore by no means easy to keep them alive during the season when the grass is scanty. They were killed and salted in great numbers at the beginning of the cold weather; and, during several months, even the gentry tasted scarcely any fresh animal food, except game and river fish, which were consequently much more important articles in housekeeping than at present. It appears from the Northumberland Household Book that, in the reign of Henry the Seventh, fresh meat was never eaten even by the gentlemen attendant on a great Earl, except during the short interval between Midsummer and Michaelmas. But in the course of two centuries an improvement had taken place; and under Charles the Second it was not till the beginning of November that families laid in their stock of salt provisions, then called Martinmas beef. The sheep and the ox of that time were diminutive when compared with the sheep and oxen which are now driven to our markets. Our native horses, though serviceable, were held in small esteem, and fetched low

prices. They were valued, one with another, by the ablest of those who computed the national wealth, at not more than the fifty shillings each. Foreign breeds were greatly preferred. Spanish jennets were regarded as the finest chargers, and were imported for purposes of pageantry and war. The coaches of the aristocracy were drawn by grey Flemish mares, which trotted, as it was thought, with a peculiar grace, and endured better than any cattle reared in our island the work of dragging a ponderous equipage over the rugged pavement of London. Neither the modern dray horse nor the modern race horse was then known. At a much later period the ancestors of the gigantic quadrupeds, which all foreigners now class among the chief wonders of London, were brought from the marshes of Walcheren; the ancestors of Childers and Eclipse from the sands of Arabia. Already, however, there was among our nobility any gentry a passion for the amusements of the turf. The importance of improving our studs by an infusion of new blood was strongly felt; and with this view a considerable number of barbs had lately been brought into the country. Two men whose authority on such objects was held in great esteem, the Duke of Newcastle and Sir John Fenwick, pronounced that the meanest hack ever imported from Tangier would produce a finer progeny than could be expected from the best sires of our native breed. They would not readily have believed that a time would come when the princes and nobles of neighbouring lands would be as eager to obtain horses from England as ever the English had been to obtain horses from Barbary. While these great changes have been in progress, the rent of land has, as might be expected, been almost constantly rising. In some districts it has multiplied more than tenfold. In some it has not more than doubled. It has probably, on the average, quadrupled.—*Macaulay's History of England.*

OPINIONS ON PRACTICAL AGRICULTURE IN THE HUNDRED OF WIRRAL.
BY THE WIRRAL AGRICULTURAL IMPROVEMENT SOCIETY.

MANURE.

As draining in this district is the foundation for good and profitable husbandry, and manure is the chief material with which all future operations are to be carried on, it is a part of the business requiring the most serious attention; and as the demand for it is constant and heavy, it behoves all farmers to study, first, how to acquire the greatest quantity and best quality at the lowest cost; and secondly, the best application of it.

All farmers being partly or entirely their own manufacturers of this article, it becomes a consideration what description of stock make the most valuable manure, and the

Society is of opinion that, supposing all live alike, horse manure is so, because it is the most stimulating, and equally as lasting as the others; next will be pig manure, and, of other cattle, that of young stock perhaps the least so, because they absorb a greater quantity of bone into their system, though, possibly, a less quantity of other valuable ingredients; and it seems likely that a mixture of all ages and kinds may be advantageous, though this is a question which chemists could best determine; they, however, have come to the conclusion that it will not answer to keep any kind of animal solely for its manure but that description which will best consume your produce and make the best money return. And it is thought to be cheaper and better to buy manure than to keep stock expressly to make it, especially if you have also to purchase litter for them.

Straw is the necessary material to make manure with at home, but contains very little virtue in itself, and being of some value, it should not be used in waste, but only just sufficient to litter down the cattle, and absorb the droppings, &c., from them; and where any can be spared it would be advisable to sell it, and buy manure with the money.

An important consideration is, the management and preparation of the home-made manure; and every care should be taken that none is lost or wasted; it will even answer to collect the droppings of cattle in the summer months on pasture land, by a lad or some cheap labour, and make a heap of it, and, of course, every bit about home should be carefully scraped up and collected. All manure injures by exposure, and there is no doubt it is more valuable when kept under cover till it is used, for some of the members of the Society have found both horse and cow manure purchased in Liverpool very superior to their own, which must be attributed in some measure to its being kept quite under cover, or in very narrow confined places, where the atmosphere has little effect upon it, while that made at home is so much exposed. At the same time, while it may not be expedient for a tenant to build sheds for the purpose of keeping manure under; yet, as water in abundance is also injurious, the buildings round a yard ought certainly to be spouted, for the double purpose of keeping it from the manure and creating a supply of water for the cattle.

The management and preparation of manure must depend, in a great measure, upon the nature and situation of the buildings, and also whether you keep all your cattle under cover; if you do so, and they all lie round one yard, it is recommended to throw all kinds into one heap, and level and mix them well together daily (sprinkling a little manure salt or gypsum on it now and then, to keep in the ammonia), and by this plan it

will always be in a good state to use for any crop without further turning or moving, except that part of it which has been most recently made. To make it all alike, the following plan is suggested and found to answer, that is, about a month before you want it, cut a slice or two through the heap at convenient places, opposite the shippin or stable doors, about three or four yards wide, and throw the stuff from the cuts over the top of the heap, which will cause it all to amalgamate, and throw the green manure into the vacant spaces, to be used at some future time. Manure prepared in this way should be drawn out and used at once.

When the buildings are not contiguous, and it is inconvenient to mix the different kinds together in one yard, or when cattle run over it and prevent fermentation, it is necessary to throw it all up together for a time to rot, before using, and for the purpose of destroying the seed it may contain; or, should it be advisable to draw it before wanted into the field where it is to be used, and it has to lay there a considerable time, it would be better to cart over the heap, but if required soon, it had better be shot in loads, and have a man there ready to throw it up and mix it well together at once. In both cases, it should be covered with either soil or gypsum, and the heap should always be made quite square and as high as it can be conveniently thrown, that the smallest surface may be exposed to the drying winds and sun. A heap ten yards square has forty yards of side, but if the same heap is made twenty yards long and five broad, it has fifty yards.

The benefit derived from, an application of liquid manure, is not yet quite a decided question, but the general feeling of the Society is, that it will not pay for the expense of making a tank to receive it, or buying a water-cart to apply it. Some of the members, from their own experience, and from what they have seen, are very positive upon this point; at the same time none think it should be suffered to run to waste if it can be avoided. A hole might be made near the manure heap, where it might drain into it and be thrown or pumped back on to the heap; and have a drain made to an adjacent grass field, and ready when any glut of rain falls to irrigate it, which will in that case do much good. The most sanguine of those who have both tanks and water carts, say one quarter of a mile is the extreme limit it will answer to take it, and they think a force pump and long hose would be a better method of distribution; where, however, it is applied in this way it should, if very strong, be diluted, and should either be applied in the evening or after a shower, and the land on which it is put should contain a portion of clay.

Some recommend that loose soils or sods, or rubbish from the hedges and banks, and

scouring of ditches, should be collected and spread over the manure heaps or cattle yards from time to time during the winter, to absorb the liquid manure, and so to be applied in the solid state. Whatever is the cause, very great disappointment has followed the use of the tank and water-cart system, and, no doubt, the application in the solid state is the best.

The Society considers lime an excellent alternative, applied once in eight or ten years, to the extent of five tons per statute acre, in as live a state as possible; and both it and lime from the gas works are excellent things to mix with the scouring of ditches, or scutch, to manure grass land, and when mossy or sour, it will much improve and sweeten it.

It is also thought necessary to purchase manure of some kinds, as enough can seldom be made profitably at home. It then becomes an important question what kind is the best. There are some temporary, but valuable stimulants, which may be used with advantage occasionally, such as soot, nitrate of soda, sulphate of ammonia, &c., but the following, for general purposes, are most lasting and generally used, namely—horse and cow manure, privy ditto and ashes, called black manure, and guano, all of which can be readily purchased. The latter is the general favourite, and it is to be regretted the price is so high in comparison to that of produce. One of the great advantages attending it is, its easy and quick application compared with the two other kinds named, but it will be well to compare them as to price, &c. The first-named is, when brought home about 6s. per ton, and twenty tons per acre will be £6; black manure is about 3s. 9d. per ton, which, at twenty tons, will be £3 15s.; guano, at 10s. per cwt., at 3 cwt. per acre, is 30s. Now, considering that although it must yield to the first-named in its lasting qualities, yet for the first year it will produce very near, or quite as much increase, as either kind, and still leave a little good behind, and for the price of one acre of the former, (that is cattle manure), you can cover four acres with guano, and for one acre, of black manure, two and a half with it. It follows that guano must be the cheapest and best; for suppose the £6 was spread in guano on one acre of grass for hay the second on oats for corn and straw, the third on turnips, all three for cattle, and the fourth on wheat, for money, the great increase it always gives when properly applied will enable the farmer to keep so much extra stock, which will, in its turn, make so much more manure for the farm, that it becomes in this manner the most permanently useful manure of the three, as well as the cheapest. This is no theory, but has been proved by many years' practice, and many can aver from experience, that fre-

quent application of guano on the same land is a permanent benefit to it.

Having now considered the best kinds of manure and the management of them, it remains, secondly, to consider shortly the application of them.

It is considered that, on light and shallow land it is right to apply small quantities and often, but on deep and heavy land it is better to put enough at once to carry it through a course of cropping; and a change of manure is also recommended on the same land, guano one time and farm-yard manure the next, and, occasionally, lime for a change.

The Society would advise that all the farm-yard manure made during the Summer should be applied, up to Christmas, on any grass land or young clover that may require assistance, and all the Winter-made manure should be used for root crops,—first, for potatoes, to be applied in a half-rotten state, and what is left, for mangel wurzel and turnips; but for these it should be more decomposed and solid, as it suits the crop better and is better able in that state to retain moisture, which in some hot and dry seasons may be of great advantage. When it can possibly be accomplished, the manure should be spread and covered in the same day it is drawn on to the land, as every hour's exposure to the sun and wind dries its juices and is injurious. When the farm-yard manure is exhausted, then the guano should be used alone for the root crop, (they have been found to answer best separated,) at from 3 to 4 cwt. per statute acre, never to exceed the latter; and the Society recommends that guano should be used in preference to manure for Spring crops of grain and pulse, and should always be harrowed in, and that it should also, in the Spring, be applied to grass land and young clovers when required, in preference to manure; but care should be taken in this case to choose a showery time, with a low barometer; and it is far better to wait patiently for such weather than put it on in a harsh dry time; evening is the best time to sow it, as then you are almost sure of some dew during the night; about an equal weight of common salt should be mixed with it as it helps to retain the ammonia.

There is a question arises on this matter, whether farm-yard manure or guano injures most by exposure to the atmosphere. The Society are not quite unanimous upon the point, but are satisfied all manures should be covered as quickly as possible; and they think the application of them as mentioned above, the best under all circumstances.

WHAT IS A SUCCESSFUL EXPERIMENT.

In pronouncing whether an experiment has been successful or not, it is necessary to have a clear idea of the purpose for which it has

been made, and of its fitness to attain that purpose under the circumstances in which it is tried.

Generally, however, an experimental application may be said to be successful, either economically or theoretically—

1°. When it causes the production of a decidedly larger crop than would have been raised without its assistance in the existing circumstances.

2°. When the crop, after paying the additional cost of the application, leaves a larger profit than it would otherwise have done.

3°. When it illustrates the mode of action of the substance applied upon a given crop, in given circumstances—or throws light upon some obscure point, in theory or practice.

4°. In this sense it may often be considered successful when, after repeated trials, it is found to produce no sensible effect whatever. A decidedly negative result may often be as useful as a positive one, not only by preventing the outlay of money on the part of the practical man, but by clearly proving or disproving some theoretical question.

5°. When it suggests new, further, and perhaps more interesting experimental researches.

In this last case, an experiment may prove of great value to the theory of agriculture, and may ultimately be productive of great benefits to the progress of knowledge. Indeed, all new steps in knowledge are suggestive of further research; and it is one of the most valuable consequences of beginning to experiment, with however little knowledge of the subject at first, that a thinking and reading man comes by degrees not only to see his way clearly through what he is actually doing, but to ask new questions of himself, which new experiments, probably never before thought of by any one, can alone enable him to answer. Almost every result he obtains suggests to him further inquiries, when its true meaning is perceived or suspected; and not only is a habit of strict investigation acquired, but the spirit and love of it are awakened and encouraged in his mind.—*Johnston's Experimental Agriculture.*

CULTIVATION AND MANAGEMENT OF HEMP.

HEMP belongs to a class of plants (*Urtica*) totally different from the flaxworts. The common stinging-nettle, or wild hemp, will serve as popular illustrations of the Hemp plant. It differs from the usually cultivated plants, in having the female and male flowers on separate stems.

The soil best adapted to the growth of Hemp is a rich strong mould, or light clayey loam: all the best Hemp soils contain a portion of sand, which keeps the soil open. Hemp

cannot be pulled on strong clays. During the last Continental war, Hemp was grown on bog land, in the neighbourhood of Crowland and Spalding; but was discontinued before its conclusion, owing to its producing an inferior article. Under ordinary culture, the produce of Hemp will amount to 60 or 70 stone per acre. When grown under favourable circumstances, Hemp is a plant of rapid growth, frequently in this country obtaining a height of six, and sometimes of seven feet. It is reported, however, to attain in Italy, and warm Oriental climates, a height occasionally of from 15 to 18 feet, without any diminution of the equal texture and fineness of its fibre.

When the farmer has selected the portion of land intended for Hemp, it should be ploughed in November into six-yard ridges, so that it may mellow during the succeeding frosts. Early in March the land should be cross-ploughed, if the weather is dry, and remain in that state until April, at which season it should be well harrowed, rolled, harrowed, and cleared of weeds, twitch, &c.: twitch and horseman are fatal to Hemp. The roller and harrow must be applied as often as is requisite to get the soil into a fine tilth, in which state it may be allowed to remain for a few days for the weeds to sprout and the ungathered roots to dry up; after which the land must be ploughed the same way of the field in which it is intended to grow the crop, the sets being laid six or eight yards wide. By the time these repeated ploughings, harrowings, &c., are accomplished, the month of April will be somewhat advanced, at which period the farmer must have his manure ready; 20 tons at least of well-rotted mixed stable and feeding-shed manure should be applied to an acre. The manure should be carefully and evenly spread on the side of the field intended to be first ploughed following immediately after the spreader: the spreader of the manure must be directed to throw out half the heap next to the ploughman first, and then turn down the other half; by this means the manure is not dried up by the sun. The ploughman must be careful not to cut a furrow more than six inches deep, for Hemp requires as many seams as possible for the seeds to fall in along with the manure.

An acre of land requires from two-and-a-half to three bushels of seed: if the Hemp is required to be manufactured into linen, two pecks more should be added. The best season for sowing hemp is from the 1st to the 12th of May—a few days later *must do*, if the weather is wet: if sown later than the 12th of May, the fibre generally grows thin and weak.

Hemp should never be sown earlier than the 15th of April; the first week in May will be found the best period, for Hemp is a most unprofitable crop unless sown on a soil sufficiently rich to force it rapidly forward. It is better to wait a short period for genial

weather, rather than incur the risk of the crop being destroyed by a spring frost.

When Hemp is sown prior to the 12th of May, it is fit to pull for white or linen purposes about the 12th of August: previous to that period, the fibre will *not have set*, nor the male have shed its pollen. It was a practice many years ago, when White Hemp ruled high, to pull the weak plants and all the male stems immediately after the pollen was shed, and leave the female stems to stand for seed. This labour was performed by women and old men. The price of pulling 100 gleans, as they were termed, was 1s., or 1s. 2d. per hundred of six score. After the Hemp was pulled and tied round the head with four or five of its own stalks, it was laid down in rows with the root part spread out; and a man went round in the evening, with a boy or woman, to set it up in stocks of five or six gleans—the boy taking a fork, such as farmers generally use, to knock and shake out the soil from the roots, and scrape out the undergrowth that lies in the bottom of the stems. In the course of a few days it will be ready to take to the water; before doing so, it will require tying near the roots. This is usually done with a band composed of twisted leaf-reed, cut for the purpose two or three days previously. The gleans must then be jumped on the ground to level the roots. When the Hemp is carried to the water, care must be taken that the tops of the Hemp hang well over the sides in order to cover the stems well; for if the covering sods touch the stems at the sides, the fibres turn black at the points of contact. The sods with which it is necessary to cover the Hemp whilst in the water are generally cut adjacent thereto, and are usually replaced when done with. The sods are sometimes cut with a rip and sod-spade; sometimes with a paring plough, and then cut into short lengths by a spade. Great attention has to be paid to the process of watering or retting. After laying the sods over the heap, they must be frequently trod upon, in order to sink them, and make the water appear between the sods; care must be taken that the roots of the Hemp are put lowest in the water. The treading must be repeated every day, until the Hemp is ready to be taken out of the water, which will be from nine to ten days if the weather is warm, and rather longer if the weather is cold. Considerable experience is requisite before a person becomes a thorough judge on this point. The following rules, if strictly followed, will serve as pretty safe guides:—When the retting is supposed to have gone far enough, take a glean from the middle of the water, from which take out a stem; then hold the stem by the root end, and draw the thumb-nail up the stem to the top. If the fibre slip up the stem it will be sufficiently retted; if not, it will require another day, or perhaps more. Also spread the glean on its side to dry; it will

do so in the course of the day: if the stem then breaks freely, and the fibre leaves it easily, it will be properly retted.

The sods must now be taken off. Two men will be required to take out the gleans—one to lift them partly out of the water with a fork, and land them on the ground, which is technically termed a couch. The next day (for if suffered to remain longer on the couch, it heats and rots) it is carted out and taken to grass land that has been mown and the hay taken therefrom for some time, so that a considerable quantity of new grass has grown, which prevents the fibre from being much injured by worms. When laid out on the eddish, it should be evenly spread, by women, in rows. It will require to lie on the eddish perhaps three weeks or more, for the fibre to become free and bleached. It will require turning over with a light pole, putting the pole underneath the top part, and lifting it over. This must be done very nearly every three or four days, usually by women.

To ascertain when it has lain sufficiently on the grass, the grower must within ten days examine the stems in different parts of the field; if any pink spots are discovered on the stems, it will be sufficiently bleached, if not it must lie longer; there can be no fear of the fibre deteriorating until the pink spots appear, which by frequent turning may occupy three weeks. The hemp must then be gathered, tied into bundles, and set into stocks to dry (the stocks consisting of ten or twelve bundles each,) and tied from the middle bundle of each side to each end, to keep the wind from blowing it over. When perfectly dry, it must be carried from the field and placed in a barn, or ricked in some exposed part, with a cullis roof to keep it dry. The scutching has next to be provided for. The scutchers should be instructed to make up the Hemp carefully into bundles of half-stones each comprised of four heads, and tied round with their own heads tightly drawn through the hands. The pullings, as they are termed are tied up into half-stones with a band round the middle, the ends drawn together tied in a knot.

The female, or Seed Hemp, if allowed to stand for seed, should be treated as follows:—In the early part of September the Seed Hemp will be ready for pulling: this may be known by observing and examining the four low seeds on the stem, called by growers elbow-seed; if they are of a dark grey colour, firm inside, and the husks turning a little yellow, it is fit to pull. At this season strong winds sometimes occur, sufficient to break some of the Seed Hemp; instructions should therefore be given, in gathering, to collect the fallen stems (as they contain seed,) and be careful not to break the stem, or cramp it with the hand. Breaking is very detrimental to Hemp.

The Seed Hemp should be set up in stocks of forty gleans each, and the under-growth

raked up and spread evenly over the tops of the stocks, to keep away the birds, which will otherwise infest it; and the heads tied round with a band of the same material, to keep the wind from disturbing it. The seeds are known to be sufficiently matured to thrash out by the crispness of the capsules, and the facility with which the seeds fall out. In thrashing, a cloth has to be procured, and spread in some convenient part of the field, and a bolster raised on the side of the cloth from the wind, to prevent soil from falling among the seed. The stooks must be drawn to the cloth by a rope passing round the stook under the heads, and over the drawer's shoulders: this requires a strong man. He must then place the head part carefully on the cloth. To prevent loss of seed, thrashing ought to be proceeded with as soon as ready. When thrashed, it may be watered, as previously directed, or made into a rick, and have a spring ret. If placed in a rick, care must be taken that it is properly thatched; for, if the least wet gets into the rick, it will destroy the fibre. Hemp can be dew-retted in the manner described in the account of flax.

Hemp being different from that of ordinary crops, and requiring very good land, with much labour and attention, its culture is not likely to be followed, especially at the average prices of late years, of which the following account may be received as a fair estimate:—

EXPENSES.

Rent and taxes per acre.....	£2 10 0
20 tons of manure	5 0 0
3 bushels of seed.....	0 15 0
Tillage.....	1 10 0
Pulling, steeping, &c,	1 10 0
Taking from steep, spreading, thrashing, &c	1 10 0
Scutching, 1s 6d per stone, for 60 stone.....	4 10 0
Cleaning seed, taking to market, &c.	0 7 6
Net profit.....	1 2 0
	<hr/>
	£18 15 0

PRODUCTS.

60 stones of Hemp, at 4s 9d.....	£13 10 0
20 bushels of seed, at 4s 6d.....	4 10 0
	<hr/>
	18 0 0
Add 15s, value of dressing to grass- land.....	0 15 0
	<hr/>
	£18 15 0

Note by the Editor.— We believe that in Canada it may not be essential that the seed should be sown previous to the 12th of May, when our vegetation is so much more rapid than in England. Perhaps any time in May would answer, but we cannot say so from

experience. The expenses of cultivation so far as regards the rent, would not be so great here, nor would the manure cost so much. There is very little doubt that hemp might be produced in Canada to great advantage. The plant would grow here on suitable and well cultivated soil to a great height, and would, we believe, yield a larger produce than in England. There is no difficulty in perceiving at once, the difference between the male and female plants. We may in a future number give illustrations of each. In ploughing land in the fall intended for hemp in Spring, the ridges should not be made so wide, as in England, and ought not to exceed from seven to nine feet in width so as to leave the land as dry as possible.

THE DESTRUCTION OF RATS.

“The following recipe for the destruction of rats has been communicated by Dr. Ure to the Council of the English Agricultural Society, and is highly recommended as the best known means of getting rid of these most obnoxious and destructive vermin. It has been tried by several intelligent persons, and found perfectly effectual. Melt hog's lard in a bottle plunged in water, heated to about 150 degrees of Fahrenheit; introduce into it half an ounce of phosphorous for every pound of lard; then add a pint of proof-spirit or whiskey; cork the bottle firmly after its contents have been heated to 150 degrees, taking it at the same time, out of the water and agitate smartly till the phosphorus becomes uniformly diffused forming a milky-looking liquid. This liquid, being cooled, will afford a white compound of phosphorus and lard, from which the spirit spontaneously separates, and may be poured off to be used again, for none of it enters into the combination, but it merely serves to comminute the phosphorus, and diffuse it in very fine particles through the lard. This compound, on being warmed very gently, may be poured out into a mixture of wheat flour and sugar, incorporated therewith, and then flavoured with oil of rhodinn, or not, at pleasure. The flavour may be varied with oil of aniseed, &c. This dough, being made into pellets, is to be laid in rat-holes. By its luminousness in the dark, it attracts their notice, and being agreeable to their palates and noses, it is readily eaten, and proves certainly fatal. They soon are seen issuing from their lurking-places to seek for water to quench their burning thirst and bowels, and they commonly die near the water. They continue to eat it as long as it is offered to them, without being deterred by the fate of their fellows, as is known to be the case with ar-

senical doses. It may be an easy guide for those who are desirous of following Dr. Ure's prescription, and may not have a thermometer at hand, to know that a temperature of 150 degrees of Fahrenheit is equivalent to a degree of heat midway between that at which white of egg coagulates, and white wax melts."

I have little to offer in addition, except to suggest that the vehicle with which the compound of lard and phosphorus is to be used should be *fresh malt*, instead of a mixture of sugar and wheaten flower: and I would also suggest the following preparation to be added, as an *allurement*, to induce the rats to eat freely of the compost:—

Oil of Rhodium	1 scruple.
Oil of Caraway	1 drachm.
Oil of Lavender	5 drops.
Oil of Aniseed	10 drops.
Tincture of Musk	2 drops.

This is to be added to the compost, in the proportion of about 10 drops to the ounce. If kept in a well-stopped bottle, and a bit of bladder tied over the stopper, it will retain its strength for a length of time. The compound of phosphorus and lard was known to professional rat-catchers before Dr Ure communicated the above formula to the Agricultural Society. A few applications will effect the clearance of an entire premises, and the object then to be desired is to prevent their return. In the "Farmer's Magazine," vol. Aiii. p. 452, the following receipt is given for this important purpose:—"Take one pound of nitre, and one pound of alum; dissolve them together in two quarts of spring water; get about a bushel of bran, and make a mash thereof, putting in two pints of the above liquid, and mixing all together. When you build your stacks, every second course, take a handful or two of the mash, and throw upon them till they come to the easing. I have never seen this tried, but an agricultural friend states that he has tried it, and found it so successful that he never has a stack put up in any other manner.

The changes which are perpetually occurring in the heavens have been reckoned of the highest importance, and have afforded the masterminds of all ages a sublime and interesting theme for speculation and enquiry; nor are those speculations diminished, nor the interest lessened in the nineteenth century, for science opens her splendid volume, in which all may read, and place the stupendous and the minute before us by means of the telescope and microscope, converting every star into a sun, and every atom into a world. Science unravels the sunbeam as it comes dancing over the earth, painting the flowers in every variety of colour, illuminating flitting clouds, the Proteus of the

skies, and smilingly glistening alike in the Royal Palace and the humble cottage. Science has unravelled to the enquiring mind, that the beautiful "bow in the clouds" depends on two simple and unerring laws of light. Science too has taught us to transmit that wonderful light into a well contrived apparatus, which in a few seconds gives a faithful copy of a living subject. Science evolves the lightning of nature, and sends it along the telegraph with undiminished velocity. Why not then science lead the contemplative mind to study the laws of the stars, and determine how far they exercise an influence over animal life, and in consequence of the occasional withdrawal of light, they also affect the vegetable world? For, at the approach of night, the ox retires to his lair; the beast of prey sally forth from their dens, in quest of prey; while man, wearied of muscular exertion and mental excitement, which he bustle of life demands of him during the day, stretches himself on the couch of resets, and gradually sinks into that mysterious state of oblivion as regards human cares and anxieties, which we call sleep. The changes which occur in a year are equally as wonderful as those which occur in a day; and day and night, in continued succession. All these things are eminently calculated to lead the conscientious student from the consideration of matter to the contemplation of its great Author, and hence exclaimed a celebrated poet:

"I read thy awful name emblazoned high,
In glowing letters on th' illumined sky;
Nor less the mystic characters I see
Wrought in each flower, inscribed on every tree."

If science has made the rapid strides I have here hinted at—and that it has, our senses testify daily—why not astro-meteorology claim its share of advocates? It is equally sublime with astronomy, electricity, &c., &c. and equally useful in its results, to all who feel an interest in its cultivation. Some, however, affirm that it is a study above their humble capacities. But let not this idea deter even the humblest mind from pursuing the subject, for history and biography inform us that many of the greatest philosophers had an humble origin; for example—Franklin was a journeyman printer; Sir Richard Arkwright was a barber; Sir Wm Herschel was musician in a military band; and the great Stephenson was a railway labourer; and Adams, the discoverer of the new planet Neptune, was a poor farmer's son. Many other instances might be adduced.

The Dutch have a proverb that he who manures his land generously, gets his crop cheap, while he who manures scantily pays a double price for his crop.

Agricultural Journal

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY

MONTREAL, FEBRUARY, 1851.

EXPERIMENTAL AND MODEL FARMS.



WHAT is the difference between Experimental & Model Farms?

We shall leave the description of the former to be made by those who recommend them; while we shall endeavor to describe what we conceive the latter should be. In the first place, all experiments necessary to forward the profitable improvement of Canadian Agriculture, might be made on Model Farms. They would not be Model Farms if this could not be done upon them. Model Farms should be so conducted in every respect, as to be an example for ordinary farmers to follow. It is not the system of Mr. Mechi, or what is known as high farming in Britain, that would be suitable on a Model Farm in Canada; but such a plain system of husbandry as would be suitable to the situation and circumstances of the farmers of Canada, who it would be proposed to benefit by the example of Model Farms. A regular system of good and simple Agriculture in all its various branches; the careful attention to every description of domestic animals, in breeding, selecting, and feeding; the management of the dairy—all these matters should be properly carried into effect on a Model Farm, and, if possible, so as to pay all expenses. We may allow our richer brother farmers in Britain, or wealthy proprietors there, to make experiments for us, of which we shall hear the reports and

may adopt such plans as have succeeded and proved profitable. This mode of proceeding will be much the least expensive, and give us all the advantages of experiments. Model Farms should show the results obtained from land sufficiently drained, judiciously cultivated and manured—domestic animals under proper management—the dairy skillfully conducted, and in every case, visitors to such farms should be able to perceive that they could adopt a similar system of husbandry in its general features, upon their own farms with advantage.

We were glad to perceive in the January number of *the Agriculturist*, published in Toronto, that the Report of our visit to the Niagara Exhibition, has been favorably noticed by the Editor. We should be very sorry indeed, that our Report had given any—even the slightest offence. We undoubtedly saw a larger number of superior neat cattle and sheep at Niagara, than we ever saw at any Cattle Show in Lower Canada, and also superior samples of wheat, but we did not think that the climate or soil indicated any superiority for Agricultural purposes except for the production of Fall wheat. Lower Canada, is in our estimation, not inferior to any part of North America that we have seen, in the general quality of her soil, and the adaptation of her climate to her geographical situation and circumstances, and she has the further advantage of being more convenient to the only outlet we have to the Atlantic. This latter advantage alone gives a considerably increased value to her Agricultural products. We wish our Upper Canada friends all possible prosperity, and from what we have seen of them, we are convinced they will be prosperous and good farmers.

As Editor of this Journal, we feel it to be our duty as well as our inclination to make it as useful as we possibly can. We have for so many years advocated the cause of Agriculture, that we trust subscribers to

this Journal will give this assertion full credit. We do not expect that our humbler exertions have given satisfaction to all, but we rely upon the generous feelings of all who take the Journal that they will be indulgent to any faults they may discover, and suggest any improvements they may see necessary to be introduced. We do not interfere in politics or with parties, and therefore if we err in Agricultural matters it must proceed from our not being so well informed on the subject as other parties. We can safely declare that every line we have ever written on Agricultural subjects was dictated by a sincere desire to promote the interests and prosperity of Canadian Agriculturists of all races, without distinction. We have now become old in their service, and if they discover any errors in our conduct of this Journal, we hope they will rather assist us with their advice and counsel than condemn any deficiency. We have written much, and of course we are conscious that we may have often been in error, but we assure our readers of our perfect willingness to be corrected and be thankful for the correction. We believe we are warranted in saying, if parties would try the experiment, they would find it a much less difficult task to discover what they would imagine to be faults in a publication under the management of another, than to conduct one themselves that would be faultless.

AGRICULTURAL REPORT
FOR JANUARY.

As we have not any growing crops, or the progress of any field work to report of, it is satisfactory to know that the land is deeply covered with snow, the very best protection it could have during the winter months in Canada. This covering is as beneficial to grass as to arable land, and is infinitely preferable to the alternating rain and snow, frost and thaw, which they have in other parts of North America. The effects of this sort of changeable season is quite perceptible in the quality of hay produced from cultivated grasses. The

exposure of these grasses to frosts and thaws destroys a large portion of them and the plants are replaced with natural grasses of almost every variety, and hence the mixed and inferior quality of the hay, in the Markets of New York, Boston, and other places, to that brought to Montreal, which undoubtedly has generally the best show of hay we have ever seen in any country. We have frequently heard parties from the British Isles object to the Timothy, as too strong for animals, but we are convinced there is no better, *nor any so good* hay grown in the British Isles, unless it is Timothy. This is a great advantage in Agriculture. Rye-grass, or any of the soft grass of the British Isles, bear no comparison to our Timothy. We cannot give any opinion of Italian Rye-grass, as we have never seen any of it growing. From all we have been able to learn of the general produce of Wheat last year, we believe it has been very various. We have been told of many fair returns, but we have heard of others very short. A very respectable Curé of a country parish has informed us that he raised, last year, on soil naturally not good, fourteen minots wheat from each one sown, and that he has between fifty and sixty arpents of land, which he proposes to do all in his power to improve and cultivate, so as to be an example to his parishioners. We were rejoiced to hear this, because we are satisfied of the beneficial influence of such a precedent to the rural population. Such examples would go far to promote the improvement of Canadian husbandry. We have also heard of Lectures on Agriculture being delivered in several country parishes, and by Canadians. This Report should be as satisfactory to the friends of Agricultural improvement, as any we shall be able to make during the coming season of the state of crops. Several farmers have informed us that they believe the wheat known as the "Black Sea Wheat," has considerably degenerated in quality from what it was when first introduced here.

This is a matter of great importance, and should be enquired into, and if the Report is found to be correct, every exertion should be made to provide new seed for the next Spring. We have given, in the last number of the Journal, the names of several Spring wheats that succeed in Scotland, and it might be very desirable to import some of them. New and suitable varieties of seed are as necessary as judicious cultivation, in order to the production of good crops. The markets continue to be well supplied with Canadian products of Agriculture, and the prices would not be ruinously low, provided we could raise our average produce of crops. At all events, they are not comparatively, greatly lower than the prices in the British Isles. The price of pork we conceive to be the least remunerative of any meat sold in our market, and we do not understand why it should not be worth more than it has usually sold for this Winter. No doubt, under existing circumstances, perfect reciprocity of trade between the Canadas and the United States would serve our agriculturists, and however the measure may be put off by our neighbors, they will, at no distant period, find it as necessary for their own convenience and advantage to establish reciprocity, as it would be beneficial to the farmers of Canada. Notwithstanding our geographical position, and all other fancied disadvantages, Canadian Agricultural products will be sent southwards, and our friends on the other side of line 45° will have reason to rejoice that this country shall be able to supply them with what their own cannot. This proposition may be doubted, but time will prove its correctness, and it should be an encouragement to us to be in such a position as to be able to supply a certain market and demand that cannot fail to be open to us. The sale of horses for the United States continues as active as ever, and we believe would be vastly increased, if our supply were of a better description. There is another of our products, barley, which we

were told by a party, they were commissioned to purchase here for a brewer in the United States, and pay 20 per cent. duty upon its importation into the latter country. Our cattle will go there also, instead of their cattle coming here—so does butter. Oats has and will be exported there in abundance. Though rigorous our climate may be, we shall be able to export products to a country esteemed to have a much more genial and favorable climate than Canada. The great bulk of the people of the United States are not likely to forego the use of articles they may deem necessary for them, for the advantage that protection would afford to any section of the population. We may depend upon this circumstance for the freedom of trade, when all other means fail to produce free trade.

January 28th, 1851.

We should have given insertion to the communication of "Quebec" in our last number, but the matter for the Journal was in type before we received it. We should be most happy to have from any correspondent, the best means to adopt to promote the necessary improvement of Agriculture in Lower Canada, but we hope our correspondent will pardon us, if we differ from him in regard to the means he proposes. We have no objection to an Annual Exhibition conducted properly, but such Exhibitions alone, would be far from effecting the improvement of Agriculture where most required. It would be a very proper means connected with others, but undoubtedly under the present circumstances of the rural population of Lower Canada, other means than Annual Exhibitions are required, if we sincerely desire to see the general improvement of Agriculture in progress. Premiums for well managed farms, good draining, good fencing, good stock of cattle, well managed dairy, all these are objects for encouragement as well as Annual Exhibitions. One of our principal objections to Exhibitions and Cattle Shows has been the

arrangement and classing of the animals, so unlike Exhibitions in the British Isles, and in fact so unlike what they should be to make them useful, and enable judges to make a correct award for prizes. We have lately seen Illustrations of Cattle Shows in England, where each animal and lot, were kept in separate stalls, and appeared something like what a Cattle Show should be. The Exhibitions here have no proper arrangement, and are more like a Fair than a Cattle Show, and it was the same case at Syracuse in the State of New York. At Niagara there was a better arrangement, and the cattle and sheep were separated in pens, but railed pens we conceive would be better than those made of boards, as it would admit of comparing the the animals and judging of them more accurately. The Niagara Show, however, was very creditably arranged. As to our correspondent's opinion of the Agricultural Journal, we beg to say that we have every reason to believe it has been productive of more usefulness in promoting a spirit for improvement of Agriculture, where improvement was most required, than any Cattle Shows, or Exhibitions that have ever taken place in Lower Canada.

The communication of our correspondent "Ploughman" came too late for the January number of the Journal, as several other articles that were in type, were excluded for want of space. We sent a notice to that effect for the Journal, but by some mistake it did not appear. We now, however, give the communication. We shall not enter into any discussion at present upon the comparative merits of English and Scotch farming or ploughing, but as our correspondent has brought the subject forward, we copy a short notice of the proceedings at the late meeting of the English Farmers' Club which took place at London in December. In fact, we can only judge of English and Scotch farming, by the reports we hear of both, and these we shall give occasionally. We have been

in Canada nearly 33 years, and during that time most extraordinary improvements have been introduced in English and Scotch Agriculture which we only know of by report. Our correspondent appears to think that for ploughing lea, or grass land, a furrow slice 6 inches deep by $7\frac{1}{2}$ wide, will make better ploughing than if the slice was 5 inches deep and 8 inches wide, or 6 inches deep and 9 inches wide. It may be from prejudice that we feel so persuaded that either of the last gages are preferable to the first, but it would be impossible to convince us of the contrary, except by practical demonstration, and in that case we should be most willing to acknowledge our error. The merits of wheel and swing ploughs have not been properly tested in Canada as yet, on suitable, and cleared land, but we are certain that one of Ransome's best wheel ploughs will cut and turn a furrow slice as truly and exactly as any swing plough that was ever made. We offer no objection to swing ploughs, on the contrary, we think them best for general purposes in Canada particularly for those who may prefer them, but we think it assuming a good deal to denounce as an imperfect implement, the wheel plough that is almost exclusively used by the best farmers in England, where the largest crops raised on earth are produced.

PREPARATION OF FLAX.

At a meeting of the Royal Flax Improvement Society of Ireland which took place lately in that country, the newly proposed mode of preparing Flax by Mr. Donlan, without steeping it, has been disapproved of very decidedly, and Shenek's system of steeping in vats with water heated to the temperature of about 70° as decidedly approved of. It appears that the steeping in water of this temperature is necessary to separate the gummy and albuminous matter incorporated with the fibre, which remains in it by the dry process of preparation proposed by Mr. Donlan, and while this is the case, flax dress-

ed by the dry process, is of very inferior quality, and only half the value of flax prepared by steeping, and only suitable for coarse fabric's. The plan of Mr. Shenek's, in vats with warm water is highly recommended in preference to all others, but the water should not be heated over 70°. We might grow good flax in Canada, by cultivating properly for it, and there is not a crop we could grow that would pay better. It has been a very general opinion that the climate or soil was not favourable for growing large crops or flax—but we believe this opinion is a mistaken one. We have never seen one acre cultivated properly for flax in Canada, and as a careful cultivation and preparation of soil is necessary for this plant, we could not expect to see good crops of it, when the soil has not been so prepared.

BOA'S TREATISE ON THE ROTATION AND CULTIVATION OF CROPS.

We are rejoiced to see that a small Treatise on the Rotation and Cultivation of Crops, written by Mr. Wm. Boa of St. Laurent, has been translated into the French language, and published by order of His Excellency the Governor General, and circulated extensively and gratuitously throughout the country. The Treatise is short and practical, written by a farmer who understands his business, and calculated to effect considerable good. His Excellency is entitled to the gratitude of the Canadian farmers for this mark of his regard for their interest, and the improvement of the country.—Such acts cannot fail to be beneficial, and must show that the improvement of Agriculture is a matter of great importance in the estimation of the Governor General of this fine country. To convince farmers that the improvement of Agriculture is a matter of the first importance to every true friend of Canada, will have a great influence in urging them to consider the subject, and endeavour to understand what may be in their power to do, to effect the improve-

ment that is required in Agriculture. They must be convinced of the necessity and advantage of improvement, before they can be persuaded to adopt them, and when they find the Governor General interest himself in the subject, in which he can have no possible interest, except their advantage, we trust it will go very far to convince farmers that it is their duty and interest to do all in their power to improve their Agriculture. We have not an English copy of the Treatise. We would copy it into the French Agricultural Journal, only we believe that every subscriber, who receives that Journal, has had a copy addressed to them, and, therefore, it would be unnecessary to copy it.

AGRICULTURAL IMPROVEMENT.

We beg to direct attention to the following article on "Agricultural Improvement in England. It may not be in the power of Canadian farmers generally to introduce a high system of Agriculture, but there are very useful hints in the article we copy, for every farmer, and at all events parties who are engaged in Agriculture, cannot but feel pleasure in these statements, where one acre of land will produce 40 tons of Italian Rye-grass in a year for green food for cattle. It is a great absurdity in us Canadians to seek for any examples in husbandry, that are superior to those to be found in the British Isles. There is no portion of the earth's surface where Agriculture and stock are brought to so much perfection as in England, and although we need not expect to make our Agriculture and stock equal to those of England, the more closely we endeavour to follow their example, so far as our situation and circumstances will allow, the better it will be for us, and for our interests. We shall always endeavour to urge Canadian farmers to follow the most superior precedents we can point out to them, rather than any middle or inferior system. There is a certain mode of cultivation, draining, and manuring of the

soil necessary in order to the production of good crops, and in every country, we must adopt what is necessary or we shall not produce good crops.

TO THE EDITOR OF THE HULL ADVERTISER.

SIR,—I do not expect that I should so soon trespass again on your columns, but having, since the date of my last letter, visited the model farm of William Marshall Esq., M. P., for Cumberland, at Enholme, some account of it will be probably interesting to the readers of the *Hull Advertiser*. As the entire farm cannot be removed to the great exhibition of 1851, surely a model of it might be made and exhibited there. It would open the eyes of all nations to the imperfections of ordinary husbandry, and present, in a palpable form, the advantage that would accrue from the union of agriculture and science.

My attention was directed, in the first place, to the stock and crops. There was a forest of stacks in the stack-yard, the arable land having this harvest yielded more than six qrs. of wheat per acre. The stalled oxen were in excellent condition, as were also the calves; and the piggery was really beautiful. And then what magnificent draught-horses in the stable! They reminded me of the dray-horses in London. A ride round the farm presented land which would have rejoiced the heart of Jethro Tull, had he been living, the soil being reduced to the condition of garden-ground, by two magnificent specimens of Crosskill's clod-crusher—an instrument of which the manager speaks most highly. The pastures were remarkably clear of weeds, and a large field of Italian rye-grass was growing to the height of an ordinary meadow, after the removal of two crops of grass, the annual produce being forty tons per acre.

Having feasted my eyes with the produce of the farm, and being perfectly satisfied with the results of Mr. Marshall's husbandry, I was desirous to ascertain the nature of the processes by which such surprising results could be obtained. To acquire which important information I next proceeded to inspect the machinery of this great bread and meat manufactory; and goat was my satisfaction to find nothing extravagant or fantastical, but a severe simplicity and wise economy in all the arrangements. Nothing was wanting, and yet there was nothing superfluous: and the several contrivances having a relation to each other, and to one great motive power, gave a unity to the whole concern that was really captivating. If, indeed, a poet were to make it the subject of a *Georgic*, he might parody the first line of the *Æneid* of Virgil, and begin with—

“Steam and its works I sing!”

This was a result I was not prepared to expect from the reports of farmers, whose

unhappy prejudices too often darken their understandings, and harden their hearts against all improvements. I expected to find a parade of instruments made for show rather than use, instead of unity, simplicity, and economy in all the arrangements. Excepting the actual tillage of the land, almost every thing seemed to be effected by steam.

The steam engine, which is a dapper little Briareus, of only eight-horse power, is here at work all day long, and looks as cheerful as if it had no work to do, although it has a hand in almost every thing. The cattle, calves, pigs, and horses are all supplied with food and drink by this provident little creature. The former it chops or crushes, and the latter it fetches from a reservoir of water—there being no wells on the farm—at the distance of half a mile, and preserves in a tank at the top of the building. The food being put into baskets is carried on a truck from the house where it is prepared, by means of Crosskill's portable railway, to every stall fed animal, while by a self adjusting apparatus, the water from the tank fills every trough. The rapidity with which the feeding is effected baffles conception, and gives to the entire process the air of a miracle. The necessary work of providing provender for the cattle does not for a moment interrupt the other labours of our industrious little Briareus, which is occasionally busy in thrashing and winnowing the corn, at the rate of a hundred quarters in twelve hours, to accomplish which useful task it is furnished with a contrivance which at first sight looks like a mangle. Some three or four girls, under the direction of one man, deposit sheaf after sheaf upon this mangle, a revolving cylinder drawing the sheaves one after another into its capacious mouth, and the grain being instantly extracted from the ears, falls into a reservoir beneath, from which it is licked up by a series of revolving little pans, which separate the chaff from the grain, and deposit the latter into the heap. Meanwhile the straw makes its escape on the other side of the cylinder, and comes dancing forth on an upward inclined shaking-plane, as if it was electrified. This flings it without ceremony on a plane inclined downward, which again casts it on the floor. And what is equally surprising, the little elf of an engine is at the same time crushing beans, grinding corn, and performing many other operations it would be tedious to enumerate.

These, however, are not the only labours of this hundred handed little Briareus. Its attention to the duties we have already enumerated does not for a moment divert it from the farm. By its exertions the fluid excrement of the horses is conveyed to and sprinkled on the manure heap. This, which is supplied with the compost formed by the litter and dung of the horses, is deposited in a great pit, under shelter, and covered with

a stratum of earth, to prevent the escape of carbonic acid and ammonia, the products of its fermentation. And what is worthy of remark, the cart which fetches a load of Italian rye-grass for the horses and cattle, having a receptacle at the bottom filled with liquid manure, deposits it in that part of the sward which is mown, and in this manner restores to the land the elements of vegetable nutrition it takes away. By stall-feeding so many head of cattle for sale, and taking care that not a particle of their manure, solid or liquid, is "embezzled or mislaid," neither bones nor guano are required for manuring the farm. It would require another letter to give you an adequate description of the buildings in which the animals are fed. everything is so simple and unadorned, and yet so well adapted for the purposes intended, whether the object is to keep the receptacles for their food and water, pure, or preserve the cattle dry and clean, without losing a particle of their fluid or solid excrements, that it almost made me a convert to the theory of the celebrated Dr. Black, that beauty is founded on utility.

What a contrast does this system of husbandry afford to the old-fashioned method of farming, in which there was no unity of purpose in the several processes, but each operation was of an isolated description. Yet so inveterate are the prejudices of practical farmers against everything scientific, that I have been gravely assured Mr. Marshall's system could not possibly answer. That it is productive of corn and cattle in the greatest abundance I have already shown; and that a method of farming, in which almost every contrivance is subordinate to one great motive power, must be more economical than a series of isolated operations, each of which requires a moving power far more expensive than the single power which here regulates almost the whole of the proceedings, is too obvious to require any further proof. The probability is, that the new system is ten times less expensive than the no-system kind of husbandry that even now to a considerable extent prevails. Be that as it may, it is certain the great secret of manufacturing prosperity is the introduction of machinery and the resources of chemistry; and what is agriculture but a manufactory of beef, mutton, and bread stuffs? A time will probably come when Mr. Marshall's receipts and expenses will be laid before the public, then the important question will be decided in a manner that will defy contradiction. Want of space prevents me from giving you a description of the factory at some distance from the farm, where the flax grown upon the estate is prepared for manufacturing purposes, and the linseed crushed and converted into oil-cake, all under the control of another little steam-engine. Here, also, tiles, and tubes for draining are manufactured, which reminds me that

I have forgotten to mention that the whole farm, which consists of alluvium deposited by the Humber, has been deep-drained by Josiah Parkes, Esq., with the happiest effects. In a field recently added to the state, we had the pleasure of witnessing the processes by which this great benefactor of British agriculture converts bogs and marshes into fields smiling with fertility.

I do hope and trust, Mr. Editor, that this hasty and imperfect report of Mr. Marshall's model farm will induce many of your agricultural readers to visit Enholme, and see for themselves to what perfection agriculture may be brought by systematic arrangements founded on scientific principles. They will be sure to meet with a kind and hospitable reception by Mr. Turner, the intelligent manager of the farm. Had he been at home when I paid my visit, the letter would have been more full of information, and more worthy of the pages of the *Hull Advertiser*. I am, Sir, your obt. servant. T. S.

LONDON FARMERS' CLUB.

At the late Meeting of the London Farmers' Club, Mr. Nesbit, T. G. S., the C. S., &c. of the Agricultural and Chemical School, Kennington, London, delivered a Lecture "On the properties of different kinds of food, and on the best methods of fattening stock." As the Lecture is a practical and useful one, we shall copy it in a future number of this Journal. Whatever opinions may be entertained to the contrary, as a farmer, we take upon us to say, that in no other country on earth, is there such valuable and practical information on every subject connected with Agriculture, as in the British Isles. Mr. Pusey, M. P., the principal Editor of the Journal of the Royal English Agricultural Society, observes:—"Books, it is true, will not teach farming, but, if they describe the practice of the best farmers, they will make men think, and show where to learn it. If our farmers will inquire what is done by the foremost of them, they will themselves, write such a book of Agricultural improvements as never was written elsewhere in legible characters, with good straight furrows, on the broad page of England." The Council of the Society trusts that the best practice, whether obtained from the pages of the Journal, or from personal inspection of the best farming

will be thus transferred to the hitherto neglected lands of the kingdom, and lead to results, alike satisfactory to all parties connected with them. The Council reports in the strongest terms of commendation, the result of the Great Exhibition at Exeter, last July, and pay a high complement to the people of that ancient city, for the attention they received, and the aid (£1260,) which they gave to the Society. The receipts at Exeter, exceeded the whole of the expenses, by £96, although these expenses amounted to £4845. We mention this circumstance by way of encouragement to action in Canada. The English Society offer this year £220 for Essays on different Agricultural Subjects; last year, we believe, they gave over £300, for Essays. The rail-roads made no charge for carrying stock to or from the show at Exeter, and only half the usual charge for Implements going there. We have a noble example to follow, and we trust Canadians will not lag behind. If a wealthy country like England, manifests such a decided disposition to do all in their power to improve and support her Agriculture, why should not we adopt a similar course, who are almost exclusively dependant on our Agriculture. To Agriculturists we would say:—Follow the best examples in farming that may be brought under your notice, and never allow yourselves to be persuaded, that you are precluded from adopting a perfect system of husbandry, because you are a resident in Canada. We do not say that we can follow the British system in every particular, because we cannot do much work in the fields for four months of winter, while our lands are frozen and covered with snow, when they can do much field work in the British Isles, during most of this period. This may be a trifling draw-back, but we deny that it is anything more. Our Winters, if disadvantageous in some respects, afford us advantages in other respects, that we do not doubt are fully equal to the disadvantages. In the British Isles, during

Winter, carting, except on the public roads, is a most difficult matter. We, on the contrary, have roads in every direction, that might be almost equal to rail-reads, and can take our manure to the fields at all times without any difficulty, and without injury to, or cutting of the lands. We think it infinitely preferable that the lands should be steadily covered with snow during the extreme cold of Winter, than to have them exposed to cold chilling rains, and occasional frost and snow, and there is not the slightest doubt, that a covering of snow and hard frost during four months of the year, is calculated to produce, and preserve greater fertility in the soil, than can be produced by a changeable Winter of alternate frosts, thaws, rain and snow.

SMITHFIELD CLUB CATTLE SHOW.

As we believe that information respecting the greatest Exhibition of fat animals that has ever taken place, must have some interest with the readers of this Journal, we copy the following paragraph from the Mark Lane Express, respecting the Smithfield Club Cattle Show, which took place, in London, the second week in December last:—

We believe it will be universally admitted that the exhibition of animals at the Show of the Smithfield Club last week was very much superior to any which preceded it; not only was the number of animals greater, but their general character was of a superior order. That a great improvement has taken place in the evenness which the animals shew, as compared with those exhibited some years since, is very manifest. The patchiness, so common ten years ago, is now rarely seen in well-bred animals. Some persons are inclined to ascribe this improvement to a change of taste on the art of the feeders, who are no longer partial to the "mountains of tallow" which they formerly seemed to admire. We, however, are not disposed to ascribe any alteration which has taken place to such a cause; we believe that the art of fattening animals has greatly improved, and we are also of opinion that the frame of the animal to which that art is to be applied has itself been rendered more suitable for the purpose through the skill of the breeder, and we are inclined to give credit to the exertions of the Royal Agricultural Society, and other societies of a like

description, for having been instrumental in attaining that end through the encouragement afforded to the breeders of live stock. It matters little which particular breed of animal may obtain the superiority as regards the number of prizes awarded to it at any single show, inasmuch as it will be seen that of the two breeds exhibited in the greatest number on this occasion, namely, the short-horns and Herefords, upon an average of seven or ten years there will be but little variation. A singular circumstance has, however, been pointed out to us by a correspondent, which will be regarded with interest by the respective advocates of the two breeds alluded to. It appears that the Hereford ox belonging to Mr. Heath, to which the gold medal was awarded, is of exactly the same dimensions as the short-horn steer belonging to Class 2; the former being, according to the catalogue, just one year younger than the latter. Thus, then, the Hereford steer of two years and ten months old attained the same bulk which the short-horned reached in three years and ten months. It is true the Hereford ox in question was a most extraordinary animal; but regarding it as such, it shows what the breed is capable of.

The opinion of the leading journal of the London press—*The Times*—of this great Cattle Show, we think worthy of insertion, as it gives useful suggestions to Canadian Agriculturists:—

(From the *Times*.)

The annual show of the Smithfield Club opens to-day to the public, and will be found, notwithstanding the depressed state of British agriculture, both in the number and the quality of the stock exhibited, very greatly in advance of the displays of former years. The present is one-fourth larger than the last show, and in a still greater ratio exceeds those which preceded it. This increase is not confined to any one department, but extends over the whole; and some idea of it may be formed when we mention that there are fifty additional stands for oxen alone. With reference to the quality of the stock brought forward, the judges are unanimous in their opinion on that subject, and, having been admitted to a private view last night, we can fully corroborate their testimony on the subject. The exhibition has in former years been blemished by a display of enormously fat and overgrown animals. Prizes were awarded, and admiration bestowed, not upon those beasts that at the earliest age, and in the most healthy and regular manner, were clothed with the greatest amount of wholesome food, but upon mountains of tallow, ungainly to look upon, useless for the purposes of subsistence, and valuable only to be manufactured into candles. The Smith-

field Club have in this respect effected a decided reform. They have at length, and unmistakably, surrendered their predilections for the melting-tub; and the danger, if any, against which they now require to be warned, is to prevent their show running so far into the opposite direction, that it may become an exhibition to promote purity of breed rather than one which has reference to the supply of our metropolitan meat markets. The principle on which the prizes are awarded properly recognizes the breeder as well as feeder of each successful animal, and the materials upon which it has been fattened are also specified. These precautions do, to a certain extent, keep the show true to its original design, and this result is still further secured by the arrangement and classification adopted, which place beasts of different breeds side by side, and induce a general comparison of merits between the different varieties of stock. It is quite true that the best bred ox will generally show himself best adapted for the purpose for which nature has destined him; but, on the other hand, the merits of cross-bred animals ought not to be lost sight of, and something is due to the appetites of our citizens, more solicitous about a good sirloin of beef or haunch of mutton than as to whether the beasts that furnished them were Devons or Herefords, Southdowns or Leicesters. If we were to find a fault with the general character of the present exhibition, we would state it thus—that the great breeders, and especially those who breed for amusement, as, for instance, the Duke of Richmond, or, to quote another name without any invidious motive, his Royal Highness Prince Albert, should, with their advantages for maintaining a successful competition, come into the field and carry away so large a proportion of the prizes against the men who the whole year around supply Smithfield Market, and appease the appetites of a population of 2,000,000. The noblemen and gentlemen who keep up fine herds of cattle, partly as a matter of amateur farming, and partly to raise the quality of stock throughout the country, have their legitimate sphere of competition at the great annual shows of the Royal Agricultural Society. The Smithfield Club ought to encourage a less dignified but not less useful class of competitors—the men who supply the best mutton, the best beef, and the best bacon to the inhabitants of London. We are far from saying that these last are altogether excluded: and a glance at the list of prizes will show that many of our best-known feeders have met with the success which they deserve. Still, practical men, looking at the result, would, we suspect, be disposed to think that several great names occur therein somewhat too often. The show is particularly strong in Leicester sheep and in crosses. It has improved greatly also in the display of Devons, in which hi-

therto it has been deficient. Mr. Heath's Hereford ox and Mr. Gooch's short-horned heifer, each the winner of a gold medal, deserve the particular notice of all who visit the exhibition, and will, no doubt, become great favourites and be well "handled" during the next few days. The pen of Southdown sheep belonging to Mr. Williams, and of Leicesters belonging to Mr. Foljambe, will also attract notice; but, besides these, visitors will not fail to notice the splendid crosses for which a prize has been awarded to Mr. J. R. Overman, and the fine Cotswold sheep of Mr. R. Beman. The exhibition of pigs, seldom the least attractive part of the annual display at the Baker-street Bazaar, is not likely this year to lose any of its usual interest. Here Mr. Fisher Hobbs still maintains his ascendancy; and, whatever question may be raised as to the value of his stock for breeding purposes, it is impossible to look at them without being satisfied that they must make most delicate food. Of late there appears to be a strong disposition in the pig breeders of the country to claim each for himself a special variety of that animal. The consequence is a degree of confusion and mystification as to what really is the pure porcine blood of England that would puzzle even the ingenuity of the College of Heralds. Every exhibitor recognises in the pen of his neighbour his own favourite form of grunter; and while nearly all are striving to secure the largest amount of meat on the smallest amount of bone, it is to be feared that the original vigour and healthiness of the species are greatly impaired. Apart from the list of prizes there are some few animals in the show which deserve a passing notice. At the head of these must be placed "a four years and six months old cross-bred heifer, between the Scotch highland cow and the Brahmin bull, bred by his grace the Duke of Wellington, and fed on grass, chaff, barleymeal, oilcake and roots." This peculiar beast differs no less in shape than in from its companions, having a buffalo hump, formed behind like a mule, and launching out its heel with dexterity at almost everybody who came within reach of it. Another point which struck us in the cattle-department of the exhibition was, that there was but one specimen of the polled Galloway breed exhibited—that breed, such large numbers of which are brought annually to the eastern counties to fatten, and thence sent into the London market. There is hardly any more favourite or more profitable description of cattle than this; but the Norfolk graziers complain that there is now great difficulty in getting them at a reasonable price and of good quality. The animal referred to is exhibited by Mr. Heath, and is a remarkably fine ox. Another and quite a novel feature of the present show is the introduction of a specimen of Dutch stock, which, however, without any

prejudice towards foreigners, it must be admitted cuts but a sorry figure. It may convey some consolation to the friends of agriculture to state that the Speaker of the House of Commons is a contributor on the present occasion of "a pen of three 21 weeks and 2 days old improved Essex Heckfield pigs, bred by himself, and fed on barley-meal, pollard, and skimmed milk." We regret to say that the right hon. gentleman has not been a successful competitor; but he may console himself, as Sir John Conroy and other distinguished feeders have been equally disappointed. To all who take an interest in the quality of animal food, and in the quantity of it which can with comfort to the cattle themselves and with benefit to man be produced from one beast—to all who wish fully to understand with what materials the Christmas hospitalities of London are furnished forth, we recommend a visit to the Baker-street Bazaar. Let them patiently read how so many fat oxen, cows, sheep, and pigs have been fed, how unsparingly every variety of provender has been supplied to them, how sumptuously they have fared, while their masters have been ruined by free trade. The Smithfield Club is as tenacious of life as the Market, though the public has not the same interest in its death. Her Majesty the Queen and his Royal Highness Prince Albert, accompanied by the Prince of Wales and Prince Alfred, visited the show on Monday morning at 11 o'clock, and, after a stay of more than an hour, left highly delighted with all they saw.

The Report of the great Christmas Cattle Market is highly interesting, and the show of fat animals is said to have been superior to any previous market ever held in London. A lot of fat South Down Ewes sold for £5 each, and a lot of the large Gloucesters sold for £6 each. It is highly gratifying to know that we are connected with a country that is far superior in Agricultural improvement, and in Agricultural stock and implements, to any country on the face of the earth. This should, indeed, induce us to endeavor to follow their example. At the Annual Dinner of the Smithfield Club, the speech of the Earl of Hardwicke, who has been an officer in the Navy, is well deserving of consideration, even in Canada, and it is also encouraging to gentlemen of the Army and Navy who settle in this country as agriculturists, to hear of such a good example in a Naval Officer, and a nobleman,

becoming a practical farmer. We hope our subscribers will pardon us for giving insertion to this speech, nearly entire:—

The Earl of HARDWICKE returned thanks. I am afraid, said the noble earl, that I am a better sailor than farmer; but at the same time I assure you that I take the deepest interest in everything connected with agriculture. Not only do I take an interest in it derived from the knowledge of the necessity of supporting it by every means in my power, and of sustaining it by example and exertion, for it is the base of the column on which rests the power of this country; but I feel and know that I should be wanting in my duty as a landed proprietor if I did not give some portion of my time towards studying and cultivating that important art, I suppose I must call it, now that we hear so much of the science necessary to carry on the operations of agriculture. (Hear.) I have been an exhibitor, and have had the good fortune to have a medal awarded to me. I thank the society for it, though I should have been better pleased had I received that medal more in conformity with my own views relative to the experimental fattening of cattle, than the system which is generally adopted in this country. The plan which I would adopt should be of a different character, though it is one more difficult, perhaps, to carry into operation. I consider that in bringing up animals to compete for a prize, the intention is to show that race and that breed which is the easiest to fatten; and that the present method does not show that at all. You do not know its positive quality nor its age for a certainty. If you are to run a race of this description, it is my opinion that the animals to be fatted for exhibition should be inspected in their lean state, that their condition and breed should be made known, and that the fattening process should begin from the same date, and the animals be shown at the same period of time. You would thus early discover which is the best blood. At present, manage it as well as you can, I deny that the result is satisfactory, or that the contest is just or perfect. I admit that there are great difficulties to contend with, and that even by the present mode you have improved the breed and description of animal best fitted for the butcher. But it is doubtful whether you have given him an animal which is fatted at the quickest and cheapest rate; that, I think, can only be ascertained in the manner I have suggested. I know it becomes our duty at the present day to exert ourselves to the utmost, in order to obtain all the knowledge we can; and I willingly offer the tribute of my gratitude to Mr. Mechi (as well as other gentlemen) for the great exertions he is making to show us, if he can, how to manage the largest possible amount of produce at the cheapest

possible rate (Hear, hear). But Mr. Mechi has not yet shown us his balance sheet (loud cries of "Hear?"), and, until the time arrives that he does so, grateful as I am to him for his exertions, he has done nothing at all (cheers, and laughter). It may be perfectly true that he raises, as he says he does, 80 tons of mangel-wurtzel per acre (a laugh). It is monstrous to conceive the fact; but I have read that he has stated it. If I am wrong I shall be corrected. But it matters not if he had raised 90 tons an acre. I am certain it is practicable to do the thing. If he has done it, it can be done. But then it must be done at an enormous outlay of money; and not only of money, but of perseverance, anxiety, early watchfulness, and exertion (Hear, hear). The money is not laid out in the field alone, but upon the buildings and yards necessary to a system which is to carry to the land the finest manure that can be placed upon it. Then, after all this has been done—after he has expended his capital on the buildings, and laid out an enormous sum of money in labour, carting, and the other operations of agriculture—when he has sold his 80 tons of mangel, I want to see the balance-sheet (cheers and laughter). When we have ascertained the state of that, and when he has revealed to us, as I have no doubt he will, the mysteries of the great undertaking he is in process of performing, we shall be able to judge of the value of Mr. Mechi to the agricultural world (loud cheers and renewed laughter). If he has succeeded in it, and gives a large balance in favour of the farmer; if, whilst by his ingenuity and his trade in London he has improved the means of reaping the beards from the chins of the people, he has also succeeded in reaping an enormous quantity of grain, and can show us that he has done it with a profit, there is not a gold medal which will be large enough to reward him (cheers). But if, on the other hand, it turns out that farming has been a mere matter of amusement with him—an amusement in which he has sunk a large capital without realizing a profit—then we shall not award him a medal, though we will be grateful to him for having proved that most important point, the negative of the proposition (cheers). Gentlemen who carry on these operations are of the highest value to the country. Knowing as I do that the landowners and occupiers in carrying on their farming operations raise all their capital from the land itself, I would ask if anything should happen to break down the superstructure of the fabric, how would they be able to continue these operations in the way that Mr. Mechi has done? Drawing his capital altogether from other sources, he receives his capital with the one hand and bestows it with the other; but we at once receive and are obliged to bestow with the same hand (Hear, hear). I say, then, that they may talk to us as much

as they please about applying more capital to the land and farming better; if there be a something which takes away the capital and the means of doing so, what rubbish it is to suppose that we can continue to carry on these operations! (cheers). We are now in such a position that the agriculturists are bound by every means in their power, and quickly too, to exert themselves and see if there are any means by which to keep the ship afloat (loud cheers). I want Mr. Mèchi speedily to give in the balance-sheet of his; to give it to us before the year passes, that we may know what is the result of his operations (Hear). If he can show us that he is a great gainer, I for one will adopt his system: but until I see this important document, I cannot, from the circumstances of my own position—and I believe that they constitute the general position of the farmer—venture to undertake a thing of the result of which I am so doubtful (cheers). Everybody must be aware that by the outlay of money produce can be grown up to a certain quantity, and so corn will stand on end up to a certain weight; but beyond that weight it will not, for the straw would break, and the first rains destroy the crop. Now, though by a great outlay of capital on the land you might be able to produce such a crop that you would be obliged to train it as you do the vine for the purpose of supporting its head, the question comes, whether, after incurring that trouble and expense upon reaping and selling it the balance would not be against you (Hear)? The whole operation rests upon the results—the balance-sheet at the end of the year. It is altogether in vain to present us with notions of practical agriculture, unless you show us at every step the cost you incur, and the results in the markets of England (cheers). I agree that there is much to be done which is not of this merely experimental character, and that there is much which may be done with great advantage both by tenant and landlord; but as to telling me that the landlord of himself is to do it all, that is quite out of the question. It is morally impossible that the landlord of a great estate can carry on its operations, after having paid the charges upon the estate, and maintain the buildings and appurtenances to boot. I tell you it is a great stewardship. I know the tenantry of England take the right view of this point. What is the landlord to do, then? There is a variety of things admissible and permissible that are in constant operation every day. I have travelled from north to south within the last few weeks. I have visited many gentlemen and noblemen upon their estates. Now no one single house did I enter, and not a gentleman did I wait upon, but the first and main topic of interest was the state of the agricultural population. He shows me what he is doing. He says, "Here are farms thrown up, but I have

taken them in hand, and am draining them. Here is a tenant in want, and I am supplying him with tiles; and I have grubbed up the hedges and cut down the timber" (Hear). Throughout the country is that feeling predominant amongst the landlords—(Hear, hear)—and I believe that a greater degree of exertion is made at this moment upon the land, by the joint powers of the landlord and the tenant united, than there has ever been at any period of our history (loud cheers). You will join with me in the prayer that those exertions may, in themselves, be full of that great and important result which I do trust in God, for the security of this country and its people, may be certain and effective (cheers). I trust that the agriculture of England may be sustained; for I do look with alarm, incalculable alarm, upon such a condition of the country as that wherein the fortunes and the wealth of the country are thrown upon the manufacturing interest alone. A more formidable, dangerous, and perilous position for a nation to be placed in, you cannot for a moment possibly conceive. Your exertions at this time are most important; for if by any accident, or the operation of any machinery, this great fabric is cut down, the trading and manufacturing population will not be able to support the interest and the honour of the nation against any foreign exigency (loud and protracted cheering). I hope I have not said a word that has trench upon the society's rules. I have not touched upon any political topic. I have adverted solely to the cultivation of the land, and the happiness and prosperity of that numerous population which lives upon it, which is a fixed population and cannot be got rid of, for there it is (Hear, hear). I am sure you will agree with me in maintaining that agriculture is the first and great object of all who love the true interests of the empire. (The noble Earl resumed his seat amidst general and protracted cheering.)

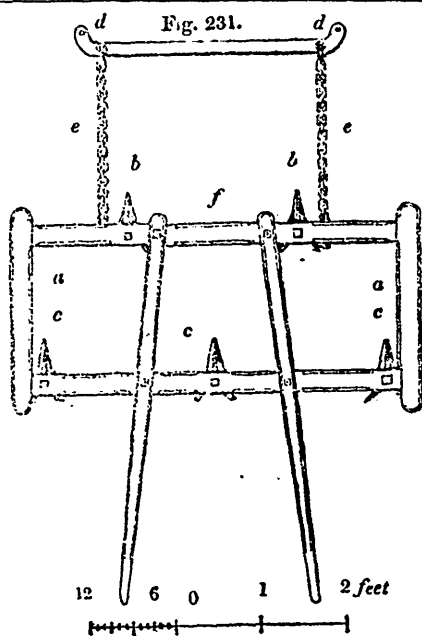
At the dinner of the London Farmers' Club, Mr. Pusey, M. P., late President of the Royal English Agricultural Society, and at present Chairman of the Journal Committee, and we believe principal Editor of the Journal of the Society, made a speech that must have produced considerable surprise in other quarters, if not at the dinner. He stated, that having heard so much of the superiority of Scotch farming to English farming, he wished to bring it to a test, and, therefore, he begged the Committee of that Club to offer, on his part, a bet of £150, to back three farms in the Eastern Counties of England, against

three farms in all Scotland. This offer was communicated by the Farmers' Club to the Haddington Farmers' Club, but up to that day there had been no answer. Mr. Pusey further remarked, "that he would not say one word against Scotch farmers, if they would only praise each other—they would be perfectly welcome to do that—but when they depreciated English farmers, his blood was up. . . . If the Scotch would let them alone, they would let the Scotch alone; but as long as the Scotch went on boasting of the superiority of Scotch farming, he would declare his belief, that that superiority was" . . .

We shall not proceed further with Mr. Pusey's remarks, but they can be seen in the *Mark Lane Express*.

We have never been in Scotland, but we have always understood that their tillage husbandry was very superior. We, however, have reason to suppose, from the descriptions we have read, that well managed farms in England, including their grass lands, and the stock upon them, cannot be excelled by any country on earth. We do not look upon any farming as perfect, that cannot show fine old pastures, as we feel persuaded that it is only on such pastures that flocks and herds can be seen in their natural perfection, and that the produce of the dairy, in butter and cheese, can attain its superior excellence. We may be prejudiced on this subject, but we have proved to our own satisfaction, that old pastures, well drained, of a good quality of soil, and done justice to, are superior to any new pastures, of one, two, or three years standing, for fattening cattle or sheep, or for yielding a good dairy produce. It is of very great consequence that we should be acquainted with various systems of agriculture, and practical opinions of these systems. We shall then be able to judge for ourselves, and adopt the system that will be most suitable and profitable. We have good examples before us, and we confess we should prefer following the highest examples in farming, provided they would be profitable, to any inferior, or to those pro-

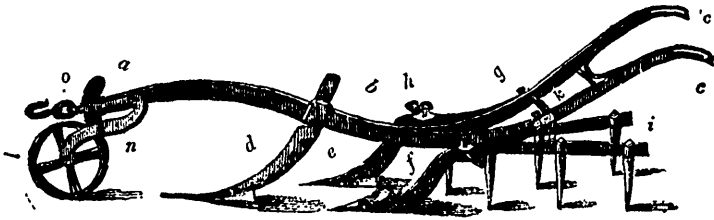
posed to us second hand. Our soil and climate admits of our introducing a superior system of husbandry, and we hope to see it established.



RIBBING COULTER.

As the small plough only makes one rib at a landing, and as only two small ploughs are to be found on most farms, and as it may be desirable, in some seasons, to rib a considerable extent of ground in a short time, an implement that will do more work in the same time, and in the same manner, should be preferable to the small plough. Such an implement may be found in the ribbing coulter, fig. 231, which is drawn by one horse, and makes 5 drills at a time, of a sufficient depth to cover the seed. It consists of a frame *a a*, bearing 5 coulters *b b c c c*, which operate on the surface soil exactly as the double mould-board plough, dividing it with small mould-boards, into a narrow furrow of mould on each side. Two coulters *b b*, are placed in the foremost part of the frame, and three *c c c*, in the hindmost part, at intermediate distances, and forming 5 drills, embracing four spaces of 12 inches each in width. The horse is attached to the eyes at *d d*, in the bar *d d*, which is fastened to the frame *a a* by the chains *e e*, which are 2 feet long, and, by their weight, together with that of the bar *d d*, give steadiness to the draught. The implement might be rendered more important if requisite, by attaching two horses to it by a shackle at *f*, to the swing-trees of the common harrows; and the framing might also be mounted on an axle and wheels,

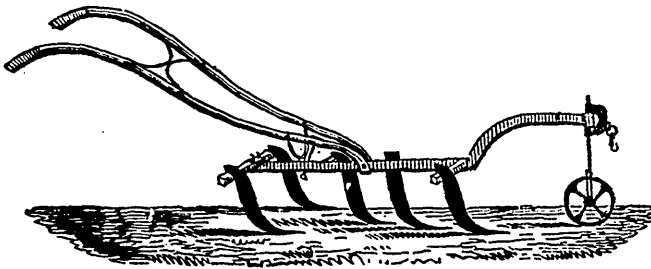
Fig. 265.



WILKIE'S DRILL-GRUBBER AND HARROW.

In this class of implements, we find a handsomely constructed one, known as *Wilkie's drill grubber and harrow*, which is represented in fig. 265. This implement is constructed with a beam *a b*, and a pair of handles *c c* attached to the tail of the beam, one on each. It has no proper body-frame, but it is merely a skeleton, the grubbing parts of it being the three tines or coulter-boards *d e f*. The foremost one *d* is set in a coulter-box in the beam, and terminates in a double-spreading feather or duck's-foot point; the two others, *e* and *f*, are continuations of the two wings, which are capable of adjustment

by the quadrant-bar *g*. The effect of the tines on the soil is somewhat similar to that of the scuffler, fig. 262, paring and under-cutting; but the implement is furnished with an appendage in the attached 6-tined harrow *i*, which completes the operation at one turn. The harrow is capable of adjustment to depth by means of its suspenders and to breadth by means of its two small quadrant-bars. The regulation of depth is aided by the wheel *l* hung in the shears *n*, which is jointed to the beam at *a*, and to which also is attached a shackle and hook *o* for the draught.



The above is a very accurate representation of the Grubber, manufactured by Mr. Alexander Fleck, St. Peter Street, in this city, and sold at £9, to £9 10s. This implement is very much commended by many parties in Lower Canada, who have

purchased and employed it. There cannot be any doubt of its usefulness upon a farm; and we recommend agriculturists to visit Mr. Fleck's establishment and see it and many other excellent implements he has.

THE HOUSEWIFE.

To Pickle Salmon.—After the Salmon is cleaned, cut it down the back, put it into a fish kettle, add a pint of vinegar, a table spoonful of salt; about a dozen bay leaves, (if they can be procured,) and some white whole pepper. Let it boil very gently till done; then take it up, and lay it on a clean cloth; put the liquor into a saucepan, and let it boil till three-parts are reduced; put it to cool, and when cold, put the Salmon into it. It will retain its goodness for several months.

Beef Steak Pie.—Cut steaks from a tender part, beat them with a roller; have a few potatoes sliced, lay a row at the bottom of the dish, then lay the steaks, season them with pepper, salt, and a little water in the dish, and if the meat is lean, lay at the top a few pieces of butter; make a good paste of either fresh beef dripping, or butter; when the pie is baked, lift the crust carefully up on one side, and put in some boiling water or gravy.

A Veal Pie.—Take a breast of Veal, the knuckle or the scrag end of the neck; just

cover it with water, and let it stew very gently until about half done; let it stand to be cold, then cut it into pieces rather small; season with pepper and salt; lay the Veal in regularly; put some of the liquor into the dish, and have more ready to put in when baked; put a puff paste round the edge of the dish, let the top be about half an inch thick.

Yorkshire Pudding.—Beat five eggs to a good froth, with two tea-spoonfuls of salt, mix them with a quart of new milk; then make it into a batter with flour, but not stiff; have a shallow pan, set it in the dripping pan under a loin of veal, beef or mutton. When the meat is about half done, put the pudding in, and when done on one side, cut it in square pieces and turn them the other side up; when it is nicely browned, send it up; these puddings are best done before a quick fire.

To make Shrewsbury Cakes.—Beat a pound and a half of butter till it looks like cream; then add a pound and a half of loaf sugar; pounded and sifted, and two pounds and a half of fine flour, and a few carraway seeds; mix it up with four eggs, roll it thin and cut them in what shape you like. They must be baked in tins, in a cool oven.

A Round of Beef.—Have the round of a fine young beast with the udder end fat to it; rub two ounces of Saltpetre well in; let it lie one night, then rub it well with common salt and a pound of coarse sugar; let it lie ten days, turn and rub it every day. When it is to be dressed, make seven or eight holes over the broad side, with a long sharp pointed knife that will go nearly through, fill each hole with the following stuffing:—grate crumbs of bread, beef marrow or suet cut very fine, parsley, thyme, black and cayenne pepper, a few cloves and mace, lemon peel and nutmeg, mix it with the yolk of an egg and salt, put it into a pot or oven to bake. Just cover it with water, put in the water a pint of beer, one onion, some black and Jamaica pepper corns, a middling size round will take four hours to bake, be sure let the liquor keep boiling all the time; if eaten hot, strain some of the liquid into the dish. It is also very good boiled. When cold, it is an excellent dish, and will keep a long time good.

Devonshire scalded or clouted Cream.—The milk is put into tin or earthen pans, holding about ten or twelve quarts each. The evening meal is placed the following morning, and the morning milk is placed in the afternoon (provided the milk remains perfectly sweet) upon a broad iron plate, heated by a small furnace, or otherwise over stoves, where exposed to a gentle fire, they remain until after the whole body of cream is supposed to have formed on the surface, which being generally removed by the edge of the

spoon or ladle, small bubbles will begin to rise, that denote the near approach of boiling heat, when the pans must be removed off the heated place or stove. The cream remains upon the milk in this state until quite cold, when it may be removed into a churn, if intended to make butter from it, or in some suitable vessel, if intended for use in the cream state. The butter is found to separate much more freely, and sooner to congregate into a mass, than in the ordinary way, when churned from raw cream that may have been several days in gathering, and at the same time will answer a more valuable purpose in preserving. It should be first salted in the usual way, then placed in convenient egg shaped stone crocks, and always kept covered with pickle, made strong enough to float and buoy up about half out of the brine, a new laid egg. The butter made from this cream, has a very agreeable flavour, and the clouted cream of Devon, needs no commendation, it is so justly celebrated. Three gallons of milk treated in this way, is said to produce one pound and a quarter of butter, and the skim-milk is much better for feeding calves, or for any other purpose, than the raw skim-milk.

NOTICE.

THE Quarterly Meeting of the Directors of the Lower Canada Agricultural Society, is to take place at their Rooms' in this City, on TUESDAY, the 11th day of February instant, at 10 o'clock, A. M.

By order,

WM. EVANS,
L. C. A. S.

Montreal, February 1, 1851.

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982-q

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THE HORTICULTURIST, AND Journal of Rural Art and Rural Taste.

EDITED BY A. J. DOWNING,

AUTHOR OF "LANDSCAPE GARDENING," "DESIGNS FOR COTTAGE, RESIDENCES," "FRUITS AND FRUIT TREES OF AMERICA," &c. &c.

This magazine is devoted mainly to Horticulture. Gardening, in a thoroughly practical as well as scientific sense, is its leading object; and it is hoped, through its columns, not only to render simple and easy to the novice, the practical care of all that belongs to the garden, but also to disseminate, in all parts of the country, a knowledge of all new and important discoveries in Horticulture. It embraces, in its scope,

- I. THE DESCRIPTION AND CULTIVATION OF FRUITS AND FRUIT TREES—a subject of vast importance, and in which we are already more interested than any other people.
- II. THE DESCRIPTION AND CULTIVATION OF FLOWERS AND FLOWERING PLANTS AND SHRUBS, from the most delicate and tender to the most hardy and robust.
- III. TO THE DESCRIPTION AND CULTIVATION OF ALL EDIBLE PLANTS, which are, or should be, grown in our gardens.
- IV. TO GARDENING, AS AN ART OF TASTE—with designs for Ornamental or Landscape Gardening.
- V. TO RURAL ARCHITECTURE—embracing Designs for Rural Cottages and Villas, Farm Houses, Lodges, Gates, Vineries, Ice Houses, &c. &c.
- VI. TO ARBORICULTURE—or the Planting or culture of Forest and Ornamental Trees.
- VII. TO BOTANY AND ENTOMOLOGY—so far as these branches are connected with the general subjects to which the work is specially devoted.

THE HORTICULTURIST has now (Dec. 1850,) been published four and a half years; and its influence on the progress of Gardening and Rural Taste is too strikingly apparent to need a word of comment. Its extended and valuable correspondence presents the experience of the most intelligent cultivators in America; and the instructive and agreeable articles from the pen of the Editor, make it equally sought after by even the general reader, interested in country life. To all persons alive to the improvement of their gardens, orchards, or country seats,—to scientific and practical cultivators of the soil,—to nurserymen and commercial gardeners, this Journal, giving the latest discoveries and improvements, experiments and acquisitions in Horticulture, and those branches of knowledge connected with it, will be found invaluable.

A NEW VOLUME, (the 6th,) commences with the January No. for 1851; and it will be the constant aim of the Editor and the Publisher, by every means in their power, to render it still more worthy, by every practicable improvement, of the liberal patronage it is receiving.

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Albany, N. Y., January 1, 1851.

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R. W. LAY,

193, Notre Dame Street, Montreal:
February 1, 1851.

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February, 1851.

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