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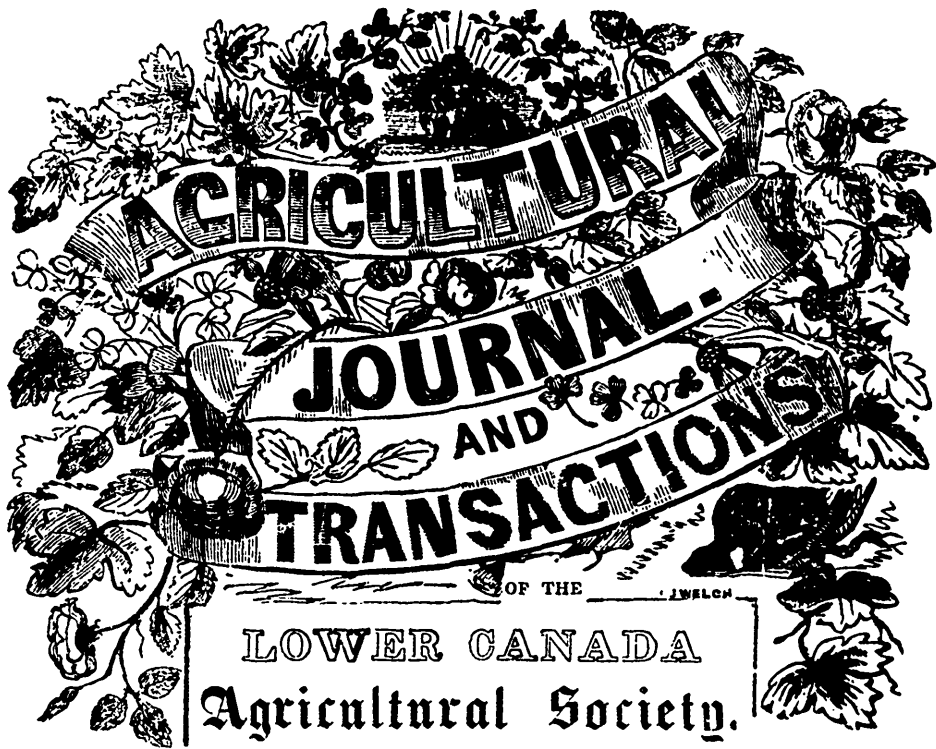
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DRAINING.

As there is no improvement more required in Canadian agriculture than sufficient draining, we think it necessary to refer to the subject constantly. Draining is known to raise the temperature of the soil several degrees, and crops come to maturity much sooner on drained than undrained land. This circumstance alone should recommend draining in Lower Canada, where the spring often commences late, and the growing seasons are very short. In the District of Quebec draining is even more necessary than in the District of Montreal, as the summers are shorter there than with us. We have seen fields of wheat lately, and in some instances, where the field might be about an arpent wide, the ridge next the drains on each side, had more wheat upon it, than was upon the whole of the rest of the field. The difference of crop on the drained and undrained land was six or eight to one, in favor of the former. In many

places drains had been cut, but were not cleaned out, and in consequence the water did not run in them, and was nearly on a level with the surface of the lands on each side. The high banks of earth accumulated on the edges of the drains are also a great defect, and should be carted away to compost heaps, or to top-dress land at once with it. If drains were properly sloped and the earth carted away, they would answer a much better purpose, and require subsequently very little labor to keep them in good order. When drains are sloped properly there is space sufficient to allow a large quantity of water to run off at once, and after the water has run off, the sloped sides may produce grass, as twelve inches wide of the bottom of the drain may be sufficient to carry off the water, when floods would subside. When the drains are cut perpendicularly, the sides are constantly falling in, particularly in the spring when the drains are most required. We have frequently seen drain

cut that were as wide at the bottom as at the top, although two or three feet deep. A drain two feet deep, should be at least four feet wide at the top, and only the width of the shovel at the bottom, and in the same proportion for deeper drains. Even after forming them on this scale the corners should be rounded off and all the earth excavated, carted away to the compost heap. These improvements would not cost so much as may be imagined, and would be a certain benefit to the farmers who would introduce them.

METEOROLOGY.

Much light has lately been thrown on climate; and our own, which was once so much complained of, is found to be the best in the world for healthful exercise, and, as I believe, for farming also; because it enjoys the most temperate summer, combined with the mildest winter, and, on the whole, a steady downfall of rain. No one can have returned from Calais to Dover without admiring the refreshing verdure of the English downs. This we owe to our frequent showers, to our clouded sky, shielding off the scorching sunshine, and to invisible vapor diffused in our air. The excess of vapor is shown by the difficulty of growing in French green-houses the heath, a plant requiring moist air, and the difficulty of working the English electric telegraph. This moisture arises partly from our neighborhood to the sea on all sides, partly to the prevalence of western winds arriving from a wide ocean. Hence comes our grazing husbandry. Our equable distribution of warmth through the year gives us our peculiar farming, mixed husbandry, the extensive growth of roots upon corn land, producing meat largely as well as bread, the maintenance of stock thus supporting the production of corn. If our summers were hotter, we could not grow turnips; if cooler, they would not ripen wheat. If our winters were colder, turnips would perish. Our fore-fathers, indeed, did not practise root husbandry. On the eastern side of England they took two corn-crops and a naked fallow, which is the three-course shift still lingering in Cleveland, and prevailing in Prussia. This is the corn side of England. On the west side, you may still find, in secluded parts of Wales, or in Devonshire, three or four oat crops grown in succession, and the land left as many years covered with grass. This is the grassy side; and though the turnip has now overspread England, one side of the island is still best suited for corn, the other for herbage. This difference of produce rests on a difference of climate, the causes of which are well understood, but are

found in very remote parts of the globe. Heat and cold, long continued, accumulate in regions removed from water, because the land there becomes constantly hotter or colder whilst the influence of the sun remains strong or weak, and the wind from the sea, which varies less in temperature, scarcely reaches these inland tracts to mitigate the fierce extremes. Hence the coldest part of the Old World is in the centre of Siberia. As you recede from that point westward you approach the sea, and hence in winter our cold comes with north-east winds from Siberia, the great deposit of cold. But we have happily a distant, yet effective source of warmth, also, in the Gulf of Mexico, from which the Gulf Stream washes our western shores. This great warm-water apparatus of nature, passing even beyond us, stretches northward of the north cape of Europe, and there, accordingly, though so near the pole, the coldest wind of winter comes actually from the south-east. Hence the line of equal cold during December runs in Great Britain due north and south. Hence, the meadows are brown in Essex, while the grass grows till Christmas in Devonshire. Englishmen, indeed, do not know the mildness of an English winter. London, though on the cold side of England, is less cold in January than Paris or Milan; and though they go for warmth to the south of France or to Italy, deserted Mayo and Connemara, and the shores of Killarney, covered with arbutus, are warmer than Montpellier, or Genoa, or Florence. Such is our winter climate. But as spring advances, a new cause of warmth arises. The sandy deserts of Africa and Arabia, gathering heat, begin to glow like a furnace, and dart warmth northwards across Europe. Germany lying nearer to the centre of this burning wilderness, becomes warmer than England, which is now, also, cooled comparatively by the sea that warmed it before. So that whereas, in winter, the more you advanced east towards Russia the deeper became the snow, now you find it more and more sultry. Hence, Hock is grown in the latitude of Cornwall. The lines of equal temperature now run up to the north-east. Stockholm and Petersburg, in June, are as warm as London. Hence, the east side of England, being the warmest in summer, is the best side for wheat. But, besides the mild winter on one side, and the warmer summer upon the other, there is a yet greater difference, as to moisture, visible and invisible. In Devonshire you find fern growing on the limbs of the oak, and oaks themselves thriving on the top of high, narrow hedge-banks. The air, though clear, being moist, probably absorbs less water from the surface of leaves, which, therefore, require a less supply of water through the roots. The difference, too, as to visible moisture, rain, is very great indeed; for the westerly winds arriving from the warm Gulf Stream, charged with vapor,

are chilled by the land, and part with that vapor in rain. If they strike a hilly land (and our western coast is almost mountainous) the air is driven up from the level of the sea to a higher and colder region, and parts with yet more rain. Accordingly, taking 29 places on the east side of the island, we find the yearly downfall to be 25½ inches; and at 29 places on the west side to be 49 inches, all but double; while, on the Cumberland mountains, it reaches the enormous amount of 121 and 147 inches. In Northumberland, when a south-wester blows, they know, I was told, that it is raining torrents in Cumberland, 50 miles off, but they get none themselves, because the air has been dried in rising over the mountain tops.

What, then, is the practical inference for agricultural from these undoubted facts, established by science? Caution in laying down general rules. We now see why a Scotch farmer often fails in England, or a Suffolk farmer even in Cheshire. Again, if a landowner desire to improve his estate in the West Highlands or Galway, he must look, we see, not to Lincolnshire or Aberdeenshire, but to some district of kindred moisture. There is, however, a more definite inference to be drawn even than these. How can a fixed rule be laid down for the depth or the distance of drains, or the size of the pipes, when one county has 25 inches of rain and another has 50 inches to be carried off by those drains? The difference is, in fact, more than this; for a large part of the downfall returns to the air from the surface. According to the most recent and trustworthy experiments, published in this journal, by Mr. Charnock, out of 33½ inches of rain, no less than 25 inches are evaporated, 8½ inches only reach a depth of 3 feet, and therefore pass through a drain. This was in Yorkshire. But at Kendal there fall 54 inches of rain. The evaporation there, however, would be not more, but less, because the air being moister must dry what is exposed to it more slowly, and the evaporation would not exceed, probably fall short of 21 inches. There remain, therefore, for the drains, 33 inches depth of water in this case, 8½ inches only in the other—four times as much in Cumberland as in Yorkshire. Yet, hitherto, if a man living in Oxfordshire said that inch pipes would drain his land well, a voice from Ayrsh' might exclaim that it was absurd to use less than 1½ pipes, which he found far the best. Yet the smaller pipe might be more competent to its duty in one place than the larger one in the other. The same thing may be said of farm-yards. Living in one of the driest counties of England, I adhere to the old fashion of making muck in farm-yards. This was somewhat blamed by a northern writer, whose talents I sincerely respect. At the very time, however, we were obliged to use a fire-engine

to moisten the litter, which was growing white and mouldy for want of moisture. When it rains here in winter our laborers say, "This is fine weather for making dung." Henceforth, in speculations on the agriculture of the country, we must never lose sight of our material variations in climate.—*Jour. of Agri. Soc. of Eng.*

(To be continued.)

ON THE PROGRESS OF AGRICULTURAL KNOWLEDGE DURING THE LAST EIGHT YEARS.

Animals seem to know, by instinct, that food which abounds in fibrine, will lay on meat in greater proportion than any other, for my shepherd tells me, it is useless to give the sheep chaff in their troughs until cold weather comes on. As the winter deepens they eat more chaff; but in spring gradually leave it off, till in May they refuse it, as we light our fires at Michaelmas and leave our grates empty in May. So far, all is clear; but an unfortunate doubt remains on a point, all-important, too, in feeding cattle—namely, the source of fat. According to Liebig it is the surplus of the starchy matter in food, which, not being wanted for fuel, is not consumed, but deposited in the body, ready for future use. Dr. Playfair compares it to the consumption of coal in a gas retort, where, if there be not air enough present, a part of the coal, instead of passing off as gas, is left behind as coal-tar. The tar formed in this case, says that agreeable writer, represents the fat of animals. If this be so, we have only to supply our fattening hogs with food full of starch, like potatoes. But the greatest agricultural chemist, Bous-singault, takes a different view altogether. He denies that fat is ever produced in the animal frame from starch. He shows that the food of cattle contains a third substance—vegetable fat—and is positive that as the flesh of animals exists ready formed in their provender, so does also their fat, and so also does the butter contained in their milk. On the latter point he brings this proof, that a cow, namely, being fed on mangel-wurzel alone, which contains little fat, gave but little milk, and that milk poor, but recovered her milk on receiving straw in addition, which, little as we would suppose it, contains vegetable fat. Since fat is the object principally aimed at in preparing stock for the market, the muscle or flesh having often, I suppose, attained their full size when the beast is put up to feed, it is evident that, until the source of fat be determined, organic chemistry being undetermined itself, can give a certain judgment on the final feeding of stock. I mean that we can have no reliable tables of the comparative virtue of different kinds of food, because, if Liebig be right, there must be two columns of figures, 1, for the ingredients of flesh, 2, for those of fuel and

fat jointly; but if Boussingault, Dumas, and the French school be right, then we must consider each article of food under the three heads of flesh, fuel, and fat distinctly. There is one point, however, certain—the importance of warmth. Wherever fat comes from, there is no doubt that both fat and flesh are wasted from the production of beef in an animal frame suffering by excessive cold. The substance of an animal pining from cold evaporates with the breath, as the spirit would pass from wine in an uncorked bottle. The comfort of our stock, therefore, is in unison with their master's profit. As to their food, practice, as Boussingault himself, no mean chemist, frankly says, "has got the start of theory; and I own," he adds, "with perfect humility, that I think its conclusions are in general greatly to be preferred." Still, animal chemistry has made great advances, and does at least explain much. Of vegetable chemistry as much can scarcely be said. In the words of its able exponent, the late Dr. Fownes, speaking at the premature close of his labors, "The chemistry of vegetable life is of a very high and mysterious order, and the glimpses occasionally obtained of its general nature are few and rare."

It seems at first strange that the chemistry of the lower form of life should be more backward than of the higher—that vegetable nutrition should be darker than animal; but Liebig's discoveries afford us a reason. Animals, he has proved, find much of their substance ready made in the vegetables which they consume. Besides, animals and vegetables belong both to organic chemistry. The two substances are, as it were, of the same realm, subject to the same laws. But vegetables have the task of transmuting the dead elements into living matter. They bridge the gulf between the mineral and the organized world. Now, this union has not yet been effected between the two kinds of chemistry. In mineral, or, more correctly, inorganic chemistry, if we can decompose a substance, we can generally also compose it. If we can sever water into its two gases, we can reform water again by uniting those gases. But we cannot deal so with oil: we can only unmake it; we cannot form it anew, by blending its elements. That task is left to the hidden powers working in plants. Again, ammonia, the very substance we prize so highly and purchase so dearly, is compounded of two gases, very common and very attainable; for one of them, hydrogen, forms one-ninth of all water, and the other, nitrogen, three-fourths of the very air that we breathe. Yet, because organic chemistry cannot put together these two gases, in which all nature lives, and so form ammonia, our ships are compelled to double Cape Horn and fetch guano from the Pacific Ocean. If, then, we cannot compound the simplest organic substance, by mixing its

two or three lifeless constituents in our vessels, being thus confessedly ignorant of the laws under which they combine, what wonder that we should be unable by any chemical reasoning to perform the same task in the garden or in the field? It seems reasonable, therefore, that we should earlier scan the laws of vegetable than of animal nutrition; understand, that is, the food of beasts sooner than the food of plants.

The mineral theory hastily adopted by Liebig has broken down; no other has taken its place. Our best authority, Mr. Lawes, has established certainly so much, that of the two active principles in manure, ammonia is specially suited to corn, phosphorus to turnips, and that turnips, are probably benefitted by the woody matter or straw. But vegetable chemistry, having no fixed truths of her own as to the sources from which plants derive their food, or the mode in which they appropriate it, is not advanced enough to lay down laws for farming, or sit in judgment on its established practices. Except Liebig's suggestion for dissolving bones with acid, and Sir Robert Kane's for using flax-water as manure, I know no agricultural process arising out of chemical discovery. The more we value the labors of agricultural chemists—the more warmly we look forward, as I do, to their future progress through the patient examination of existing practice, which is itself the accumulated and varied science of ages, the more we should discourage undue expectations of immediate advantage. It is a great mistake to suppose that men can be made farmers by teaching them doubtful chemistry. But are we, therefore, to abandon agricultural chemistry because it is yet doubtful, and has not yet brought forth more fruit? Rather let those who are able cultivate it the more diligently by careful experiments, that, step by step, we may reach more certain knowledge hereafter. No one, meanwhile, can doubt the high value of Mr. Lawes's experiments in the field, or Mr. Way's researches in the laboratory. I should not have said so much, but that the public are sometimes led, by a false estimate of chemistry, to undervalue our real progress in other sciences, as in mechanics, and to overlook the true knowledge of our practical farmers. Before we pass to these, however, I must endeavor to do justice to our advance in what seems the most uncertain of all sciences.

TULLIAN GROWTH OF WHEAT: A WORD IN SEASON.

MANY of your readers will recall the correspondence that has lately appeared in the *Gazette* on the Tullian theory of growing wheat year after year upon the same land, and without manure, simply by means of preparatory deep trenching and annually digging between the rows of the growing wheat. There is so much in the principle

this involves that is opposed to the general ideas as to the all-importance of manure, and at the same time so much is to be gained in our practice, if it be true that by improved cultivation the occasion for manure for growing corn is lessened, that I am watching with great interest the progress of the seventh crop of wheat so sown, which the author of "A word in Season" has now growing, and it was with much pleasure I read the following letter from him:—Vicarage, Lois Weedon, Towcester, April 29.—My dear Sir: You have taken so much interest in my farming operations, that you will be glad, though not surprised, to hear that my 4-acre field of wheat, which you saw in the winter is attracting astonishment. It is certainly the most beautiful growing crop I ever beheld; it has all the fine qualities we look for at this season, even all over the land, and not varying an inch in healthy colour." This report of the wheat I was fully prepared to hear, from the fine appearance I saw it presented in the winter; and now let me ask what more can be said of any crop. that has had a preparation and a seeding at treble the cost? This instance of what may be done by tillage, without manure, to grow grain at much less than the usual charges, I regard as most worthy of attention. Not, as I have before said, as an example to be copied by farmers in its details, but as teaching the benefit to be gained from deep tillage and fine comminution of the soil between the growing crop; a lesson which an intelligent farmer would read to apply to trench ploughing his land, and hoeing and scarifying the ground between his young corn. The hop grower adopts the practice between his hops; in the spring of the year he turns over the ground with a fork, and breaks up the surface between the rows with his nidget, and he will tell you the practice is necessary to ensure a healthy and luxuriant growth, and the scuffling plough and scarifier have long been introduced between the rows of beans and peas, and roots on the best cultivated farms in Scotland, and the north, with great advantage to the growing crops, and still more to those that follow; and what is there to prevent a general extension of the practice to wheat, oats, and barley, now that we have Garrett's horse-hoe, which, at a cost of less than 1s. an acre, enables the farmer to perfectly hoe all corn, drilled even as close as 9 inches. In instancing this narrow width, I am far from thinking it so successful as much wider. I have long since abandoned anything nigher than a foot, and am still getting wider; I have oats and barley at 21 inches, so as to admit of the scuffling plough passing between the rows, and expect I shall find this width near enough; and how can I think otherwise, when I find Tull in ruder times could grow 4 quarters of wheat an acre, year after year, from double rows,

with 4 feet intervals, and without manure; and I see Mr. Smith realizing 33 bushels an acre for seven successive years, from three rows upon 5 feet beds, and also without manure; and I will appeal to farmers holding only arable land, whose accounts have been so kept that their stock shows its cost and expenditure and loss upon it, whether a practice which lessens the occasions for manure and for keeping of stock be not a desideratum in corn growing of the greatest importance. The lessons we have had in shed-feeding, &c. are of the greatest value in teaching us how to raise manure at least cost, but the most valuable lessons of all will be those which teach farmers to do with less manure. And now that we have learnt how to raise manure, let us see if we cannot improve our tillage, so as to go very much farther. The cost of manure raised at home is far greater, and has far more to do with the profit and loss to be made in farming than many are aware of.—*Hewitt Davies, 3, Frederick's-place, Old Jewry.*

DRAINING BY MACHINERY.

A series of interesting experiments have been lately made at the farm of Mr. Ruck, Down Ampney, Gloucestershire, for the purpose of proving the superior advantages of draining land by machinery, both in time, and expense, as compared with manual labor. The machine is an invention of Mr. Fowler, of the firm of Fowler and Fry, of Bristol. The field selected for the experiments consisted of stiff clay land, exceedingly dry on the surface, and crossed by a gravel path. The machine is formed by two horizontal iron frames, nine feet long, placed two feet apart, supported at one end by three wooden rollers, of one foot diameter, turning on axles; at the other end by two cart wheels. At the end nearest the cart wheels, and between the two frames, is supported a perpendicular plough or coulter of iron, seven feet in height, nine inches broad, and three-quarters of an inch thick; the side of this plough or coulter, intended to cut the drain, has a sharpened edge, the other side is formed into a rack, which can be raised or depressed at pleasure, by a pinion or wynch working into it, so that the plough is capable of being placed in the ground at any required depth. At the bottom of this upright plough or coulter is a socket, in which is placed a lengthened horizontal cone or plug, the point or apex in the same direction as the sharp edge of the coulter; at the back of this plug is fixed a rope, upon which is strung as many drain pipes as its length will allow; a simple process is adopted to add fresh coils of rope, as more pipes are required. A hole is then dug in the ground, say two feet deep, and a foot wide, as in the present experiment, gradually sloped at the back, so as to allow the rope with the pipes

to enter freely, and the coultter is placed upright in the hole, with its sharp edge and the point of the plug in the direction the drain is to be formed; at the end of the horizontal iron framing, farthest from the coultter, is fixed a horizontal pulley, through which a wire rope is passed, fastened at the other end to a capstan placed at the opposite extremity of the field, up to which the drain is to be formed. Four horses were harnessed to the capstan, which they turned with very trifling exertion, thus drawing the coultter through the land, the plug forming the drain and the rope with the pipes following. The time occupied in laying the nine chains of piping was thirty-three minutes, and the surface land was not more disturbed than if a knife had been drawn through it; when the coultter was drawn up to the capstan it was raised out of the ground, the rope disengaged from the plug, and the horses hitched to the other ends of the coils of ropes, which they immediately drew out, leaving the tiles accurately placed, as was ascertained by digging down to the drain. Another drain was then immediately formed in the same manner, at a parallel distance of about fifteen feet, the capstan in the same position. The estimated expense of draining land in this manner, independent of the cost of the tiles, is about 4d. a chain. From 6000 to 7000 feet can be drained in one day, at an expense of about 30s.—*Architect, June 14.*

KILNS.—Joseph Christian Davidson, of Yalding, Kent, Brickmaker, for improvement in lime and other kilns and furnaces. Patent dated November 2nd, 1850. “1. Mr. Davidson’s improvements have relation to lime kilns, in which, as usually constructed, the fire has been lighted in the kiln underneath an arch built of the limestone to be calcined. According to this method, a great waste ensues from pieces of the stone chipping off by the action of the heat, and falling into the fire, from which they have necessarily to be removed. It is now proposed to have the fire-place alongside of the kiln, and to conduct the flame and products of combustion through the side of the kiln, to act upon the limestone, which is to be piled in the kiln on an arch built in the usual manner, and so as to act as a reticulated flue. 2. The same principle is applied to the kilns used for baking bricks, the fire-places being arranged at the side of the kiln, in such a position as to make the openings in the walls thereof the throats of the furnaces.”—*From the Mechanics’ Magazine of May 10.*

How to improve the condition of the Agricultural Laborer. A self-supporting system, by which boys may be trained in acts of industry, and at the same time receive a suitable education. By THOMAS BATSON, of Colley House, Tedburn, St. Mary, near Exeter.

The education of the farm laborer in the routine of his business and the cultivation of

his mental faculties. The artisan in our large towns may obtain, in the present day, at a mechanics, collegiate, or other educational institution, a theoretical knowledge of the business to which he intends devoting his energies; and by an apprenticeship to an employer, that knowledge may be successfully brought into practice; however, it is not the case with the laborer in agricultural districts. The systems of education there are of a very contracted character, limiting it in many instances to reading and writing; but this is not the extent of mental training which his circumstances demand. The writer of this appropriate “Tract for the Times” remarks, and his observations are in accordance with our own views:—

It may, perhaps, be argued, that it is unnecessary for a man, whose life is employed in field operations, to be able to read or write; and if this were indeed the limit of education, such an argument might have its due force: for too often we find, that where there is only the ability to read or write, and the mind has not been properly trained, such partial instruction is turned to bad account, and then, indeed, it were far better that it had not been given; but, if by education we not only teach the child to read and write, but also so form the mind, that he may “eschew the thing that is evil, and do that which is good;” if, while we teach him to read, we induce him to think of what he reads; if, while we show the *effect*, we lead him to reflect on the *cause*, then we find the intellectual and moral standard is raised, and in the place of the dull stupidity which has been almost proverbial in our agricultural laborers, we have the intelligent and thinking man.

And how then, we may ask, is it, that the education of our rural population has hitherto been so imperfect? This may be attributable to a variety of causes; but the most obvious of these is to be found in the general practice of taking children from school at a very early age to employ them in acts of husbandry. The low rate of wages paid in our agricultural districts is too well known to need notice here beyond mentioning the fact; as the natural result, therefore, so soon as a child is able to earn anything, and thereby increase the small income of his parents, so soon is he sent to work, and all chance of education, beyond, perhaps, that to be obtained by an occasional attendance at the Sunday School, is entirely lost to him.

Those who are accustomed to the practical working of rural parochial schools will be well aware at how early an age children are thus taken from school, when their education is even in its earliest bud, and how rarely, if ever, there is any return.

The average time employed in education in all classes of society is estimated at eighteen months; and when we know how very

much longer time is bestowed on the education of the higher and middling classes, we cannot but come at once to the conclusion, that that of the laboring classes generally, and of the agricultural laborer in particular, must be small indeed.

On the other hand, where we find among the few exceptions a child continuing at school until he shall have obtained a fair education, we then have complaints made by the farmer that, from want of previous instruction in acts of husbandry, such a child is unsuited for his work, and hence we have one of the objections, not unfrequently raised by that class, to the education of the laborer. It would, therefore, seem necessary that a system should be adopted, by which, while the mental education were secured, the child might be instructed in the general work of a farm, by which means he would be enabled, on leaving school, at once to earn his living as a farm-laborer, with satisfaction to his employer, and with credit to himself as a respectable member of society.

That such a system may be carried out, and that the labor of the boys may be made to pay for their maintenance, clothing, and education, it is the object of this little work to show.

Having, during a space of five years, carried out these views with much satisfaction, the writer can speak with the fullest confidence as to the result; but as his object is to show the whole working of the system from its commencement, he observes, "I made the necessary accommodation for the reception of twenty boys on my premises about fifteen months since, and took them under my own care entirely, for a term of four years, boarding, clothing, and educating them, in lieu of their daily labor on the farm; their ages averaging between nine and fourteen years.

"The system that I adopted was this:—Each boy was to be provided with two suits of clothes, one for working in and the other for better use, with also a complete stock of linen, shoes, &c.; and at the expiration of the term I send them back with a like equipment.

"The working hours are from six to six in the summer, and in the winter they work while it is light.

"The meal times are at nine o'clock, when they have half an hour to breakfast; at one o'clock, an hour for dinner; and at six o'clock, when they also have half an hour for supper; and the evenings are spent in education till nine o'clock, when prayers are read, and they retire to rest.

"The food consists of bread and milk, or bread and broth, for breakfast; bread, meat, and vegetables for dinner; and bread and cheese for supper; with the addition of coffee and pudding on Sundays. According to the rule universally observed on my farm, no beer or cider is allowed, excepting during

the hay and corn harvests. The labor consists of the general farm work; but I may more particularly observe the planting or dibbling of wheat and other corn and root crops, and the hand-hoeing of corn, turnips, &c. The evening education is that of reading and writing, arithmetic, &c., and such religious instruction as time and opportunity will admit; in which, as in their daily labor, they are superintended by a young man for the purpose, who was four years at the Woburn National School, and six years at the Duke of Bedford's farm, where he also worked in a gang; to which I may add, that I make it my duty to attend personally, each evening, to assist."

MONTHLY CALENDAR OF BOY'S WORK ON KYNASTONE FARM.

February.—In commencing this calendar it may prevent the necessity of a useless repetition to remark here that, throughout the year, one boy was constantly employed in the garden and nag-stables; and that, under the superintendence of a good gardener and groom, he became very useful in each capacity. Another boy was employed each day in assisting the herdsman in attending to about forty head of cattle, and thirty or forty pigs, cutting chaff, and carting roots, hay, &c., the greater portion of the pig's food being steamed, and also some part of that given to the cattle. The remainder of the boys were employed during the month as follows:—digging land to be planted with carrots, parsnips, and other early planted roots, planting potatoes, spreading manure, taking up, cleaning and heaping Swedes, assisting at threshing, and dressing machinery, keeping birds from newly-sown corn, turning and mixing compost heaps, sorting potatoes (taking out defective ones), and the usual work with horses. With respect to this last-mentioned work, when there was any quantity of ploughing to be performed, two boys, each with a plough and a pair of horses with reins, were employed, under the superintendence of the ploughman, who usually commenced the work, and ploughed the last two or three furrows; thus the boys were accustomed to plough the same quantity of work as the men; and the work, being done by the Bedfordshire wheel-ploughs, was regular in depth and width of furrow. In taking up, cleaning and heaping Swedes, the cost at 8d. per boy per diem was 1s. 6d. per acre.

March.—Digging, setting potatoes, hoeing winter beans, sowing carrots and parsnips, turning manure heaps, attending threshing machine, picking weeds, &c., from surface of land, where sown with barley, ploughing, harrowing, rolling, and leading horses at corn-drill, and Garratt's horse-hoe. With respect to the digging, the spades used were of a suitable size, the depth being twelve inches; the ground was dug as deep as the spade would go, and the work performed

was at the rate of nine boys per day to one quarter acre of land,—cost 24s. per acre.

The winter-beans were in rows, 20 inches apart; a common 6-inch hoe was used in hoeing them, and the ground was well and deeply stirred, any couch-grass or other weed being dug up, and left on surface of land; at this work it took four boys to hoe one acre per day, costing 2s. 8d.

April.—This month commenced with a considerable amount of rain, which in a great measure put a stop to out-door operations; thus a considerable portion of the early part of the month was employed in mixing and attending to manure heaps, collecting manure in meadows, threshing, chaff-cutting, &c.; the boys were afterwards employed in planting mangel-wurzel roots for seed, digging the ground for that purpose, wheat and bean-hoeing, spreading manure in meadows; the employment for boys, with horses, consisted of rolling meadows, ploughing, scuffling, harrowing, rolling, horse-hoeing, leading out dung, &c. The wheat-hoeing cost 1s. 8½d. per acre, whilst the bean-hoeing averaged between 2s. 2d. and 2s. 6d. per acre. In this work, as in others, there may be observed a considerable variation in the cost: this depended principally on the state of the land, owing to the weather; in some few instances, however, there were spots of couch-grass, which, as the roots were carefully taken up, made the operation of somewhat longer duration.

May.—The principal part of this month was employed in hoeing wheat and beans; the other operations consisted of planting carrots and mangel-wurzel; some boys were also employed each day with the horses; and in addition to the work before spoken of, two boys were almost constantly employed horse-hoeing on the root-ground; these boys, with an active carriage-horse, and a common horse-hoe usually hoed 3½ acres per diem. The wheat and bean hoeing this month varied considerably, owing to the weather: thus, while on the 4th, thirteen boys hoed 6½ acres of wheat (½ acre each boy), costing 1s. 4d. per acre, on the 9th, the same number of boys hoed only 5 acres, at a cost of 1s. 9d. per acre. In the mangel-wurzel and carrot planting there was no account taken of quantity, this work being performed at such times as the land was made ready, and, therefore, only a small quantity at a time. The land being put into ridges and lightly rolled, the operation of planting was performed by a boy making the holes with a piece of narrow board, having pegs in it at the required distance apart (15 inches); this, having two handles, a stout boy could use it almost as fast as he could walk; thus, he employed three boys to put the seed into the holes, and two boys to cover the same with soil; and in this manner a large quantity of land

might be planted in a day. This work was so carefully performed, that in a piece of about 7 acres, there was scarcely a plant missed anywhere. The carrots were planted in like manner, the ridges being closer together, and the holes 6 or 8 inches apart in the rows; these holes, however, were made by the back of a hoe.

June.—Wheat, bean, potato, carrot, parsnip, and mangel-wurzel hoeing, hay-making, &c. &c.; and, in addition to the general horse-work, two boys were employed, nearly each day, during the latter part of the month, at the turnip-drill. The carrot and parsnip hoeing cost 2s. 4d. per acre; the mangel-wurzel hoeing cost 2s. to 2s. 4d. per acre.

July.—Making, getting together, and carting hay, employed most of the boys during a considerable portion of the early part of this month and the latter portion of the last month. Hoeing and weeding corn and root crops, drilling turnips, horse-hoeing, threshing, bird-keeping, and the usual work with the horses. No calculation has been made as to the cost of the haymaking, as this must obviously, in a great measure, depend upon the weather; that, however, this work is one peculiarly adapted for such a gang of boys, will not for a moment be doubted. In finishing the bean hoeing in the early part of the month, it took on an average two boys a day to hoe an acre, costing 1s. 4d.; mangel-wurzel hoeing, three boys per day, per acre cost 2s.; hoeing and setting out Swedes, three boys per day per acre, cost 2s. per acre. The Swede hoeing, as indeed all the hand-hoeing, was performed with the common 6-inch hoe, with a handle of from 3 feet 6 inches to 4 feet long. The boys worked in a line, one behind the other, each taking one row; thus, the first boy stood across the row of the one who followed him, and in this manner the work was undisturbed after it was hoed. The turnips were left at a distance of 10 or 12 inches apart; and as the hoe was pushed and pulled from the centre of the ridge, the whole of the land was moved.

August.—On the first of this month, the bean harvest commenced, and this work occupied the boys' time for a considerable portion of the month; the remainder of the month was employed in hoeing root crops, spreading manure, turning manure heaps (on wet days), horse-hoeing, birdkeeping, turning and putting peas together for carting, loading peas and assisting at rick, binding and stucking beans, and the usual horse work, including leading the horses at harvest cart. With respect to the bean pulling — on the first day seventeen boys (with the assistance of two men for nine hours) pulled and laid into heaps 8½ acres of beans, costing (with the addition of the expense of two men for 9 hours, say 2s. 6d.) 1s. 7½d. per acre; as each person pulled a row at a time

the boys did precisely the same amount of work as the men, and thus on the following day sixteen boys alone pulled 6½ acres of beans, costing 1s. 7½d. per acre, which was about the average cost of the work through the whole of 70 acres of winter beans; the crop was a good one, and averaged as nearly as possible 40 bushels per acre. In binding and stucking the beans, seventeen boys, in half a day, did 8 acres, costing 8½d. per acre; thus the total expense of pulling, binding, and stucking amounted to 2s. 4d. per acre.

September.—Harvesting beans as above, hoeing Swedes, assisting at wheat and bean cart, turning oats, picking beans off land after carting, turning, cocking, and raking up oats, threshing, raising potatoes (sorting them at same time), turning barley, assisting at general harvest work, and the usual work with the horses, which, in a great measure, consisted of leading at harvest cart. In turning, cocking, and raking oats, preparatory to carting them, the cost was 6d. per acre. The cost of raising and sorting potatoes, making three lots, viz., the best, seed, and the small and diseased potatoes, was 3½d. per sack. Turning barley cost rather more than 1d. per acre

October.—Raising potatoes, threshing, gathering apples, turning barley, preparing straw for thatching, chaff-cutting, spreading manure, harvest cart, and the usual work with horses. In gathering the apples, the cost was a little under one halfpenny per bushel; the cost of spreading dung averaged 6d. to 7d. per acre.

November.—Apple picking, taking in, threshing and dressing corn, carting and spreading dung, carting earth, collecting couch, digging potatoes, bird keeping, taking up mangel-wurzel, and, in addition to the usual work with horses, leading the horses at drill. The operations of taking up, topping, throwing into heaps and loading mangel-wurzel, cost 2s. per acre.

December.—Carting and spreading dung, getting in, threshing and dressing corn, digging potatoes, gathering apples, taking up mangel-wurzel, chaff-cutting, taking up and topping carrots, and work with horses as before.

Comparative value of Boys' Work in 1847 and 1849.

	Cost in 1847.	In 1849.
	per acre,	per acre.
Dibbling Wheat (5 pecks of seed per acre)	4s. 8d.	3s. 4d.
Wheat Hoeing	4 0	1 7
Hoeing Winter Beans	not stated	2 2
Turnip Hoeing	3 4	2 0
Cleaning, Heaping, and covering Swedes	4 0	1 6

This statement will show the rapid progress made by the boys in their work from continued practice, and increased age and strength.

In the autumn of 1848, the boys planted 70 acres of winter beans, in rows twenty

inches apart, with the seed five inches apart in the rows; the quantity of seed used was five pecks per acre. The rows were marked out by the coulter of Heusman's Steerage Drill, and the cost, including marking out, was 1s. 11d. per acre; in this manner, from nine to ten acres were planted daily.

HARVEST.

Harvest being the end and aim of all the farmer's labor, and also of his fears, anxieties, and hopes, through the whole year, the best plan of completing the work, and with the blessing of Providence securing his grain crops in good marketable condition, is a matter the society cannot pass over without considering, although it is presumed that every farmer is well acquainted with this part of his business.

The few following remarks will therefore be divided into two heads, viz., first, the proper time to cut; secondly, the best manner of securing the crops, with a few words on the housing, stacking, and thatching.

FIRST.—PROPER TIME TO COMMENCE CUTTING.

It is agreed that, to get a fine sample, all kinds of wheat, but more especially the red kinds, should be cut early, that is, before the berry is quite ripe, and that particular notice should be taken of the bottom part of the straw, for when that is ripe, and the bottom knot is beginning to lose its greenness, it is ready to commence cutting, and when the ears begin to turn down it is time the work should be nearly finished.

Oats, particularly the Poland varieties, both white, yellow, and black, should be cut early, as they are all very liable to shed, and the sample of the white kind, and the straw of the whole, is much more valuable for cattle when cut rather green. White tartarian oats will be quite an exception to this rule, as they do not shed, and will wait the farmer's leisure, and they are very difficult to trash when cut unripe.

Barley, when intended for malting, should remain uncut till both the straw and the grain are quite ripe, which is, when the ears turn down close to the straw, as if broken necked; when it is only intended for grinding, it may be cut earlier: but barley is a grain that does not shed easily, and when the weather is unpropitious, may safely be left standing a considerable time.

Beans may be cut when most of the pods are blackening, but may be left without much injury to them till quite ripe.

SECOND.—BEST METHOD OF CUTTING AND SECURING THE CROPS.

It is unanimously agreed that where land is sufficiently level to admit of it, and the crop is neither too much twisted about or too thin on the ground, mowing wheat is the best method, and that when it cannot be accomplished, it should be reaped as low as possible, as it is most beneficial to get all the straw home that can be obtained to make

manure, therefore, it is the opinion, that stubble left on the land is of little, if any, use to succeeding crops. The sheaves should be made small, the knots of the bands well tied, but the sheaves not bound tighter than will secure their safe passage into the barn or stack, without falling to pieces. Wheat should be bound up immediately after cutting, if sufficiently dry, and carefully hooded; the knots, if green, will feed the kernel a little, if set up directly, before the straw gets scorched by the sun, which it does when lying down. When mowed, it will be ready for the barn or stack, sooner than when reaped, for the straws not lying so straight, allows the wind to draw through it more freely.

Oats should be mowed, if possible; they often shed very much if reaped; they should also be tied in small sheaves. White oats, when intended for sale, should be tied up as soon as cut, if sufficiently dry, and very carefully hooded and left in the field a considerable time, till thoroughly dried; but other kinds of oats or even white ones, if intended for home use, may be left in swarth for a couple of days with advantage, as it will make them much sooner ready to get home, and forward the work of the harvest.

Barley should be mowed, and if intended for maling, should be bound up and carefully hooded; but if only for grinding may be left and carried, also, from the swarth loose.

Beans should be reaped and tied in small sheaves with straw bands, but if cut rather green the bean straw will do for the purpose; they should be carefully set up, have plenty of field room, and a good bright day should be chosen for carting them home, as a strong dew, even, has been found to take off the brightness of a sample.

Peas not being found to answer well in the district, it is unnecessary to enter into any particulars concerning them.

HOUSING, STACKING, AND THATCHING.

In regard to the first head it is only necessary to say, that what is carted into the building should be in first-rate order, and fit to be taken to market immediately. It is agreed that in this district large stacks are improper; each one should only contain from 100 to 120 thraves of 24 sheaves each; the bottom of the stack, if made round, should be under 5 yards diameter; the building of it should commence by placing a lot of sheaves nearly upright in the centre, and all the way up the centre should be kept pretty full, but very much so in the roof, that the outside sheaves may all slope downwards to throw off the wet; this is of great importance, as showers are sometimes heavy and sudden in harvest; the walls of the stack should be carried quite upright, but to keep it so depends more on the laying of the inside than the outside; sufficient attention is not gene-

rally paid to the packing of the sheaves in the centre of a stack, and a good, careful, active man should always be selected for this post, as much depends upon him. No time should be lost in thatching after the stack is built, and the straw should be well tucked into the roof; the cording can then be left till the stacks are settled into shape. Beans should be put into smaller stacks than other grain, as they harden very slowly.

Every farmer is naturally anxious to be able to calculate as near as possible, what will be the amount of his year's produce; the following simple and easy plan will afford him this information, near enough for any practical purpose, either for his whole crop of grain, or any particular field or experiment he may wish to prove. It is as follows: a person should walk through the crops when they are cut, and place in every thirtieth haddock a small bough or other mark, and let these so marked, be carted and stacked, or put into the barn separate; and when they are threshed and the quantities multiplied by thirty, it must give with sufficient accuracy the total quantity grown; care, of course, should be taken to mark the haddocks evenly and fairly.

ON THE CULTIVATION OF HEMP.

Hemp requires for its growth a soil of deep, rich, moist alluvium, such as is found in the best parts of Lincolnshire, where the ingredients of the earth are numerous, finely comminuted, and very intimately mixed. It will thrive on friable loams, and on loamy sands, provided the culture be rich, and the manuring abundant. On the latter soils the produce is not so abundant as on black ich moulds, but the quality is finer, and can be used for more valuable purposes. The land must be very perfectly cleaned and heavily manured, or made very rich by the previous cropping. If freshly manured, the quantity may be 16 to 20 loads of dung on an acre. On this rich and pulverised surface, two bushels of Hemp seed are sown by the hand in broadcast, during the two first weeks of the month of April, and covered by a light and gentle harrowing. The heaviest and brightest colored seed should be selected, and some of them should be cracked to see if they have the germ perfect. Birds must be scared from the sown ground till the plants appear. It has been practised to hoe the crop, setting the plants at 12 to 16 inches apart, cutting down all weeds, and repeating the hoeing at the distance of a month or six weeks; but when the culture of the land is proper, the plants very soon cover the ground and kill every weed.

In about four months after sowing, the plants of Hemp turn yellow in the leaves, and the stalks become white, when the crop is ready to be pulled. When thread only is intended, without any regard to the seed, the whole produce is pulled at once; when ripened

seed is grown, the male plants are first pulled, usually in August, and the female ones afterwards, in the beginning of October, when the seeds are seen to be ripe. In both ways the stems are tied in bundles of about a yard in diameter, and with a rope at each end. The crop is then conveyed to the steep of water, in order to undergo the operation of water-retting. The bundles are placed in rows crossing each other, and are kept under water by blocks and logs of wood. It soaks generally four to ten days, if the weather be warm; if not, five or six more, till the outside coat easily rubs off. It is then spread out singly on grass, and turned, if there be showers, thrice a week; if not, twice a week. This is called grassing, and requires five or six weeks. It is then tied up in large bundles, and carted to a barn or house for breaking, by a machine called a "brake;" this is either done directly, or the bundles are laid up to dry for the future purpose. The Hemp being beat and broken by the hand or mill, is dressed or combed, by being drawn through hickles or heckles, resembling wool-combers' tools, only fixed. The Hemp that is broken off by the operation is called "shorts; this is bound up by itself, and is about the value of the long Hemp. The offal is called Hemp sheaves, and makes good fuel. Sometimes the Hemp is dressed to one quality of fineness, or it is made into two or three sorts, as the demand of purchase may direct. The heckler sells the Hemp to be spun for thread, or himself applies it to that purpose. Being converted into yarn, it is sent to the "whitester," who returns it in a bleached condition.

The female plants of Hemp produce the ripened seeds, and for that purpose remain longer on the ground. The pulled bundles of tied stems are stacked up or housed till the seed be threshed out. In the spring (January or February) the stems are spread upon grass, and if the season suits, particularly if covered with snow, it will come a good color, and make a strong coarse cloth; but it is much inferior to Hemp pulled in proper time, and water-retted or steeped. Although Hemp, in the process of manufacturing, passes through the hands of the breaker, heckler, spinner, whitester, weaver, and bleacher, yet many of these operations are frequently carried on by the same person. Some weavers bleach their own yarn and cloth; others their cloth only. Some heckle their tow and put it out to spinning; others buy the tow and put it out; and some carry on the whole of the trade themselves. When the trade is conducted by different persons, their interests often clash. By under-retting the Hemp, the grower increases the weight; by slightly beating it, the heckler increases the quantity of tow, but leaves it fuller of bark; by drawing out the thread beyond the staple, the spinner increases the quantity of yarn, but injures the quality; by forcing the bleaching, the whitester increases his pro-

fit, but diminishes the strength of the yarn. In general, in manufacturing cloth, strength is sacrificed to fineness and color.

The average produce of an acre of Hemp may be estimated at 40 stones, or £16 in money. The expense per acre may be about £10, leaving £6 for profit, along with seed (£4).—*J. D.*

WHAT EDUCATION OUGHT TO BE.

The following exceedingly interesting letter has appeared in the *Scotsman*. It is addressed to the editor, by Mr. George Combe, and gives an account of the examination of one of the British and Foreign School Society's seminaries at Camberwell:—

Sir,—As it may be interesting to the citizens of Edinburgh to learn what their brethren in London are doing to prepare the rising generation of the working classes for acting their parts in social life, I beg your permission to report a few particulars of an examination of one of the British and Foreign School Society's seminaries, at which I was present, on the 25th of June. The school is situated in Camberwell, and is conducted by Mr. Holmes, with the aid of seven pupil teachers. It is attended by 300 boys (the girls' school is separate), who pay 3d., and some 4d. per week. There is no endowment or other fund for the remuneration of the teachers except the fees. This was the second night of the examination, and only the elder boys were now in attendance.

They first read, with great precision and correct inflections of voice, a section of the fourth book of lessons, issued by the Irish National Education Commissioners, page 224, edition 1848. It treated of taxes—the causes of the necessity for them; the extent to which they benefit the contributors; how they become injurious and unjust, &c. The boys were then examined on the subjects of the lesson, and their answers showed a clear comprehension of the matter, and not a mere repetition of the words of the book. I was astonished at the complete and finished sentences in which they announced their answers, which had evidently been taught to them, yet without producing the effect of rote. Judgment and understanding evidently accompanied the words. This teaching of precise, well-formed sentences, without rote, is extremely difficult with Scotch children, owing to their want of the vernacular use of the English language.

After reading came spelling and grammar, in both of which the children showed great attainments. They then proceeded to the logical analysis of sentences. To test their powers, the chairman gave a sentence which was written down on the black board, and the boys first analyzed the words grammatically, and then considered them logically; and in all these exercises showed a precision and readiness which indicated a mastery of the subjects.

Specimens of penmanship and vocal music next followed, and still "the wonder grew, that heads so young could carry all they knew."

The next subject was mechanical philosophy, in connection with chemistry. The laws which govern the conversion of water into steam, the expansive power of steam, the pressure of the atmosphere, and similar topics, were minutely and accurately expounded by the boys. Drawings and a model of the steam-engine by Mr. Cowper, professor in King's College, with the most recent improvements, were exhibited, and an examination on the different parts of the machine, their purposes, and the principles in mechanical philosophy on which they were constructed, ensued, and it was so minute and practical that the scholars seemed like engineer students undergoing trials for a degree. They expounded the differences in construction between high and low pressure engines, condensing, and non-condensing, and locomotive engines and the advantages or disadvantages of each.

They then proceeded to mathematics and geography. In the latter the teacher drew with chalk the map of America on the black board, and the boys announced the name of every bay, coast, and promontory, river, mountain, town, and state, as fast as it was delineated. The subjects of anatomy and physiology, illustrated by a skeleton and numerous large diagrams, were prepared, but the late hour prevented the examiners from entering into them.

The next topic selected, therefore, was social economy, and the first question was—"By what means do you expect to live?" "By skill, industry, and economy," "How will you start?" "Low." "What do you mean by 'low'?—do you call a man low because he lives by his labor?" Here there was a pause and hesitation. "Does the lawyer, the physician, or surgeon live by labor?" "Yes." "Do you call them low?" "No." "Then why should any other men who live by labor be called low?" "How can a man who has nothing gain his living by labor?" "By selling it." "To whom does he sell it?" "To the capitalist." "From what fund does the capitalist pay his wages?" "From his capital." "What kind of wages do you expect to get at starting?" "Low wages." "If these wages are not enough for you to subsist on, how can you live?" "Our parents would assist us." "What kind of parents will be able and willing to do this?" "Good parents." "When you become full-grown men, if your wages are not sufficient to maintain you, how will you manage?" "We shall be miserable paupers." "Is it not, then, very cruel in masters to give full-grown men inadequate wages?" Several boys answered "No." One said, "Perhaps they can't afford to give more." "What do you mean by inadequate wages?" "Wages

that are not enough for a man to live on, and save out of for his old age." "What does the capitalist consider adequate wages?" "Wages in proportion to the value of what the laborer can produce." "If a laborer can produce to the value of £3, and the capitalist would not pay more than 10s. per week wages, what will probably happen?" "Other masters would offer such a laborer more." "Suppose other masters did not offer to do this, would the laborer then get higher wages?" "Yes, for he would then look out for himself to find masters who would." "What makes you think that he would be likely to do that?" "The same intelligence which made him capable of earning good wages would lead him to look out for a master to pay them." "If the produce of another workman's labor is worth not more than 10s. a-week, what wages would he find any capitalist willing to give him?" "Less than 10s." "If the produce of a man's labor were worth nothing, what wages could he get?" "None at all." "Is it not cruel, then, for the capitalist to give such a man no wages, and the other less than 10s. a-week?" "No, for if the capitalist gave more he would soon be ruined." "How, then, is the man, whose labor is worth nothing, to live?" "Society must support him." "How does the capitalist judge whether wages are adequate or not?" "By the value of what the workman produces in comparison with the wages." "What, then, is a better term than 'inadequate,' for wages that are not enough to maintain the laborer?" "Insufficient." "What do you mean by sufficient wages?" "Wages large enough for a man to live on, and save out of for his old age." "How can a man obtain such sufficient wages?" "By acquiring skill and intelligence in youth, and practising industry and economy throughout his life." "How can society protect itself from paupers?" "By promoting that kind of education and training that will give those qualities to all the young." "Do not farmers sometimes say that they cannot pay high wages because they pay high rents?" "Yes." "Does this really prevent farmers from paying high wages?" Here there was a pause, and no answer. "Are the farmers compelled to pay high rents?" "No." "Why do they pay high rents?" "Because they expect, after paying them, to have as much or more profit left than they could obtain by taking a worse farm at a lower rent." "Which farmers, then, may be supposed least capable of paying high wages?" "If all had equal skill, capital, and activity, they would all be able to pay alike?" "But suppose that a farmer engages to pay a higher rent than, with his skill and capital, he can afford to pay, what will happen?" "In that case he will have miscalculated, and will lose his capital, and be unable to pay wages to any one." "Might this happen with a capitalist far-

mer who pays no rent?" "Yes." "Why?" "Because if he mismanaged his business he would be ruined." "To whom, then, must laborers look for wages?" "To those capitalist farmers who know how to manage their business, and who do not engage to pay rents which their skill, capital, and industry will not enable them to extract from the farm."

"Do any other capitalists pay rent besides farmers?" "Yes, merchants and shopkeepers." "What do they pay rent for?" "For the premises which they occupy." "Which shopkeepers pay the highest wages, those who pay high or those who pay low rents?" "Those pay the highest wages who pay the highest rents." "Why?" "Because they must conduct their business very skilfully, and to do this they must have the best workmen, and skilful workmen cannot be had without high wages." "How then do you expect to get good wages?" "By qualifying myself to enter the service of those who best conduct their business," "How can you qualify yourself for their service?" "By acquiring skill and good conduct."

"Is it not hard to have nothing to look to but work at starting in life?" "No; the necessity of working helps to strengthen good habits previously formed." "Which lads, then, are most likely to prove successful and happy through life; those who start with the possession of wealth, or those who have nothing but the capability of earning it?" "The latter." "Why so?" "Because the possession of wealth, without having made exertion to earn it, has a tendency to make people idle, wasteful, and unskilful; while the reward of the effort to earn has the tendency to make them industrious, skilful, and economical, and only the latter are successful and happy." "Do not masters sometimes plead want of money as a reason for giving small wages to their workmen?" "Yes." "What seems the natural remedy for want of money?" "To increase the quantity of it." "What would be the effect of increasing the quantity of money?" "To lower its value." "How would that be shown?" "By a rise of prices." "Would the increase of the quantity of money, then, raise wages?" "Yes; money wages, but not real wages." "What do you mean by real wages?" "The quantity of the necessaries and comforts of life which the laborer is able to purchase with his money wages." "Why should not his real wages be increased?" "Because commodities would rise in proportion to his money wages." "How may real wages, then, be increased?" "By an increase of capital greater in proportion than the increase of the number of the laborers." "How may this be brought about?" "By improved knowledge, skill, and industry to produce, and by greater economy to save." "Who, then, can aid most efficiently in bringing about these improvements?" "Good

parents, by providing for the teaching and training of their children." "What ought to be the feeling of children who are so fortunate as to be blessed with such parents?" "Those of gratitude and affection." "When do people begin to be good parents?" "When they are young." "What ought you to be doing now, in order to become good parents hereafter?" "Striving to acquire knowledge and good habits."

I took notes of this part of the examination, on account of its comparative novelty and its practical importance, and can assure your readers that neither the questions nor answers were prepared for the occasion, but were entered on at a moments notice as part of the general instruction in social science.

It was now ten o'clock at night, the examination having commenced at six; and after handsome compliments, and a practical address, by the chairman, to Mr. Holmes, the assistant-teachers, and the boys, a visitor, after bearing testimony to their great merits, added that he had been in France, and observed the state of its population, and he was certain that had such a system of teaching as this been introduced thirty years ago into the common schools of that country, the revolution of 1848 could not have happened. I ventured also to compliment the teachers and scholars, and bore my willing testimony to the fact that in no country which I had visited had I seen superior teaching.

I beg to add that in London and the suburbs there are seven schools at work, educating upwards of 2,000 children in this manner: an eighth is in preparation; and one has recently been opened in Manchester. Let the managers of charity and public schools, and the teachers of private schools all over Scotland lay these facts to heart, and consider whether they are preparing to send forth young men and women of the rising generation who will be able successfully to compete with the pupils of these English schools for the prizes of life in the great establishments of London and the provincial towns.

I am, sir, &c.,

GEO. COMBE.

EXTRAORDINARY WEIGHT OF WOOL.—Mr. Clarke Halse, farmer of Bassingbourne, near Royston, Cambs, son of Mr. Clarke Halse, farmer of Navenby, near Lincoln, this year clipped 13 hog sheep, the fleeces of which weighed as follows: one 21½lbs., another 20 lbs., and the remaining 11 averaged 15lbs. each.

CONICAL FLOUR MILL COMPANY.—There is, perhaps, no description of machinery the principles of which it is more important should be correct than that for the conversion of corn into flour, and it has long been known that the principle in general use—that of the horizontal stones in pairs—is erroneous, and that the flour produced is no

of that nutritious quality which can be produced from the same wheat by other means. This evil arises from an absorption of the gluten of the flour, in consequence of the heat engendered by the great pressure necessary to grind it, and the velocity of the stones to enable the centrifugal force to deliver it, and it is somewhat surprising that of the vast number of engineers who have been engaged on flour mills some improvement has not long since been made. There is in the Exhibition, Class 6, No. 442, a flour mill called a "conical mill," patented by Mr. Westrup; and, as the name implies, the stones are conical instead of horizontal, there being two pairs, one above the other, with a working surface of only eight inches, instead of 2 feet. By the upper pair of stones the wheat is broken, and delivered in a state of half-ground meal, unheated; this falling on to the lower pair is instantly converted into flour, without undue pressure, which, by the laws of gravity alone, falls into a wire cylinder below. The lower (or running) stones are keyed upon the shaft, while the upper ones are stationary, but rise and fall on four inclined planes, and are capable of regulation to the utmost nicety, wholly relieving the wheat from any injurious pressure, while that by the horizontal stones is at least three-quarters of a ton. Various experiments have been made in grinding wheat of different qualities by the stones now in use, and by the mill now noticed, under the direction and superintendence of several gentlemen of undoubted practical experience, which leave no doubt of the great superiority of this invention. A company is now formed (in the directorate of which will be found the names of gentlemen well known to the milling trade, and to the public, as practical men), the object of which is to raise a capital of £150,000, divided into 15,000 shares of £10 each, to erect mills on this principle, and grant licenses for their use; it is to be incorporated by Royal Charter, and is provisionally registered. The patent right has been purchased, and it is stated that at a cost of one-half the steam-power, fuel and labor usually employed, a larger quantity of flour will be produced in the same time, and superior in farinaceous quality. The prospectus assumes the population of the metropolis at 2,500,000, and that the consumption of each individual is the produce of a quarter of wheat per annum, or 382lbs. of flour, giving 65,590 sacks per week, a saving on which of only 3 per cent., amounts to upwards of 10,000,000 of 4lbs. loaves per annum, which, at 6d. per loaf, is equal to £250,000 in London alone."—*Mining Journal*.

THE GREAT YORKSHIRE AGRICULTURAL MEETING.—The show this year, on the 5th and 6th of August, at Bridlington, will, we understand, be one of very peculiar interest. The district so celebrated for sheep and

horses is likely to do itself credit, and the new class of Southdown sheep will be a new feature of interest. The great dinner is being given up for a far more interesting spectacle; viz., the drawing out of all the prize animals into a ring, from three to four o'clock, and the reading out of the premiums in the field. The council dinner will have, besides the usual attractions of a paper and discussion, the presentation of a dinner and tea and coffee service of plate to Mr. Milburn, the secretary, for his zeal and activity in that office, and services to agriculture generally; especial care is also to be taken in the trials. Mr. Amos, C. E., is to attend with his novel draft gänge, to test the draft of the thrashing machines, &c., and the railway companies are giving trips for a longer or shorter period from all the great towns of the north and west of England; so that, in addition to the show, a visit to a magnificent coast and a few days of sea air will be afforded to the thousands who will doubtless avail themselves of the trip. We hear there is likely to be a spirited contest for the society's next meeting, between Sheffield and Rotherham; and both are very determined not to be beaten, if possible. The fact of a meeting causing an expenditure in a town of £1,200 to £1,500 is a great inducement to make the application.

ANECDOTE OF A NEWFOUNDLAND DOG.

A gentleman connected with the Newfoundland fishery was once possessed of a dog of singular fidelity and sagacity. On one occasion a boat and a crew in his employ were in circumstances of considerable peril, just outside a line of breakers, which—owing to some change in wind or weather—had, since the departure of the boat, rendered the return passage through them most hazardous. The spectators on shore were quite unable to render any assistance to their friends afloat. Much time had been spent, and the danger seemed to increase rather than diminish. Our friend, the dog, looked on for a length of time, evidently aware of there being great cause for anxiety in those around. Presently, however, he took to the water, and made his way through to the boat. The crew supposed he wished to join them, and made various attempts to induce him to come aboard; but no! he would not go within their reach, but continued swimming about a short distance from them. After a while, and several comments on the peculiar conduct of the dog, one of the hands suddenly divined his apparent meaning: 'Give him the end of a rope,' he said: 'that is what he wants.' The rope was thrown—the dog seized the end in an instant, turned round, and made straight for the shore; where a few minutes afterwards boat and crew—thanks to the intelligence of their four-footed friend—were placed safe and undamaged. Was there *reasoning*

here? No acting with a view to an end or for a given motive? Or was it nothing but ordinary instinct?—*Rev. J. C. Atkinson in 'The Zoologist,'*

ADULTERATION OF FOOD.—The last investigations of the *Lancet* with regard to the adulteration of articles of consumption have been directed to cocoa, oatmeal, and the various compounds sold as farinaceous food. Out of 56 samples of cocoa only eight were entirely genuine, the rest being mixed with sugar and starch was derived from wheat or potato flour, sago meal, &c., and as sometimes all these are found in one preparation, it is suggested that the combination may be caused by the use of dock or warehouse sweepings. In some sugar was found in proportions of from 5 to nearly 50 per cent., and in others the same results as respects starch. The proposed object of the adulteration is to render the article more agreeable and digestible, and neither sugar nor starch can be objected to as injurious, but their price is greatly below that of genuine cocoa, and the sale of them as "genuine" or "pure" cocoa, or under the simple name of cocoa, or under the simple name of cocoa, without something to express that they constitute a preparation, is therefore wholly indefensible. Frequently, moreover, the adulteration is not limited in this way, since the effect of mixing large proportions of starch and flour with cocoa is to produce a lightness of colour which attracts remark, and colouring matter, consisting of red ochre, or some analogous substances, is constantly introduced. With reference to oatmeal—an article which, from its cheapness, was supposed to offer little inducement for adulteration—it appears that out of 30 samples, no less than 16 were found to contain a large mixture of barley-meal, the market price of which is just one-half that of oatmeal. The chief sufferers in this instance are the inhabitants of workhouses, prisons, and charitable institutions, the managers of which very often look only to the lowness of the tenders sent in, and are content to take articles which they must know to be greatly adulterated, since the contract prices are far below the actual current rates. The life-sustaining properties of barley-meal are shown to be very inferior to those of oatmeal; and the public are reminded of the fact that in the investigation last year regarding the mortality among the workhouse children at Tooting, the oatmeal, which formed a considerable part of their food, was found to have been extensively adulterated with barley-meal. The investigations of the various descriptions of farinaceous food, the principal of which are sold at prices ranging from 1s. to 2s. 9d. per lb, have resulted in showing them to be made up of the French, German,

or Egyptian lentil, with wheat and barley-flour, Indian-meal, tapiocs, sugar, common salt, &c., according to the peculiarity desired to be given by each manufacturer. In one case the material was found to be artificially coloured with an article believed to be rose pink, and it is proved that even the best and choicest specimens of these foods can be composed by any persons with very little trouble at a cost of about 2d. per lb.—*Times.*

WHEN THE AUTUMN LEAVES ARE FALLING.

BY J. E. CARPENTER.

When the autumn leaves are falling,
And the flowers have lost their prime,
And the bird to his mate is calling
To soar to a brighter clime;
The heart, that is bowed by sorrow,
Now sinks in a deeper gloom;
For we know that the coming morrow
May wither some lingering bloom.

When the shadows of evening lengthen,
And we muse on each passing grief,
The hopes that we strive to strengthen,
We feel, like our joys, are brief;
And the leaves, as they fall around us,
They tell us how short our span;
As the flowers that the spring-time found us,
So fades every hope of man.

Yet we know when the leaves are falling,
And the forest is stripp'd and sere,
That we have a higher calling
Than to live for this dark world here;
And the shadows of autumn chasten
The heart that is bow'd by grief,
And we long for that spring to hasten
That shall come to the soul's relief.

TAOU CANST NOT THEM BACK.

Give not a sigh for early hours,
For treasured scenes of yore;
For broken buds and faded flowers,
That drops of beauty bore.
Give not a sigh for things gone by,
Through brilliant be their track;
Those visions gay have passed away—
Thou canst not call them back.

Give not a sigh for youthful hopes,
That faded ere their prime;
That Fancy held in golden cups
To deck the brow of Time.
A! far too soon the brightest moon
Will change to deepest black;
And things as gay will pass away—
Thou canst not call them back.

Give not a sigh for stones that feel
Like music to thine ear—
The loved and lost to mourn if well,
When there are none to cheer.
But if to bless and to caress
Some linger round thy track,
Give not a sigh for those gone by—
Thou canst not call them back.

Agricultural Journal

AND
TRANSACTIONS
OF THE

LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, SEPTEMBER, 1851.

Pursuant to written notice to the Directors, addressed to each by the Secretary, a special meeting took place at the Rooms of the Society on the 17th of July, 1851.

GENTLEMEN PRESENT :

Alfred Pinsonneault, Esq., Major Campbell, P. L. Latournoux, H. L. Langevin, H. Latour, and Wm. Evans, Esqs.

P. L. Latournoux, Esq., Vice-President, being called to the chair—

Alfred Pinsonneault, Esq., proposed to place his farm at La Tortue consisting of about 500 arpents at the disposal of the Lower Canada Agricultural Society, to be managed under their superintendence as a Model Farm, for the term of five years, from the 1st day of September next, with all the stock of horses, cattle and swine now upon it, and the agricultural implements, to be taken by the Society at a valuation by competent persons. The stock and implements upon the farm at the end of the term of five years to be given up to Mr. Pinsonneault, also, at a valuation made by competent persons—upon the following conditions, viz:—

That the farm shall be managed by the Society as a Model Farm: That ten arpents of land shall be thorough drained annually by the Society, and at their expense, in a proper manner: That the buildings, stock and produce, be insured regularly by the Society and at their expense: That the buildings, fences, drains, &c., be kept in good order during the term, allowing for reasonable wear and tear: That the society pay the local taxes, and perform the usual duties to which farms are liable in the country.

After some discussion, it was proposed that in consequence of so few members

being present, the discussion of the question be put off and a meeting of the Directors invited to take place on Friday the 1st day of August next, and the Secretary be instructed to write to each of the Directors and state to them the object for which the meeting is called.

The meeting then separated,

By order,

WM. EVANS,

Secretary and Treasurer, L. C. A. Society.

Montreal, 17th July, 1851.

Pursuant to written notice addressed to the Directors by the Secretary, in conformity to the resolution adopted at the special meeting on the 17th July, last.

A special meeting of the Directors of the Lower Canada Agricultural Society took place at their rooms in this city on Friday the 1st day of August, 1851.

GENTLEMEN PRESENT :

Major Campbell, the Rev. F. Pilote, Alfred Pinsonneault, P. L. Latournoux, Esqs., The Hon. P. De Boucherville, P. E. Leclere, F. A. Larocque, Esqs., The Hon. Adam Ferrie, A. Kereskouski, H. L. Langevin, H. Latour, J. Vincent, John Yule, M. Valois, and Wm. Evans, Esqs.

The Hon. P. De Boucherville handed the Secretary a donation of five dollars, being the third donation he had given since he became a Life Member of the Society. He at the same time expressed his willingness to contribute further towards the funds of the Society if necessary, and his anxious desire to see the Society in full prosperity.

The Hon. P. De Boucherville, Vice-President, being called to the chair, the business for which the special meeting was called was explained to the gentlemen present. The Secretary presented a letter from Mr. Robert W. Lay, the publisher of the Agricultural Journal, addressed to the Directors of the Lower Canada Agricultural Society, with a statement of the amount of subscription due for the Agricultural Journal, previous to the 1st of Jan-

uary, 1851, which he had collected for the Society.

The letter having been read, the Secretary was instructed to write to Mr. Lay and inform him that he should apply to the Finance and Journal Committees on the subject of his letter, addressed to the Directors.

The proposition of Alfred Pinsonneault, Esq., relative to his farm at La Tortue, was then finally discussed, and the following Resolutions proposed, and adopted:—

That the Society accept of the liberal offer made by Alfred Pinsonneault, Esq., to give to this Society the enjoyment of his farm at La Tortue, upon the condition that the said Society shall not give more than three hundred pounds, currency, during the current year, to carry on the Model Farm and School; Mr. Pinsonneault binding himself to pay the surplus if any is required, and, moreover, to reimburse to the said Society, the said sum of three hundred pounds, currency, if, at the expiration of the ensuing year, the Legislature, upon the petition of the Society, refuse to vote the funds required for the establishment and support of the Agricultural School proposed to be maintained upon the said farm.

That a Special Committee, composed of Major Campbell, John Yule, M. Valois, P. L. Latourneux, A. Kierskowski, P. E. Leclere, and H. L. Langevin, Esqs., be instructed to prepare contract and agreements between the Agricultural Society of Lower Canada of the one part, and Alfred Pinsonneault, Esq., of the other part; and between the said Society of the one part, and Mr. Ossaye of the other part, relative to the projected Model Farm, and to the establishment of an Agricultural School.

It was determined that the Special Committee should assemble at these rooms on Friday next, the 8th day of August, instant, at ten o'clock, A. M., for the purpose of discussing and determining upon the contracts and agreements referred to in the foregoing Resolution.

The following Resolution was then proposed:—

That the sincere thanks of the Directors of the Lower Canada Agricultural Society be given to Alfred Pinsonneault, Esq., for his liberal and generous offer, and that this very good example be made known as widely as possible, so that all friends of progress and of the country at large may appreciate fully the advantages which may be derived from the proposed establishment.

The Resolution of thanks to Mr. Pinsonneault passed unanimously.

The Hon. P. De Boucherville having left the chair, Major Campbell was called thereto—

When a vote of thanks was passed unanimously to the Hon. P. De Boucherville for his dignified conduct as chairman of the meeting.

The meeting then separated,

By order,

WM. EVANS,

Secretary L. C. A. S.

1st August, 1851.

A special Committee of the Directors met on the 8th day of August, 1851; gentlemen present: Major Campbell, P. L. Letourneux, M. Valois, Alfred Pinsonneault, L. E. Leclere, A. Kierskowski, and Wm. Evans, Esquires. Mr. Letourneux Vice-President, having taken the chair, Mr. Ossaye, a gentleman lately arrived from France, was called before the meeting, and submitted the draught of an agreement between Mr. Pinsonneault and the L. C. A. Society, relative to the Farm, Stock, &c., offered to the Society by that gentleman for a Model Farm, and after considerable discussion, it was adopted. Mr. Ossaye then submitted the draught of an agreement between the Society and himself, as superintendent of the Model Farm, which was also adopted, and both documents were then signed by the members present and by Mr. Pinsonneault and Mr. Ossaye. The Secretary was instructed to take these documents to the Notary,

Mr. Doucette, and have them perfected before him. The Secretary was further directed to call the Quarterly Meeting of the Directors to take place on Friday, the 15th August.

The Quarterly Meeting accordingly took place on Friday the 15th August 1851. Gentlemen present: Hon. Adam Ferrie, Major Campbell, Alfred Pinsonneault, Alfred Turgeon, H. L. Langevin, M. Valois, John Fraser, F. A. LaRocque, M. Leprohon, P. L. Letourneux, D. Laurent, J. Hurteau, J. G. Gilbault, John Yule, A. Kierskowski, and Wm. Evans, Esquires.

P. L. Letourneux, Esq., Vice President, was called to the Chair.

The proceedings of the former special Meetings relative to Mr. Pinsonneault's Farm were submitted, and after considerable discussion, and some alterations made in the Contracts proposed between the Society and Mr. Pinsonneault and Mr. Ossaye, they were finally approved. The following Resolutions were then proposed and adopted: viz.,

That the thanks of the Directors be voted to Alfred Pinsonneault, Esq., for his liberality in placing his Farm at La Tortue at the disposal of the Society, and for his promise made this day, that in case the Provincial Legislature shall make any provision this Session for the establishment of a Model Farm or Farms, he, Mr. Pinsonneault, would take his farm off the Society's hands, and refund to the Society all the money advanced by them on account of it. That the Report of the Special Committee of the arrangement they made with Alfred Pinsonneault, Esq., respecting his Farm be approved, and that the Vice President of the Society, P. L. Letourneux, Esq., be authorized to affix his signature to the contract so recommended with the amendments made to it this day, and the Secretary of the Society is authorized to countersign this Contract after it has been finally submitted to the Committee of Directors selected this day, as a Board for superintending the Model Farm.

That the Contract submitted of the arrangement made between the Society and Mr. Ossaye be confirmed, and that the Committee of Directors elected this day as visitors, and superintendents of the Model Farm, be authorized to transact business with the said Mr. Ossaye in all matters connected with the said Model Farm, and the President, or in his absence the Vice-President, P. E. Letourneux, Esq., be authorized to sign said Contract with Mr. Ossaye, and that the Secretary of the Society be authorized to countersign it.

That the following Directors of the Lower Canada Agricultural Society for the present year be appointed a Committee for Inspection and Management of the Model Farm, at La Tortue for this year, viz:—

Rev. Mr. Désaulniers, Hon. A. N. Morin Major Campbell, A. Kierskowski, P. E. Leclere, John Yule, M. Valois, E. Cartier, Alfred Pinsonneault, David Laurent, Joseph Vincent, J. Hurteau, F. A. Larocque, John Fraser, M. Leprohon, Esquires, and the President, Vice-Presidents, and Secretary.

Resolved that Provincial Ploughing Matches be held this Fall by this Society, one in the District of Montreal, and one in the District of Quebec, and that Fifty pounds, currency, be appropriated for each from the grant made to this society by the Provincial Legislature the present Session, and that the following gentlemen be named as a Special Committee to carry this Resolution into effect, viz.: Major Campbell, Alfred Pinsonneault, John Yule, Alfred Turgeon, David Laurent, M. Valois, Esqrs., and the Secretary of the Society.

A meeting of the Special Committee of Directors of the Model Farm, elected this day, was ordered to take place on Friday the 23rd day of August, instant.

The meeting then separated.

By Order, WM. EVANS,
Secretary and Treasurer, L. C. A. S.
15th August, 1851.

The contracts made with Mr. Pinsonneault and Mr. Ossaye will appear in the next number.

The reverend gentlemen of the Seminary at Quebec, having determined to establish a Model Farm and Agricultural School on their property at St. Joachim, about 30 miles below Quebec, on the north side of the river St. Lawrence, at their request we accompanied one of these gentlemen, the Rev. Professor Horan, to that place a few days ago, for the purpose of selecting a suitable situation. After seeing several farms belonging to the Seminary, one was fixed upon that has a good house and out-buildings upon it, and a variety of soils suitable for experimental farming. It is beautifully situated, and whatever quantity of land would be required may be had. It has some soil of inferior quality, where there will be ample opportunity to show what an improved system of agriculture may effect. The land requires draining, but there is a sufficient fall to admit of this necessary work being accomplished. The house and farm buildings are upon an elevation that will be very favourable for cellars and out-houses; and the farm is well sheltered from the north, north-west, and north-east by a mountain range—a great advantage, and must improve the temperature of the place. The water is already conveyed into the house and stables from the high lands, and this is a valuable convenience for a Model Farm. There is a good road from Quebec, macadamized the greater part of the way, and it will also be accessible by the river St. Lawrence. The Seminary has a beautifully situated establishment near this farm, with a large house that would have ample accommodation for an Agricultural School. There is also a small church erected upon the place. The land at this latter place is partly covered with wood, but there is sufficient of it cleared for an ample garden. The wooded lands have gravel walks for exercise, and the place altogether would be exceedingly well adapted for an Agricultural School, and not too far from the Model Farm for the none working class of scholars.

The Seminary have in their hands a farm of about 600 acres immediately contiguous to this place, and is quite a respectable establishment, well cropped, and well stocked with cattle, &c.

The gentlemen of the Seminary are entitled to the thanks of the community for their disinterested and liberal conduct in this matter. They cannot have any object but the good of the rural population and of the country. We may be told that if produce is increased, tithes will be increased in proportion to the Roman Catholic Clergy; but we reply, that while 25 parts of the increase would go to enrich the farmer, only the 26th part would be taken as tithes, and this is not levied on any produce except grain. These gentlemen have set a good example, and we hope it will be followed by others; but they are the first to commence this good work, and all the good that may result from such establishments should be placed to their credit. We wish the establishment all possible success, and so far as our humble suggestions or advice may be useful, the gentlemen of the Seminary at Quebec may command them. We shall be ready at all times to do anything in our power to promote the success of the Model Farm at St. Joachim. To the Rev. Professor Horan we beg to offer our best thanks for his gentlemanlike attention during the time we had the pleasure of accompanying him, and we assure him our tour with him shall always be remembered with satisfaction. Professor Horan, we believe, takes considerable interest in this Model Farm, and this circumstance gives us great confidence in its successful working.

WHAT SHOULD A MODEL FARM BE ?

It should be in every respect a pattern farm for any farmer who would come to visit it. The system of husbandry carried on there should be as perfect as possible in all its various branches. The mode of cultivating every crop should be the best that could be adopted under the

circumstances. The land should be judiciously divided, and sufficiently drained. A system of rotation should be adopted suitable to the soil and situation of the farm,—not the arbitrary systems of this, that, or the other theorist, but such a one as would be suitable, and therefore the best. Of course a due proportion of the arable land should be regularly cultivated under green crops or in summer fallow, and the land intended for green crops, or summer fallow should invariably be ploughed in the previous fall. Weeding must be carefully attended to, and no work that is necessary should be neglected, consistent with a judicious and economical expenditure. It would be better not to cultivate crops upon a Model Farm, unless every thing necessary is done for them. If the lands are in meadow or pasture, provided they are kept clean, there cannot be any fault found, but if cultivated crops are not properly managed, and attended to constantly, they will be a discredit to any Model Farm, and it will not be a pattern good for any farmer to take as an example. These facts should always be remembered, and have due weight with the managers of Model Farms. In order to show the suitable management for different soils, there should be as much variety as possible in the quality of the land of a Model Farm, indeed, such variety is essentially requisite for the growth of certain crops, as well as for example. It would also be of great use, to show the benefit of mixing soils. And if there was a portion of it moss or swamp land, so much the better, as it would be a valuable source of manure for mixing in compost, &c. Land that is not of mixed quality is utterly unsuitable for a Model Farm on a large scale.

The seeds of every description, sown upon a Model Farm, should be the best, and purest of their kind, so that the produce from them might be sold as seed to farmers throughout the country. This would be one of the most useful purposes of such establishments. The various species and varieties of soils might be cultivated,

their management understood, and their value ascertained, and a regular record kept of all circumstances connected with them, their produce, &c., and the seeds might then be recommended, and sold for a fair price, as purchasers would of course expect that each species and variety of seed was what it was represented to be. It must not, however, be forgotten, that should any mistake be allowed to occur in these matters, it would destroy confidence, which would be very difficult to restore.

The next thing to be considered is the quality of the domestic animals to be kept, their management, &c. It should first be determined what different breeds of neat cattle should be kept, and each should be of pure blood. Upon a Model Farm it is necessary that several distinct breeds of animals should be kept in order to test properly their comparative merits, and value to the farmer. The females of all breeds might be kept together, but the males should be always confined, except when required. From three to five cows of each breed would be sufficient, but there should also be a bull of each distinct breed. All should be carefully selected and of pure blood, and the greatest attention should be given to keep the several breeds distinct, except when experiments were necessary to be made by crossing. The use of the males should be allowed to farmers' cows, at a moderate rate that would assist in paying for their keep. But in all cases upon a Model Farm, young stock of unmixed breed should be procurable by any farmer requiring them, and there should not be any mistake possible. If a farmer wanted a *pure Ayrshire*, *pure Short-horned*, *pure Long-horned*, *pure Devon*, or *pure any other breed*, he should be able to have them, and "no mistake." In the same way the breeds of horses, sheep, and swine, should be kept distinct. Farmers in ordinary circumstances may find their profit in keeping mixed breeds of animals, but such a thing would be absurd upon a Model Farm, except when making ex-

periments by crossing. We are aware that great care and attention is required to carry on this system properly, but with due care and attention the thing is quite possible; and unless this plan is adopted upon a Model Farm, it would be better never to attempt to establish one. How ridiculous it would appear to a visitor to a Model Farm, who would come there for instruction, if the superintendent was unable to show him pure breeds of animals and explain the comparative merits of each, resulting from experiments made with each, under his superintendence. Bulls should be confined in sheds and yards, or in such enclosures as they could not leave. Rams should also be confined, but the ewes might run together except when the males are let to them, and then each breed should be kept separated. Animals cannot be kept upon a Model Farm as they would be upon a common, and therefore, suitable enclosures, stables, and yards, are necessary to be provided, and a Model Farm cannot be a good pattern farm without all these appendages. It may appear more difficult to have all these things than it really is. A judicious plan and system laid down first, and strictly acted upon, will make matters much more easy, but we have no hesitation in saying that, unless every thing upon a Model Farm is what it should be, it would be better never to have one. No excuse will be accepted for mismanagement, or a defective system, upon a farm that is pretended to be a pattern one. There will be many eyes upon it, and many tongues ready and willing to find fault, and this is only reasonable. Neat cattle and sheep must be fattened upon a Model Farm, but there is not any necessity that they should be of pure breeds, except that it would be necessary to fatten one or two of each distinct and pure breeds to show what each is capable of. The fattening of stock may be a separate business altogether from the breeding department, although great judgment and attention is also necessary for fattening

stock. It is a very dangerous speculation to enter upon a Model Farm of great extent, before the superintendent may be perfectly acquainted with every thing that requires his attention. Whether the farm is large or small, the superintendent must be a perfect master of practical husbandry, a good judge of every species and variety of domestic animals, and the most approved modes of feeding and managing them, and their produce. These are essential qualifications without which no man can manage a Model Farm to the best advantage, for the instruction of the rural population. The implements must be the most suitable and perfect that can be procured, but while every necessary implement should be upon the farm, it would not be right to have an expensive superfluity. We have in a former number given a list of implements, but more might be required if the farm was large. We have discussed this subject on the present occasion, as it is probable that several Model Farms may be established very soon. We do not enter upon the discussion to discourage the establishment of Model Farms, because, on the contrary, we have constantly advocated their establishment, and it is the latter circumstance which makes us so anxious that they should be worked successfully and for the advantage of the rural population for whose especial benefit they are recommended to be established.

We shall refer to this subject in our next, and submit some further suggestions. We should be exceedingly sorry if Model Farms did not succeed, and we are convinced it will only be from mismanagement in their organization or working that any failure can take place. We must observe, that without an Agricultural School being attached, a Model Farm cannot produce the good that would be the chief object of their establishment, namely: an institution where the youth of all classes might receive a scientific and practical agricultural education, and any other instruction that would be necessary for them

to receive while residing at a Model Farm. There are many Model Farms to be seen in Canada, but they have no schools attached, and it is to supply this want that public institutions are necessary, where youth can be properly instructed in a perfect knowledge of Agriculture in all its branches, to enable them to become respectable and successful farmers.

AGRICULTURAL REPORT FOR AUGUST.

The month of August partook of the character of the previous months of the summer, and was very changeable and cool. There were, however, some fine harvest days the latter end of the month, that must have been very favorable to the farmer, both for ripening the crops, and for harvesting those at maturity. The season altogether has been a most extraordinary one, unusually cold, wet and changeable; and we were sorry to observe that both rust and fly have done considerable injury to some of the wheat crops. What was known as Black Sea wheat is no longer proof against rust, indeed the straw is now quite different from what it was when first introduced. It was then hard and wiry, and of a brownish color, but it has now lost all these characteristic marks, and the straw is like that of any other variety of wheat. It is very desirable that some new Black Sea wheat should be introduced, not from the British Isles, but direct from ports on the Black Sea. Merchants in Canada, we imagine, would find it their interest to import some of this wheat, and would obtain a good profit on it, if farmers could be sure of its being of pure quality. Some should be imported every year regularly for sale, and we suppose it would not yet be too late to have a supply for next spring. To the 20th of May would not be too late, if the wheat be of the proper variety. We believe it could be imported and sold here for ten shillings the bushel, and farmers would not hesitate to pay that price if they were sure that they purchased three months Black Sea wheat.

We have seen wheat injured by the fly this year that was not sown until the last days of May, but the damage was not very extensive. In shelling an ear of wheat that appears to be of a fair quality, the produce of grain from it is very deficient, and this deficiency is produced by the ravages of the larvæ of the wheat fly. The friends of Canada, should interest themselves and provide suitable seed, as wheat should still, if possible, be the staple crop of Canada.

The potato disease has appeared this year at an earlier period than usual, and it is difficult to account satisfactorily for this. The season has been wet certainly, but it has been cool also, and the potato disease has undoubtedly prevailed more generally on dry high lands, this year, than on moist lands. This disease is incomprehensible to farmers, it appears to prevail one year on high lands, and another year on low lands. The potato is a vegetable that should be cultivated, notwithstanding its liability to disease, and the only question for the farmer is, to endeavor to ascertain the best modes of cultivation and of preserving the crop after it has been produced.

The quantity of barley sown this year is not large, and if this crop had been substituted for wheat, in many instances, it would have paid the farmer much better, and not be so liable to either rust or fly. Oats are sown extensively and the moist season has been favorable for them, but this crop has also suffered by rust. If the ensuing month of September be fine, they will, however, turn out a large crop, and in consequence of the demand for them in the United States will pay the farmer perhaps as well as wheat, particularly while there is so much uncertainty in the cultivation of the latter crop. Turnips, carrots, and mangel-wurzel, have succeeded better this year than for many years past; and it is very gratifying to see that the cultivation of these roots is becoming general with farmers. The hay crop has sustained considerable injury this year in the process of harvesting, and a

large portion remained too long uncut ; it was not the large quantity of rain that fell that would injure the crop, but its falling so frequently gave no opportunity of saving any part, scarcely, without getting more or less rain. Hay has been a heavy crop, generally, but a lighter crop, properly saved, would be more valuable, and there has been much hay wasted.

The crop of fruit will be very deficient, and this deficiency is not produced by vermin, altogether, but we suppose by an unfavorable season when blossoming. The pastures have continued good the whole of the summer, and the farmer's cattle and sheep will be in good condition. The markets are well supplied with butchers' meat, butter and cheese, and we are glad to know that some of the best cheese in the market is of Canadian manufacture. This is as it should be, because there is nothing to prevent us making as good cheese and butter in Canada as in any part of North America : our milk is good and it is only skill and attention that are required in its management in order that the products from it should be excellent ; suitable dairies are certainly necessary, or it is impossible to manage milk to the best advantage. In conclusion, we trust that this year's crop taken in the aggregate will prove satisfactory. The potatoes may be an exception, but with fine weather now, the disease may be checked, although we fear that the growth of the tubers is also checked, as the vines are generally withered.

30th August, 1851.

We beg to refer our readers to the letter of "A Subscriber," on the subject of Black Sea Wheat. We hope some of our merchants will endeavor to import a supply of this grain for seed next spring, in time for sowing. We shall be glad to hear from this correspondent again upon any subject connected with Agriculture.

To the Editor of the *Agricultural Journal*.

SIR,—I perceive that you are actively engaged in advocating the modes and princi-

ples of farming in Canada, through the columns of your well-conducted Journal. As no principle of agricultural information has answered my views of communicating a useful plan of agriculture to the farmers of Canada as your paper, I shall take the assurance of requesting you to a subject which you, as well as your subscribers, to a certain degree, left neglected.

Perhaps you are aware that a variety of different kinds of wheat are now sown to test their different qualities, as a substitute for the Black Sea Wheat, that has now degenerated from what it was when imported. The only peculiar advantage in now sowing it (the Black Sea Wheat) it will not rust, at least, I have never seen it on the straw, while all other species that I have seen growing are subject to that epidemic.

I have now a species imported last spring from London by Messrs. Lyman and Co., St. Paul Street, Montreal, which I sowed on the 28th May ; it is superior to any kind I have sown. I sowed it very thin but it stalked out from the first shoot, that it is now a very heavy crop, the ear measuring 5½ inches on an average, but it is subject to rust ; I think if it were sown early in April it would grow a very productive crop.

But to return to the subject of my communication. What will low wet land produce with sowing so early that cannot be sown advantageously till, or about the 25th May ? To sow any other kind but Black Sea Wheat on such land would only be hazarding the crop. Is there no possibility of importing a new seed from Crimea or Odessae, as it has repeatedly been sent for to London, Glasgow, and other places by Agricultural Societies and private individuals, and in no instance has it been sent ; Fall wheat has been sent in place of it, and the person sowing it lost his crop.

We have many kinds of wheat superior in quality to the Black Sea Wheat, but none so well adapted for our climate ; the white bearded is decidedly better, and many other kinds, but if we sow them early to escape the rust, it is attacked by the fly when it comes in ear which is as destructive as the former disease.

It may be said that bad farming is the cause of poor increase, as a correspondent in your Journal asserts. That I readily admit in many instances, and in return your correspondent

must admit that the same farmers sowing Black Sea Wheat when it first came here could raise 20 bushels an acre, while the same farmer on the identical land and same cultivation will barely have 10 bushels an acre this year. It has been asserted that the Webster wheat will not rust; I have some of it growing on my farm and it is rusted on the stem and mildewed in the ear, yet it is a noble looking crop. I think it is in no way adapted to our climate, perhaps it might do better in a dry season. I hope you will make a move, through the columns of your Journal, and suggest some plan to further the attempt. I think the Agricultural Society of Lower Canada should make an attempt to procure a new seed, as they have ways and means.

I think it is the interest of every farmer to procure the best seed and make the best he can of it, and make a true report of its different qualities in your Journal. Hoping you will use your influence in adopting the best means of agriculture as formerly.

I have the honor to be,

Mr. Editor,

Your most obedient servant,

A SUBSCRIBER.

Argenteuil, 22nd Aug., 1851.

With pleasure we give insertion to the letter of Gabriel Marchand, Esq., of St. Johns, who comes forward in his proper name to give the benefit of his useful suggestions. We are perfectly aware of the defective manner in which the process of harrowing is generally executed, and there is no doubt that it has an injurious effect upon the growth of the crop. The soil is not broken, but only scratched over, and frequently the seed is not properly covered. When the ploughing is not properly executed the land will not harrow well. If the furrow slice is cut of too great breadth in proportion to its depth, the land will lie too flat, and the harrow cannot break it up properly. If the land is in too wet a state, it will not harrow; and if too dry, the harrow that is frequently made use of cannot perform the work properly. The sort of harrows recommended by Mr. Marchand would be very suitable, and it is quite necessary that farmers should have

more than one sort of harrow, but it is also necessary that the harrow teeth should be properly steeled, or they will not execute the work as it should be done. The three cornered harrow, so much in use with Canadian farmers, will answer well in land that is not very clear from stones and roots, but it should have suitable iron teeth, well steeled; the land should be properly ploughed, be in a good condition for harrowing, and the process of harrowing should be continued until properly finished. The farmer would find his profit in having his soil harrowed in a proper and sufficient manner, and this is very seldom done. Here again the necessity of sufficient draining is manifest, and where the land is not sufficiently drained, neither ploughing nor harrowing can be executed in a proper manner.

To the Editor of the *Agricultural Journal*.

SIR,—Convinced that any communication on the subject of agriculture will be well received by you, I will venture to give you my opinion of what I think ought to be treated and well explained by the *Agricultural Journal*.

I allude to the manner of harrowing. To this part of agriculture I think the Society has not, to my knowledge, paid much, if any, attention; at least, not enough to impress on the farmer's mind the necessity of good harrowing.

It is so essentially necessary, in my opinion, that the land should be well and judiciously harrowed, that I look upon the best ploughing to be labor in vain when this is deficient; it is the last process, sealing up, as it were, the fate of what has been committed to the ground.

I have been a practical farmer for some years, minutely observing the old system of farming followed by my neighbors, and as minutely observing the advantages arising from such improvements as reason, aided by a little theory, led me to make on the old Canadian system; and I must say, that I have seldom found much deficiency in the ploughing, but I have, almost in every case, observed the greatest neglect and carelessness in their manner of harrowing; and the reason of this neglect is, that the greater

part of the Canadian farmers look upon harrows as being only useful in covering the seed, whereas they have another use scarcely less essential,—they ought, in many cases, to be used in preparing the land for its reception. Yet these purposes are never performed; or, if performed, so very imperfectly, owing to the kind of harrows generally used not being suitable, they seldom answer any good purpose.

It ought, therefore, to be made evident to every farmer, that the same harrows, whatever be their figure or construction, can never answer all the different purposes of harrowing, or operate equally well on every variety of soil. Hence the necessity of the Society to convince the farmers of the imperfection of their harrows for many purposes, and of the advantages that would result from their adopting such harrows as are suitable to the work they have to perform.

In my opinion, every farmer should have three harrows: One for the purpose of harrowing stiff land of every kind, which ought to be a square harrow of about four feet, with iron teeth nine inches long, and drawn by a double tree for two horses drawing abreast, which should be attached by a chain at one corner of the harrow.

The second harrow should consist of two squares connected by a crank in the middle, and two chains of equal length, one at each end, to keep the two parts always parallel, and at the same distance from each other, the crank so contrived that they may form an angle downwards, in order to produce the effect of two harrows on curved ground, and of one weighty harrow in a plain.

The third, like the last, ought to consist of two parts connected together in the same way, but much smaller and lighter.

The imperfection of the harrows commonly used in this country must suggest the advantages that would result from a set here described. The first is proper for harrowing stiff land, as it pierces deep into the soil and divides it minutely; the second is well calculated for covering the seed; and the third supplies any deficiency in the second, by smoothing the surface and covering the seed still more accurately. They have, besides, another advantage, not inferior to those already enumerated; they mix the soil more intimately than can be done by common

harrows; and, as on such intermixture depends greatly the effect of manure, the benefit they would produce in that respect would be great.

Yours humbly,

GAB. MARCHAND.

St. Johns, 25th August, 1851.

To the Editor of the Agricultural Journal.

SIR,—Though I have read something, and heard a great deal about the application of “Salt” as a manure, I am not quite satisfied that my knowledge on that particular, and in this Country, unusual manure, is sufficient to warrant me in using it; and, as I am desirous of trying it on a small scale, for an experiment, to test its virtues, I respectfully take the liberty to propound the few following queries, viz. :—

1. Is Salt, as a manure, equally beneficial to *light* and *heavy* soils?
2. What quantity should be applied per acre of *light*, or sandy soil; and, what quantity to *heavy*, or clay soil?
3. What season of the year is best to apply the Salt?
4. What crops is it most beneficial to?
5. Would it answer to mix with earth, and the scrapings of the farm-yard and stables, in a compost.

By answering the above in your next issue, you will very much oblige,

Sir,

your obedient servant,

X. Y. Z.

St. Fox, 21st August, 1851.

In reply to our respected correspondent, X. Y. Z., we beg to state, that it is our opinion, salt may be applied beneficially to any soil of whatever quality in Canada, where it is situated at a considerable distance from the Sea. From six to ten bushels may be applied, a part when ploughing the land, and a part when sowing or planting the seed. For every variety of green crop it is a most useful application, and of this we have been fully convinced by experience. It is a great check to the ravages of insects, and of this also, we had experience this spring. We had the wheat plants destroyed completely upon

about an acre of land. We harrowed the land and found it very much infested with the slug, such as destroys the young cabbage plants in gardens. We applied about four bushels of salt to the acre, and sowed again with wheat, and this second crop was not injured. On land highly manured, an application of salt is particularly useful, for either wheat or barley; it gives strength to the straw and prevents the crop lodging; mixed with lime, in proportion of one part salt to three parts lime, and the mixture made from three to six months before required for use; turned over once or twice, and kept under cover, makes an excellent top-dressing, applied in quantity of from ten to twenty bushels per acre to spring crops of grain, where salt has not been applied previously. It is the best substance that can be mixed in compost heaps, and they should not be made without it. Salt would be much more generally made use of in our agriculture, but the price is too high to admit of its general use by farmers.

The Report of the Judges of Crops, Farms, &c., in the County of Montreal for the present year, has been unavoidably postponed, but shall appear in the next number of this Journal.

We give in the present number the proceedings of the Directors of the Lower Canada Agricultural Society, in reference to the farm situated at La Turtue, which Alfred Pinsoncault, Esq., has placed at the disposal of the Society for five years, to be managed as a Model Farm. The superintendent of the establishment, Mr. Ossaye, will report from time to time, his proceedings, which will be regularly published in this Journal, but of course there cannot be much done on the farm before the next spring, except to plough, drain, fence, and make and collect manure.

The Directors of the Lower Canada Agricultural Society have appropriated £100, for two Provincial Ploughing Match-

es, one for the District of Quebec, and the other for the District of Montreal, to take place this Fall. The particulars will be given in the next number of this Journal, and Hand Bills may be had at the rooms of the Society, No. 25 Notre Dame Street, Montreal.

THE AGRICULTURAL COLONY OF ST. ILAN.

[FROM ELIZA COOK'S JOURNAL.]

"He too, whose care has made some arid soil
 Alive with waters of humane delight, * * *
 Has planted and defended in the wild
 Some garden of affection, a safe place
 For daily love to grow in, and when ripe
 To shed sweet seeds, that in their turn will feed
 The winds of life with odours, shall be writ
 Poet—Creator, in that book of worth
 Which Nature treasures for the eyes of Heaven."
 R. M. MILNES.

How the starving and homeless multitudes of our own and the sister isle are to be fed and housed—how the mass of pauperism which is now, like a canker-worm, eating out the very vitals of our prosperity, can, in any degree, be diminished, *this* seems to be the great social problem of our day, that which weighs on many a thoughtful and feeling heart, and perplexes many a thinking brain.

We are happily not called upon to deal with the question in a political or economical light; but we may be permitted to sympathize in and rejoice over the efforts which are being made by many noble-hearted and self-denying individuals in our own land, who are striving to stem this torrent of human misery and to raise the condition and improve the prospects of their poorer brethren.

Whilst these subjects are engrossing so much of the public mind, we think that the following sketch of a noble and successful work of charity, undertaken about five years ago by a young French gentleman, who has devoted both his time and property to the interests of humanity, may awaken some interest in kindred minds, and perhaps suggest to others the good thought that they also might "Go and do likewise."

About a mile from St. Brieuc, a somewhat dull and cheerless looking Breton town, may be seen an old-fashioned manor house, name St. Ilan. It is picturesquely situated on this bold and rocky coast, whilst the gorse-clad hills which form the background of the mansion, add not a little to the beauty of the scene, especially when the May sun causes their bright yellow bloom to glisten like a sheet of gold beneath its rays.

The property on which this old house stands was inherited some years ago by a

Breton gentleman named M. Achille du Clésieuse. In early youth poetic dreams filled his mind—he wrote some fugitive piece which was for him a transient popularity—Lamartine hailed him as a rising poet, and the young man's heart beat high with joy.

Young, talented, and possessed of an independent property, life seemed to open brightly upon him—but one day, as he sat beneath the shade of the aged trees planted by his forefathers centuries ago, the thought occurred to his mind that life was not given us to be wasted in idle dreams, however sweet—that it was man's duty to *act* great things as well as to *sing* them.

In traversing Brittany, his native province, M. du Clésieuse had observed considerable tracts of land lying uncultivated—whilst in other parts of France, he had seen the overgrown manufacturing towns crowded with a wretched and half-starving population. The hard-working, cheerful peasantry, who had once cultivated the soil, were now in too many cases transformed into ill-paid and overworked artisans, who were sinking prematurely into an early grave.

He observed that a large proportion of orphan children, hopeless of finding either employment or support in the country, flocked to these factories, where their youthful spirit soon lost their buoyancy, and with it, too often, alas! their early purity.

Deeply did M. du Clésieuse ponder over these social evils, and, as he did so, the thought of founding an agricultural colony first arose in his mind. He determined to open a home at St. Ilan for the orphans and foundlings who would otherwise have been forced to abandon their native province. He built a farm-house and a chapel for the benefit of the young colonists—he supplied them with daily food, at the same time employing them to cultivate the surrounding land. He procured a good agricultural teacher to instruct them in farming; a clergyman to preside over the moral discipline of the institution, and, like a true Frenchman, notwithstanding the very peaceable character of the establishment, he could not rest satisfied without also introducing amongst its inmates an old soldier to instruct the boys in military and gymnastic exercises. With untiring charity and perseverance he watched over these orphan youths, showing them a noble example of every social and Christian virtue, and they, in return, loved him as a father.

This little agricultural colony soon excited the interest of the neighbouring gentry. The proprietors of waste land began to think of imitating M. du Clésieuse's example, and begged of him to supply them with monitors and overseers.

The subject attracted the attention of Government, and in compliance with a desire expressed by those in power, M. du Clésie-

use, on the 4th of August, 1848, read, in the Chamber of Representatives, a report of the origin of his colony, together with the progress it had hitherto made.

"In 1846," said M. du Clésieuse, there were in Brittany 3,368 boys who were either orphans or foundlings. It was with this formidable and ever-increasing number of claimants in view, that the work of St. Ilan commenced. On the 1st of June, 1848, there were already two small colonies in existence in addition to the original farm of St. Ilan. This parent institution contained within its walls thirty agricultural labourers, two monitors, twenty-nine overseers, one superintendent, two almoners, a physician, a steward, a schoolmaster, and three "sisters of Providence," whilst work-shops and instructors were provided for every branch of rural industry."

The organization of this normal institution proves its noble destiny, even that of being the parent hive which is to send forth its colonies throughout the whole of Brittany. Five branch establishments had then (August, 1848), already been instituted, each consisting of twenty children and four overseers. The first of these colonies, headed by an old soldier, on the 3rd of November, 1847, took possession of a farm which had been appropriated to their use.

On entering it, however, they found everything in a state of utter ruin and dilapidation; and before the orphans could take possession of it as a home, a thorough repair was required. But what mattered this to them?—work was the very thing they needed, and with cheerful hearts and vigorous arms they applied themselves to their allotted tasks.

They slept on straw in a stable—hammered together a few boards in an outhouse to answer the purpose of a table, which was required for their meals and for their daily class lessons.

And thus did these homeless orphans progress cheerily with their work, alternately acting as masons, carpenters, and labourers, until they had reared a comfortable dwelling and fertilized the barren soil around. They thus redeemed for themselves a green spot where they may rejoice in the sunshine of God's bounty, without, at the same time, having deprived a single human being of his birthright—may more, their labour is not only a present benefit to themselves, but must also eventually profit the owners of the soil, whose waste land they fertilize, and whose tenants they will doubtless one day become.

The colonists of St. Ilan rise in winter at five o'clock in the morning—commence the day with a united act of worship—during eight or ten hours either labour in the farm or study together in classes, whilst a sufficient time is always reserved for recreation and for gymnastic exercises.

A strict, yet at the same time paternal,

discipline is maintained throughout the asylum; and a book is kept in which the conduct of each inmate is daily noted, to be reviewed at the close of the week by the superintendent. This life of active industry is productive of almost uninterrupted good health, and the whole course of training has the most beneficial result on the moral being of these young people. Nothing can exceed their willingness to perform the tasks allotted to them, whether it be in the form of manual labour or of study; whilst the anxiety they manifest that others should share their happiness is most pleasing to witness. Not long ago, a little beggar boy presented himself at the farm—the young colonists recognized in him a former companion of vagrancy, whilst he seemed to look with wistful eyes upon their peaceful home. M. du Clésieuse joined the group, and questioned the wanderer: he found that he would gladly exchange his present vagabond existence for a life of honest labor—but what was to be done?—there was no vacancy in the establishment—every place at St. Ilan was filled. The boys looked imploring from their disappointed companion to their kind master, and more than one voice said beseechingly, “Oh, sir, don’t send him away.” “But there is no room, my boys; what am I to do?” replied M. du Clésieuse—“We will make room for him,” they exclaimed with one voice, “we will share our food and our beds with him; we should be so sorry for him to be obliged to go and beg again.”—M. du Clésieuse gladly yielded to their wishes. The little beggar exchanged his rags for the uniform worn by the young colonists, and soon took his place in the schoolroom and in the field—no more to leave this peaceful shelter until he is sent forth at some future day to occupy a farm of his own, or perhaps to superintend a new orphan colony.

Scenes such as these are of frequent occurrence, and where it is impossible for the destitute stranger to be received into the house, its inmates are at least ever ready to share with him the little they have to bestow, a portion of their daily food.

The attachment of the children to their adopted home is most remarkable. One of them a very good musician, went to Limoges, and for some months supported himself there by his talent, but the recollection of the colony was still strong within him, and on the death of his mother, whom he had taken to live with him, he asked to be readmitted there as teacher.

Another who had become an excellent agriculturist, was early placed in a farm with very advantageous prospects before him, and at first seemed perfectly happy. But one fine day he returned to St. Ilan, and entreated M. du Clésieuse to receive him there again in the situation of overseer, “for,” he said, “I would gladly give up every thing I possess to be once more under

this roof.” His request was granted, and he is now one of the most useful officers in the establishment.

The judicious arrangement made by M. du Clésieuse in establishing several *small* colonies (each consisting of only twenty boys, and three or four overseers), instead of consolidating them in one large body, has much contributed to foster this strong feeling of attachment on the part of the orphans. Each separate establishment becomes a *home*, and the children appear as united as if they truly belonged to one family.

An intelligent eye-witness observes, “I visited, in company with M. du Clésieuse, two of the agricultural colonies that he has founded, and I shall never forget the impression made upon my mind, when, as we approach an extensive common, about twenty boys made their appearance and clustered around my friend, whom they welcomed as though he had been their father. A tame sparrow-hawk fluttered around them, occasionally lighting upon their shoulders. “To whom does this sparrow-hawk belong?” I inquired.

“To us,” replied the children, with one accord.

“And who trained it?”

“We all did.”

This simple answer at once conveyed to my mind an idea of the fraternal union which pervaded the establishment—that “*communism of the heart*” which is the best safeguard against all revolutionary communism.

These boys, who would otherwise have become homeless outcasts, swelling the ranks of pauperism, are thus trained to become happy and useful members of society—whilst the bond which ought to unite together rich and poor in one holy brotherhood is drawn more closely—waste lands are made to yield their increase, and uncultivated minds to become thoughtful and intelligent.”

Truly, the agricultural farm of St. Ilan is a nobler poem than any which M. du Clésieuse could ever have produced with his pen, had he devoted his whole existence to literary and artistic labors.

The cost at which establishments such as these may be maintained is very trifling indeed. The annual expense of such a farm is about £300, whilst the incomings amount to about £260 or £56s., leaving only an annual disbursement of about £85.

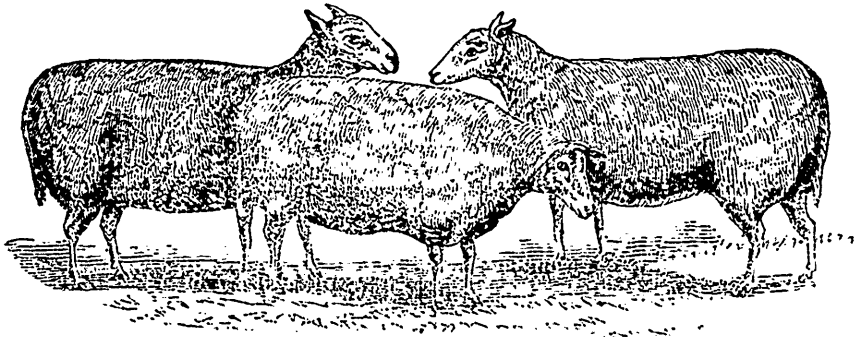
Each year the land becomes more productive, and the incomings consequently greater, so that, ere long, it is to be hoped these colonies will not only be self-supporting, but even become remunerative to the proprietor. Already the landed gentry in Britany seemed disposed to vie with each other in offering lands, hitherto uncultivated, for the reception of agricultural colonies—and these valuable institutions promise to multiply rapidly throughout the country.

Might not this system be advantageously tried in some of the desolate and half-depopulated districts of the sister island?

Might not some of the wretched children now filling her workhouses and undergoing a moral training which can only fit them to become hereafter the inmates of her prisons and her convict hulks, be thus rescued from their degradation and converted into an industrious and grateful tenantry? And are there not at all events *some* men to be found who would be content to risk the attempt, and who, with even *small* means at their disposal, will rejoice to devote their time and their efforts to this good work, and to emulate the young French poet in the noblest strife in which man can engage with man—the strife which shall do most to benefit his brethren—to lighten the heavy load of human care and crime, and to cause the orphan's heart to sing for joy?

THE CRYSTAL PALACE AND THE PERMANENT IMPROVEMENT OF THE COUNTRY.—While we see nation contending with nation in the useful and peaceful exhibition of the fine arts, and in the gorgeous display of their country's productions, mineral and manual, and in all that pleases the eye and commands the attention, yet we do not hesitate to say that Roxburghshire occupies a prominent position in the eyes of all who ask the vital question—How are the busy millions of our ever increasing population to be sustained? And the answer must be—By the man who, by his enterprise and improvements on land, produces two bolls of grain where only one grew before; and this we under-

stand Mr. Thomas Pringle of Holefield will effect, to the lasting benefit of the country, and also we hope to his own profit, by the judicious and extensive system of drainage which he is carrying forward—a specimen of which, through the kindness of his patriotic landlord his Grace the Duke of Buccleuch, now occupies a place in the Crystal Palace, and although too late to appear in the printed catalogues, is titled as follows:—“Specimen of Land-Drainage practised by Mr. Thomas Pringle on the farm of Holefield, the property of His Grace the Duke of Buccleuch, in the country of Roxburgh, and parish of Sprouston, 1851. Explanation.—Receiving and discharging drains, vermillion color; stone drains, blue; drains 6 and 8 feet in depth, vermillion and blue. Contents of field, 28 acres, of which there was drained between the 1st Dec., 1850, and 20th Feb, 1851, 28 acres—the stone drains having been put in many years ago. Expense—The expense of tile-draining the 28 acres was £6, 10s. per acre. Note.—The subsoil arising from the cutting of the drains was all spread over the surface, thus securing as far as possible a compound of soils.” The plan, we understand, was executed by Mr. W. Brown, Inspector of Roads, who has so managed the coloring of the plan as not only to exhibit at a glance a faithful representation of the very irregular surface of the field, but also the different drains and their various depths. With pleasure we give the following extract of a letter on the subject from a foreigner to a person in Roxburghshire:—“I have seen Mr. Pringle's specimen of land drainage: it looks well.”—*“Kelso Chronicle, Scotland.”*



THE CHEVIOT BREED OF SHEEP.

This is a breed of sheep much esteemed in Scotland. They have the reputation of being remarkably hardy, and of thriving, under apparently adverse circumstances, upon the mountain pastures of that country. They are said seldom to exceed from 12lbs. to 15lbs. the quarter, and yield from 3lbs. to 4lbs. of washed wool. This breed of sheep might be profitably introduced into Canada, but whether they would thrive as well in our confined pastures, as on the wide range of pastures they are accustomed to in Scotland, can only be proved by experiment.

THE SPREAD OF THE ENGLISH LANGUAGE.—The *Athenæum* has an interesting article on this subject, in which it points out the probability that formerly existed of the Dutch language attaining a kind of universality—"In 1650 the United Provinces seemed more likely to make a grand figure in the future world's history than England. Their wealth, activity, and maritime power were the most imposing in Europe. They had all the carrying trade of the west in their hands. Their language was spoken in every port when that of England was then hardly known abroad. Yet Holland has fallen nearly as much as the Saxon has risen in the scale of nations. Her idiom is now acquired by few. Her merchants conduct their correspondence and transact their business in French or in English. Even her writers have many of them clothed their genius in a foreign garb. Dutch, like Welsh, Flemish, Erse, Basque, and other idioms, is doomed to perish as an intellectual medium; but the tongue of Shakspeare and of Bacon is now too firmly rooted ever to be torn away. The English language is gradually taking possession of all the ports and coasts of the world—making itself the channel of every communication. As a hundred points at once it plays the aggressor. It contends with Spanish on the frontiers of Mexico—drives French and Russian before it in Canada and in the Northern Archipelago—supersedes Dutch at the Cape and Natal—elbows Greek and Italian at Malta and in the Ionian Islands—usurps the right of Arabic at Suez and Alexandria—maintains itself supreme at Liberia, Hong-Kong, Jamaica, and St. Helena—fights its way against multitudinous and various dialects in the Rock Mountains, in Central America, on the Gold Coast, in the interior of Australia, and among the countless islands of the Eastern Seas.⁵³

SIMPLE REMEDIES.

EAR-ACHE.—Laudanum and sweet oil on cotton wool, pressed into the ear.

CORNS.—Soak the feet in warm water, pare off as much as possible the horny part of the corn, then lay upon it a moistened wafer, and again upon this a piece of buckskin, with a hole cut through it the size of the corn. Renew the moist wafer twice a day, and in a very few days the corn will work out. This cure is complete.

CROUP.—Ipecac and nitre has proved immediately effectual in all cases, and in a multitude of instances in the family of the writer. Let it be prepared by the druggist, and the precise size of the dose carefully observed—to be repeated every quarter hour till vomiting is produced.

BEE STING.—Apply mud.

RINGWORM.—Apply repeated a paste of common gunpowder with water.

BRUISES.—If the skin is not broken, cam-

phor in spirits will soon remove soreness and inflammation; if the skin is broken, apply cold water repeatedly: if large and painful, apply warm water.

BURNS.—Small burns are completely cured in fifteen minutes, by holding on a piece of ice or snow, if applied instantly, before inflamed any.

STOPPING BLOOD FROM A CUT.—Apply lint, or flour with lint.

CURING A CUT.—Sewing up a cut, by taking a fine stitch into the insensible skin, from each side alternately towards the cut, will cure it usually in *one quarter* the time otherwise required for its healing.

AGRICULTURAL SOCIETY.

Office of the Society, at No. 25, Notre Dame Street, Montreal, opposite the CITY HALL, and over the SEED STORE of Mr. George Shepherd, Seedsman of the Society, where the Secretary of the Society, WM. EVANS, Esq., is in attendance daily, from 10 to 1 o'clock.

PLAMONDON'S HOUSE, sign of the Beaver, 122 St. Paul Street, Montreal. Dealers in Dry Goods and Ready-made Clothing. Clothing of all kinds made to order. Superfine Cloths and Cassimeres all of the first quality and latest fashion. Purchasers would do well to remember that we have but one price, which, owing to the late commercial crisis, is reduced to the lowest possible figure.

N. B. Country merchants will do well to give us a visit before purchasing elsewhere.

HUDON, LESIEUR AND QUEVILLION. A complete assortment of English and American Dry Goods, of Ready-made Clothing, and also a large stock of Hats, Caps and Furs, to be sold wholesale and retail. Montreal, 106 St. Paul Street.

F. X. BRAZEAU, dealer in Dry Goods, Ready-made Clothing, Caps, Furs, &c. of all kinds. Montreal, 102 St. Paul Street.

JOHN A. LECLERC, dealer in Leather of different descriptions. Montreal, 174 St. Paul Street.

DESMARTEAU, MERCHANT & Co., importers and dealers in Dry Goods and Groceries, Montreal, 98, St. Paul Street.

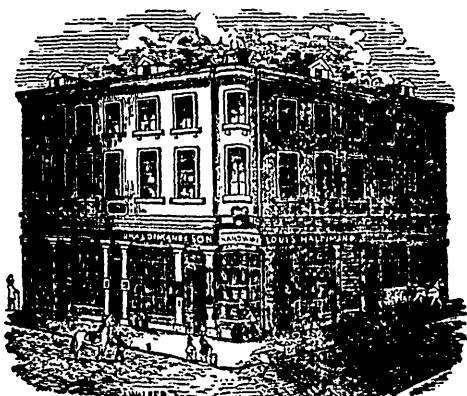
HALDIMAND, BROTHERS, Ironmongers. sign of the Gilded Lock, corner of St. Paul and St. Vincent Streets, Montreal.

M. MOSES has always on hand a stock of the finest Paints, Oils, Brushes, and Pencils. Montreal, 97, St. Paul Street.

DORION & GINGRAS dealers in Hardware, Crockery, Cutlery, Paints, Turpentine, Varnishes, &c., &c., wholesale and retail. Quebec, 9, St. Peter Street.

G. LEBLANC'S Hotel, Custom House Square, Montreal.

HALDIMAND, BROTHERS,



HARDWARE MERCHANTS,

SIGN OF THE LARGE LOCK,

Corner of St. Paul & St. Vincent Streets,
MONTREAL.

ECONOMY!!

The undersigned gives notice to the public in general that he has just invented a

THRASHING MACHINE,

which exceeds, by one-half, the power of all others used in this Province; and is ready to thrash with this New Machine

1,500 Sheaves per day,

making clean grain. He will also undertake that with the same horse power and with grain of the same quality, he will thrash fully one-half more than any other hitherto manufactured or seen in this Province, with the further advantage that his New Machine will clean the grain so as to fit it at once for Market or Mill.

Not only does the New Machine possess the movements necessary for thrashing Wheat, Oats, Rye and Buck Wheat; but also Peas, Beans and Indian corn; and the last may be husked.

It is also to be remarked that it economizes at least three quarters of the oil which is used to prevent friction, which is due to a newly contrived groove. And not only will this advantage be perceived, but eight others, all replete with powers, which have never been known in any other machines in this Province. Those who wish to purchase, have only to visit the workshops of the undersigned, Great St. Joseph Street. The conditions will be easy, and the advantage of the machine being guaranteed. A deduction of \$100 will be made if the machines do not thrash one-half more than machines from other shops.

JOSEPH PARADIS.

Montreal, 1st December, 1850.

LAZURE AND BROTHERS, importers of English dry goods, American Satinettes, and Cottons of all kinds, Cloths and Casimeres, Shawls, Orleans, Alpaca, Linen and Cotton Threads, Broad Cloths, Doeskins, Moleskins, Fancy Plaids, Furs; also a large assortment of Dry Goods. Montreal, 108, St. Paul Street.

MATTHEW MOODY,

MANUFACTURER OF THRASHING MACHINES, REAPING MACHINES, STUMP AND STONE EXTRACTORS, ROOT CUTTERS, REVOLVING AND CAST-STEEL HORSE RAKES, PATENT CHURNS, WAGGONS, &c. &c. &c.

THE Subscriber has been employed since 1846 in manufacturing his improved THRASHING MACHINES, with Horse powers. He was awarded the highest Prize at the Terrebonne County exhibition after competition with many others. They have thrashed and cleaned, with 2 horses, from 100 to 124 minots of Wheat per day, and from 200 to 250 of Oats, and have given universal satisfaction. He guarantees all purchasers for any recourse by Paige & Co., of Montreal, who allege having a patent for these machines, dated December, 1848! and warrants them equal to any made here or elsewhere, for efficiency and durability.

One of his Reaping Machines may be seen at Kerr's Hotel, St. Lawrence Street, price £25.

Having lately erected new and enlarged Works for the above articles, he will execute promptly all orders in his line.

Thrashing Mills constantly on hand. Two second hand Mills, in warranted order, cheap for cash.

Thrashing Mills repaired, and finishing work done.

Agency in Montreal, at Iadd's Foundry, Griffintown; in St. Andrews, L. C., at Mr. Henry Kempley's.

TERREBONNE, August, 1850.

THE SNOW DROP;
A JUVENILE MAGAZINE.

THE publication of the "Snow Drop," THE ONLY WORK OF THE KIND IN CANADA, will continue to be conducted by the Subscriber. The first number of Vol. 2, new series, is now ready, and will be forwarded at the earliest notice to new subscribers. Each succeeding number will contain not less than four wood engravings, and one appropriate piece of music, besides many other embellishments which will increase the interest of the work. In short, the publisher pledges himself to spare no reasonable exertion to make the Magazine all that is desirable, or could be expected, in a publication designed for young people.

The Editorial department will be continued by the same talented and popular writers who have been so successful in rendering the Magazine not only entertaining, but highly useful and instructive.

It will be printed, as heretofore, by Mr. John Lovell, whose extensive printing establishment affords every facility for executing it in the best style. It will be printed uniformly upon paper of a superior quality, manufactured expressly for the purpose, by Messrs. W. Miller & Co.

It is hoped that the interest thrown in the work,

will lead its former patrons to continue not only their support personally, but induce them to lend their influence in favor of a wide circulation.

That the work may receive a circulation commensurate with its importance, the following inducements are offered for the formation of clubs.

Any person who will forward \$4, free of postage, shall receive five copies of the "Snow Drop" for one year. There probably is not a town in Canada, in which four subscribers could not be obtained; any boy or girl disposed to make an effort, can at least, secure this number, and by sending the publisher the amount specified, will receive four copies for their subscribers, and one copy as a reward for the effort.

R. W. LAY.

MONTREAL, 1st July, 1851.

Extract from Notarial agreement entered into between the Lower Canada Agricultural Society and R. W. Lay.

NINTHLY. It is also further covenanted and agreed by and between the said parties hereto, that the said party of the second part (R. W. Lay) is by virtue of these presents constituted, the attorney of the said parties of the first part pending the present contract, and not further, for the express purpose and with full power and authority to collect all arrears for subscriptions due by subscribers to said Journal while published heretofore by the said parties of the first part.

(Signed,) ALFRED PINSONEAULT, *President.*
WM. EVANS, *Secretary.*

THE AGRICULTURAL JOURNAL AND TRANSACTIONS OF THE LOWER CANADA AGRICULTURAL SOCIETY, in the French and English languages, will hereafter be published by the Subscriber, to whom all COMMUNICATIONS relative to SUBSCRIPTIONS, ADVERTISEMENTS, and all business matters connected with the past or forthcoming volumes of the Journal, must be made.

The work will be increased in value and interest, by the introduction of DIAGRAMS of the FIXTURES and IMPLEMENTS of HUSBANDRY, together with PLANS of MODERN FARM BUILDINGS, and descriptions of the best variety of Fruits, Illustrations of Domestic Animals, &c.

As Publisher of the JOURNAL, I have wished to visit Agents and Subscribers to the Work, in the different parishes in Canada, to ascertain the interest felt in its prosperity, and awaken, if possible, a fresh zeal in the cause of Agricultural improvement. This I have done to some extent; but I regret that business here, obliges me to defer for the present many of my proposed visits. I have, therefore, conceived the idea of addressing a Circular to the Clergé and Agents, confident that they will feel deeply interested in the wide dissemination of the Work, and cheerfully distribute the Circulars in an advantageous manner.

Anxious to avail myself of every facility to secure an extensive circulation to the JOURNAL, I have made successful application to the Hon. Mr. Morris, Post-Master-General, to send the French Journal and Circulars to all parts of the Province free of postage, for six months. At the end of that time it is hoped that free postage for papers and periodicals will become a permanent thing.

I have not sent the JOURNAL in every case where there were subscribers before, for these reasons:—I had no means of knowing who would continue it; and I thought it better to wait, being assured that all who wished to obtain the Work would give me notice. I trust this may be a satisfactory explanation, and that I shall receive orders from every quarter fully proportioned to its importance.

The Journal contains 32 pages Monthly, is published at \$1 per annum, and any one obtaining new Subscribers, on remitting \$5, will be entitled to Six Copies of the Journal for one year.

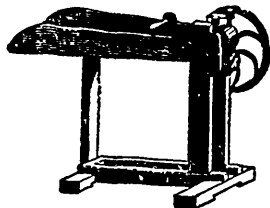
Agents and Subscribers are required to remit immediately to the Publisher the amount due the Society. Also, a CORRECT LIST of SUBSCRIBERS in their respective Localities. Care will be necessary, in giving the address, to write plainly, that all irregularity may be avoided.

The Subscriber is Agent for all the important American Magazines and Reprints, embracing the highest departments of Literature, Science, and Art; which he delivers in the principal Towns of Canada East, at New York prices.

Responsible Agents wanted to canvass for the SNOW DROP, AGRICULTURAL JOURNAL, and other Works, to whom a liberal Commission will be allowed.

ROBERT W. LAY.

193, Notre Dame Street, Montreal.



AGRICULTURAL WAREHOUSE.

THE Subscriber has constantly on hand,

Samples of various kinds of AGRICULTURAL IMPLEMENTS, among which will be found, Ploughs, Cultivators, Seed Sowers, Straw Cutters, Corn Shellers, Subsoil Ploughs, Vegetable Cutters, Thermometer Churns, Horse Rakes, &c. &c. Expected by the opening of the Navigation, a large assortment of Cast Steel Spades and Shovels, Cast Steel Hay and Manure Forks, Hoes, &c., &c.

Agent for Sale of St. Onge's Patent Stump Extractor.

P. S.—Any kind of Farming Implements furnished to order, on the most reasonable terms.

GEORGE HAGAR,

103, St. Paul Street.

Montreal, 1st April, 1851.

JUST RECEIVED BY EXPRESS:
Harper, for August.

R. W. LAY,

193, Notre Dame Street.

July 31.

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