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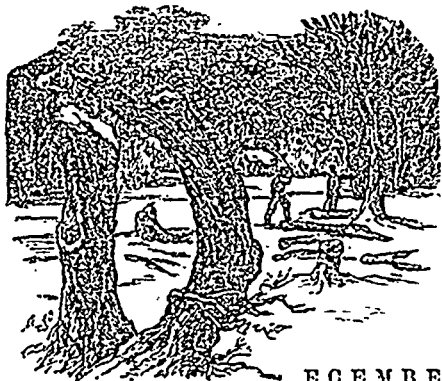
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THE CANADIAN FARMER

VOL. V. No. 23. TORONTO, CANADA, DECEMBER 1, 1868. POSTAGE FREE.

The Month.



D E C E M B E R

brings the indubitable winter, as surely as July does the summer. Whatever dreamy expectations we may have had of possible Indian summer, vanish now. Pleasant weather indeed we may have, but it will be pleasant wintry weather, with perhaps now and then a day so fine and warm that it seems to have lost its proper place in the year. Clear, bracing, but chilly, air will quicken the pulse, and send the blood coursing through the veins with unusual vigour. The snow will wrap the earth in its white coverlet, and all things will yield to the sleep of winter, and to the reign of the frost king.

The following are the mean temperatures for December:—

Stratford	22°65'
Hamilton	25°06'
Barrie	23°04'
Toronto	25°06'
Bellefleur	22°85'
Montreal	24°12'
Quebec	21°20'
St. John, N. B.	25°03'
Halifax	28°00'

We are accustomed to think and speak of winter as a season of comparative rest and leisure for the farmer. But how far that is true and applicable to individual cases, depends on a variety of circumstances. Winter affords but little respite to the man who has a large area of wild land to clear, or a numerous herd of cattle to feed. These, however, are exceptional cases, and most farmers, when winter fairly sets in, feel that they are less driven than at any other period of the year. But while "broken weather," as it is often termed, lasts, every one has enough to do. That charming writer on rural affairs, "Iko Marvel," says: "Even into December the work of country improvements may go safely forward; the clearing of new land, the thinning of over-crowded forest growth, the building of walls, the construction of walks and roads,—for these, severally, or together, no better time can be found than that which immediately precedes the locking frosts of winter. And when the dead lock is fairly established,—so far as

treatment of the land goes,—the open sunny weather of December still invites us many a day out of doors. If we have rocks to move, they glide easily over a frosted and stiffened turf, the brambles and waste growth of outlying pastures cut easiest when the earth is locked unyieldingly about their stems, the woods, despoiled of their leaves, give free insight and outlook to their most sequestered nooks." These are but examples of the thousand and one things that may be done just at the setting in of winter, and there are few so beforehand with their work as not to be caught by the "dead lock" with some needful preparations or unfinished undertakings that must needs be postponed until another year. Most people, in regard to work, are like children in respect to tomping food, too greedy. The child's eye is proverbially larger than his stomach, and even so the farmer's eye readily takes in more work than his hand can accomplish. Indeed, generally speaking, plans and achievements too often correspond very poorly. "To will is ours, but not to execute." Happy are those on whom winter does not shut down with a host of half-accomplished schemes of preparation and improvement!

The hints given last month, as to the care of stock, are just as applicable this month, and will become more so as the temperatures go down into mid-winter. In fact, the care of his animals may be put down first on the list of the farmer's winter duties. Whatever arrangement or expedient can be contrived to make this duty easier, and secure its being faithfully performed, should by no means be neglected. Convenience of access to food, well-hinged and securely fastened doors; ventilation without currents of cold air from unstopped cracks and openings; ready means of clearing out manure, are things that should by all means be secured. Manure-making is also a December as well as November job—indeed, it is a job for all the year round. The great want of every farm in the land is more manure, and no opportunity of making it should be let slip. One valuable material for manure-making can on some farms be better got at and hauled in the winter time than at any other season, namely, swamp muck. Any farmer who is fortunate enough to be within a mile or two of any ashery, would find it pay to haul as much as possible of the leached ashes on to his land, in good sleighing. It is heavy material, and far more of it can be hauled in a sleigh, when the winter roads are at their best, than on a waggon, however good the wheeling may be.

Wood-cutting and hauling is another item of winter work on the farm. The year's supply for the family should be thought of now. To burn green wood, and to bring it load by load from the bush as required, are among some of the most disgraceful points of slipshod farming. The wood lot should be prudently managed, and made to last as long as possible. There

are few, if any, parts of the country to which this advice is not applicable, now that the consumption of our forests by increasing population and extending railroads is rendering firewood a valuable market article all over the land. The days of reckless cutting, slashing and burning, it is to be hoped, are over for ever. Lately as some think it, the time is not far distant when we shall find it needful to replant forest trees in localities where but a few years ago there was prodigal waste of timber, while it was abundant. Not only firewood, but fence material, should be got out in winter, for use in early spring, where new fences require to be built, or old ones need repair.

When out-door work cannot be done, in-door jobs may well claim attention. There is what the Irish labourer calls "ridding up," or what Mrs Stowe's "Aunt Chloe" styled "claring up." An air of neatness should characterize the barns and stabling. If there are boys or hired men about, they are apt to display a wonderful faculty for getting things into disorder and out of place. Every now and then the places they haunt will need putting to rights. The law, "a place for everything and everything in its place," will often be more honoured in the breach than in the observance. Nevertheless, every effort should be made to have it obeyed. Farmers who have tools and a shop of some kind, may improve winter leisure by making racks, gates, rollers, drags, and a variety of other articles that will be in request when the busy season comes round again. This, too, is the time for balancing up farm accounts, taking stock of the year, considering the improvements that may be made on past operations, and laying wise plans for the future. The long evenings are favourable for reading, for attending farmers' clubs, for making social visits, and for indulging in home recreation. A moderate amount of time may very properly be given to innocent entertainments by which the spirits are enlivened, and the powers of body and mind freshened for a resumption of the stern business of life. There is no reason why winter should be either a dull or an idle time.

Last, but not least, early winter is the time for renewing subscriptions to Agricultural journals, and making efforts to extend their circulation, and we take the opportunity of urging both these duties on the readers of the CANADIAN FARMER. Prompt renewal of subscriptions is important, that there may be no intermission of its visits to the homes where it is a regular and, we trust, a welcome visitor, while one of the best ways of promoting the advancement of agriculture is to induce as large a number of persons as possible to take a journal whose constant aim is "to improve the soil and the mind." As will be seen by the prospectus which we publish on our last page, a new series will begin on the 1st of January, 1869, when certain changes will be made, which will, we doubt not, be considered as improvements, and help to augment the popularity and usefulness of the CANADIAN FARMER.

The Field.

The "Early Rose" Potato.

To the Editor of THE CANADA FARMER:

SIR,—Your extract from the *Practical Farmer*, in your issue of November 1st, relating to the "Early Rose" potato, reminds me of our success with this new and valuable seedling. We procured this last spring, from Messrs. B. K. Bliss & Son, of New York city, one and one quarter pounds of "Early Rose," costing, with postage, \$2.50. The tubers were cut as nearly as could be into one eye pieces, and were planted from eighteen to twenty inches apart, alongside and in the same soil as our common garden varieties. The plants were almost dried up during the period of our unprecedented drought, but the rains of August had the effect of renewing their growth, which continued till the vines were killed by the frost. Hence no idea could be obtained of their earliness or time of ripening. The potatoes were taken up September 29th, and weighed. They yielded one hundred and twenty-five pounds (125 lbs.) to each pound planted. We have no doubt the yield would have been much larger had the season been an ordinary one; but it was enough to show what an enormously productive potato the "Early Rose" is. Parties who have tried the "Early Rose" this season report generally of from one to eight bushels from the pound of seed.

The potatoes were all of good size (few or no small tubers), many weighing one pound and a quarter each. The great yielding qualities of the "Early Rose," its early ripening, producing marketable potatoes in eight weeks from planting, its fine table quality, its good size and shape, having full eyes, even with the surface of the tuber, and fine appearance—in these last respects being the best of all of the fifteen varieties in our cellar—go to produce a potato of great value.

We also tested, this past season, the principal Goodrich seedlings, from seed procured from original sources, in New York, the results of which are so extraordinary that we shall send an account for publication before next season. Suffice it to say here that the "Early Goodrich," one of the best, if not the most valuable of the Goodrich seedlings, produced at the rate of 300 per cent more than the common "Reds"—the variety raised in this section for the main crop—and 200 per cent more than "Californias" or "Rocky Mountain" variety, a coarse potato of little value, except for stock feeding and the largest yield cultivated here. All the varieties were grown on the same soil, and received the same culture in every respect, the object being to get an idea as near as could be, of their comparative values.

J. F. C.

L'Original, Ont., Nov. 11th, 1868.

Productive Vermont Farm.

THE *Newport (Vt.) Express* gives the following account of a farm in Derby, on the north line of the State of Vermont, near the Canada border:—

Last summer we spoke of the hay crop of Emera Kingsbury, Esq., of Derby, amounting to nearly eleven tons on a little less than one and three-fourths acres. This was cut June 21, and consisted of timothy, red and white clover; the timothy not headed, and the red clover not all in blossom. Mr. K. now informs us that his second crop on the same piece, cut Aug. 3rd, was 6,185 pounds, or a little over three tons, making the total yield from one and three-fourths acres ten tons, or five and three-fourths tons to the acre. Mr. Kingsbury has scales set in his barn, and weighs all his crops, as well as his stock before and after fattening, and after slaughtering, so that he is able to tell exactly what he is doing, and the results of all his operations.

We were so much interested in Mr. K.'s account of his hay crop, that we have prevailed on him to give us some further details of his farming. His farm consists of 192 acres, 40 of which are in pasture.

His corn crop was quite as remarkable as his hay. From 162 rods he has harvested this fall 251 bushel baskets of ears. One basket of this corn, when shelled, made eighteen quarts. This would give a yield of one hundred and forty-two bushels of shelled corn on two rods more than an acre of ground. In reply to our inquiry as to how the land was prepared for the crop, Mr. Kingsbury stated that last year he grew oats upon it with a light dressing of manure; this year he spread a compost of potato tops, cut cornstalks and straw (upon which he yarded his cows last summer), and which was thoroughly rotted; harrowed this in, furrowed four feet apart for the rows, and made the hills a little less than three feet apart in the row; into each hill he put a shovelful of muck on which he had yarded his hogs. Thorough cultivation did the rest. The variety he cultivates is a long-eared 12-rowed sort, which he thinks as early as the smaller kinds, more productive, and yielding a much greater quantity of forage. He says he had by actual weight from the above field 15,360 pounds of fodder, and that this fodder alone is worth as much as the corn and forage together from the same breadth of Canada corn. Last year, from one and one-eighth acres, he raised 237 bushels of ears, and over seven tons of fodder.

Mentioning some other large yields, Mr. Kingsbury stated that in 1860 he raised 762 bushels of oats on nine acres; and in 1866, 581 bushels on seven acres—the first-mentioned crop weighing 35 pounds, and the last 36½ pounds per bushel. Of Jackson white potatoes, Mr. K. has raised this season 192 bushels on 77 rods—one potato weighing 2½ pounds.

Mr. Kingsbury uses no artificial fertilizers on his farm, relying on his muck beds, his composts and his stock, to produce everything necessary to enrich his land.

While talking over the subject of exact weighing and measuring, and their importance to the farmer, Mr. Kingsbury alluded to the shrinkage of beef cattle and hogs in slaughtering, and gave us a few figures from his books to show that this shrinkage is usually overrated, especially by drovers and dealers. Four fat hogs killed by Mr. Kingsbury shrank 12½ per cent., or one-eighth. Two cows killed Dec., 1866, shrank—on 22 per cent, and the other 37 per cent. A four-year-old heifer killed Dec., 1867, dressed 987 pounds, and shrank less than 28 per cent. The figures are worth remembering.

Irrigation of Meadow Lands.

THE advantages and practicability of irrigation are being considerably discussed. The *Utica Herald* gives the following account of the results of the plan practically carried out:—

"Mr. Emey Allen, of West Turin, Lewis County, N. Y., who has a beautiful farm of some 335 acres lying along the foot of a range of hills, has practised irrigation upon his meadows for some years, and with excellent success. He has 100 acres of meadow in one field, the surface quite level, over a considerable portion of which the water is carried in the spring. This meadow lies at the foot of the hills, and streams come down and enter it at different points. In the spring the melting away of the deep snows from the hills and lands above, furnish a large amount of water, which is spread over the meadow, and all fertilizing matter mingled with the water allowed to settle upon the soil. The meadow is not naturally wet, but is dry enough for the plough. The soil is deep and of remarkable fertility, and by a judicious system of irrigation, is made to yield large crops of grass.

Quite a number of acres of the irrigated portions have never been ploughed, the hillocks and uneven surfaces having been levelled with the spade. Mr. Allen estimates the crop of grass grown upon the meadow the present season at 300 tons. We went over this meadow and found it covered with a luxuriant growth of herbage, the whole presenting one of the finest pieces of grass land that we have recently seen.

Mr. Allen says his average yield of hay from 120 acres of meadow, for a series of years, has been, one year with another, not less than 250 tons per acre.

Last winter his stock consisted of fifty-seven canal horses, five work horses, two yoke of cattle, twenty-six cows, five two year old heifers, seven yearlings, and twenty-seven sheep, and he sold and drew off twenty-six tons of hay, having several tons left over.

We should have remarked that forty acres of this meadow have never received a portion of manure, but have been kept in a high state of fertility, solely by irrigation. The water is let on very early in spring, and is about three weeks in working itself off. The annual product is about three tons per acre. The grass here is cut but once during the season, and the after-math is fed off in the fall, but never allowed to be closely cropped. Mr. Allen thinks he would get a finer quality of grass by feeding the meadows

in spring, say till about the twenty-fifth of May. The grass is mostly timothy, clover and red top, though of course largely intermixed with native grasses. When Mr. Allen's father came into the country and settled here in 1797, the whole country between Turin and Kingston, Canada, was a dense forest, in which no timber had been cut."

How to Kill Wild Oats.

To the Editor of THE CANADA FARMER:

SIR,—The following plan has been found very useful in eradicating wild oats. Plough the stubble early in the fall, and harrow well. Cross plough early in the spring, and after a few days harrow well. About the latter end of May, plough a third time and sow with barley.

This mode of cultivation will do much towards germinating and then killing the foul seed. But should wild oats still appear, there is one more chance. Barley will ripen in time to harvest when the "oats" are yet green, so preventing the seed from shaking off to pollute the land for another year.

Several farmers of my acquaintance have tried this method and found it good.

ROBERT BROWN.

Garafaxa, Nov. 18th, 1868.

Unprofitableness of Hop Farming

OUR American exchanges are comforting unfortunate hop-growers by the publication of the following paragraph from Mr. Caird's, "English Agriculture," in reference to the culture of the hop in Sussex, England, where from 10,000 to 12,000 acres are usually occupied by this crop:—

"This plant requires the richest soil of the farm, and receives nearly all the manure produced, robbing the corn and root crops of the share which rightfully belongs to them. The farmer's attention is concentrated on his hoggarden, and the rest of his farm receives very little of his regard, and hardly any of his capital. The operation of the duty gives the business a gambling character. A favourable season, with a large yield of hops, is disastrous to the farmer, as the market value of the article falls, while the duty swells in proportion to the lucky character of the crop. When the crop is a short one the farmer prospers, as the price of the hop rises and the total amount of the duty falls. There is thus a constant succession of chances, extraordinary prices being sometimes realized, which tempt men to further adventure and withdraw them from that steady, persevering industry, without which agriculture cannot be profitably carried on. The uncertainty of prices and crops, and the peculiar bearing of the duty, are such that very few of the hop farmers are enriched by it, many are ruined, and still more are kept on the verge of bankruptcy. It is very probable, therefore, that if the cultivation of hops were to cease, it would in the end be no loss to the Sussex farmer, as his richest land would then be released for the growth of crops of a less hazardous kind, and the rest of his farm receive a fair share of manure and cultivation."

Loss in Stacking Hay.

A FARMER of sound judgment, and large experience in cutting and storing hay, estimates his own loss in stacking at twenty-five per cent. He cuts probably a hundred tons a year, and stacks a fifth part of it for want of barn room. He has very properly made up his mind to build a new barn. We think his estimate is not wide of the mark. There is a large loss from moulding at the bottom of the stack, and old rails, boards, or straw, will not wholly prevent it. Then the whole external surface for three to six inches is weather-beaten, and loses much of its sweetness, and it is not improbable that this loss of aroma extends through the whole stack. The conviction is universal among intelligent men, that barn-stored hay is worth much more than that which is taken from the stack. Why then follow this wasteful practice? Look at the great loss to this farmer who cuts one hundred tons of hay, worth \$2,000. According to his own estimate, he pays \$100 a year for the privilege of stacking one-fifth of his crop. This is but a small part of the loss where the hay is fed out at the stack. It costs at least a third more hay to keep cattle without shelter. These are strong arguments for more barn-room.—*American Agriculturist*.

Stamp Pulling.

To the Editor of THE CANADA FARMER :

Sir, Some fourteen months ago I inquired, through the columns of your valuable journal, for a screw stump machine, and received the desired information. I purchased one of the above-named machines for about \$175. This machine requires three men to clean the stump while being raised; one horse to wind it up; also, one yoke of oxen to move it from one stump to another. On an average, we can pull eight pine stumps per day. In looking over the last number of the CANADA FARMER I see an account of a machine, called the "Pioneer Stump Puller," exhibited at the N. Y. State Fair by C.H. Church, of New Berlin, Chenango County, N. Y., which is said with "two men will raise a weight of 25,000 pounds, and pull 100 stumps a day." If that is so, it puts my machine in the shade altogether. I would like to see a draft of this "Pioneer Stump Puller," and have a full explanation of the same. I think it would pay any person or persons wanting a job of pulling stumps to purchase one of these machines, as I have from two to three thousand stumps to take out, which I will let in lots of from fifteen to twenty-five acres.

I have been paying from sixty-five to seventy-five cents per stump, that is, for pulling and burning off, leaving the land ready for cultivation. Any person or persons wanting a job on the above-mentioned terms can have it by applying to

THOS. BURNHAM.

Sandford, Nov. 6, 1868.

NOTE BY ED. C. F.—Our correspondent had better write for further information to the manufacturer of the "Pioneer Stump Puller," who most likely has an illustrated descriptive advertisement or circular of the machine in question.

Cost and Profit of a Root Crop.

To the Editor of THE CANADA FARMER :

Sir,—At this season of the year one often hears the question asked whether root crops really do pay; and as they are certainly becoming daily of more importance in Canadian agriculture, it is probable that many would give them a trial, were they not deterred from doing so by the seemingly enormous cost attendant thereon. If, therefore, some of your readers who have been in the habit of cultivating this crop, would give their experience of the cost per acre, I think it would be conferring a benefit on the farming community.

I append hereto my own estimated cost per acre of a crop of turnips.

Rent.....	\$4 00
Seed, 3 lbs., at 30 cents (say).....	1 00
Ploughing twice.....	4 00
Cultivating, harrowing, &c.....	2 00
Hoeing twice.....	10 00
Pulling.....	2 50
Carting.....	2 50
Manure—20 loads at 50 cents.....	10 00
Carting, spreading, &c.....	10 00
	\$46 00

There is, besides, the expense of making the drills and putting in the seed. If I am correct in the above estimate, nothing short of an extra crop will balance the cost.

DEWDROP

Hamilton, Nov 20th 1868

CHOPPING.—A correspondent criticises "Mark Tapley's" directions for using an axe. He takes exception to the weight of the axe recommended, 8 lbs., as the best choppers in his locality usually prefer one weighing about 4 lbs. The length of the chip directed to be taken out, three feet for a tree four feet in diameter, is objected to as out of all proportion, and an impossibility if it is only commenced at the height specified. "Mark Tapley's" description is no doubt somewhat ambiguous and inconsistent, and there is a manifest error in regard to the weight of the axe-head.

A Table of Dimensions of Dry and Liquid Measures.

The following useful table is supplied by a correspondent of *Colman's Rural World*. It will be found convenient in making calculations of quantities, or in extemporizing measures when required, by constructing a box of the right dimensions.

Measures.	SQUARE VESSEL.			ROUND VESSEL.	
	No of Cubic Inches.	Length.	Breadth.	Depth.	Diameter.
Barrel.....	10762.0	12	22	21 7-32	21
Bushel.....	2150.4	13	13	12 3-4	18 1-2
Peck.....	537.6	13	8	8 6-16	10
Gallon.....	268.8	13	4	5 1-2	7
Quart.....	67.2	13	4	4 3-16	4
Pint.....	33.6	13	2	3 3-4	3 1-2
Gill.....	8.4	13	1	2 3-32	2 21-32

Measures.	SQUARE VESSEL.			RD VESSEL.	
	No Cubic Inches.	Length.	Breadth.	Depth.	Diameter.
Barrel.....	7276.0	20	20	18 3-16	21
Gallon.....	231.0	6	6	6 6-16	7
Quart.....	57.75	3-4	3-4	4 3-32	4 19-32
Pint.....	28.87	3	3	3 3-16	4 1-16
Gill.....	7.22	1 7-8	1 7-8	2 1-16	2 9-32

On Mr. Mechi's farm in England, which contains 170 acres, there are 72 acres in wheat and 18 in pasture. This is a leased farm, yet Mr. Mechi used £16, or nearly \$80 in grain per acre, and would have preferred to have increased this to £25. He made 18 percent profit.

NORWAY OATS.—A variety of Oats under this name has been extensively advertised and extravagantly lauded. Considerable dissatisfaction has, however, been expressed among our neighbours in the States, in regard to the true merit of the variety, and the advertisers are charged with endeavouring to put a fictitious value on a very ordinary grain.

CRANBERRIES IN UPLAND.—A correspondent of *The Rural American* says:—"My own experience, and that of many others, is proof conclusive that they can be grown successfully and profitably on dry uplands. A clay or loamy soil, that is naturally moist, is the best. Upon such there is no doubt of successful culture. The land should be prepared by ploughing and harrowing thoroughly, rake level, and plant in rows 1 1/2 feet apart, and one foot in the rows. Hoe the plants as long as convenient without disturbing them, after which weeding is all the cultivation necessary. The plants are set in spring until the 15th of May; in the fall, from the 1st of October, until the ground freezes. On the pine-barren lands of Long Island they grow to perfection without the usual course of flooding, which so many consider necessary.

THIN SOWING.—The accompanying letter is from a practical farmer, who for many years has occupied a 700 acre farm in West Norfolk. My best field (one bushel seed) yielded 7 quarters 2 bushels per measured acre of fine white wheat (Club-headed Rough Chaff); sold for 60s. per quarter. My whole wheat crop (73 acres) will average 6 quarters per acre. The peck an acre yields 2 bushels per acre less than the adjoining 1 bushel, which was over 6 quarters of white wheat per acre. The peck an acre was put in as late as the 20th of November, which I do not recommend, but was determined to put it in same day as the rest.—*F. F. Mechi, Tiptree, October, 1868.*

The following is the letter of Mr. Mechi's correspondent:—"Oct. 13, 1868.—At the request of my brother, I write to inform you of the result of my experience in thin sowing for wheat last year. From what I saw on your farm, and what I read in your publication, I was induced to try 4 pecks per acre in four different fields. As you may suppose, my labourers laughed at the idea of it. I need not tell you that the ridges selected for the purpose were

very visible all winter, even before you got near the field; looked very thin. As soon as the plant began to grow in the spring, it told us what it was going to do. I had a few friends to look at in the summer, and I think I may say that every one was in favour of the thin sowing, both as to straw and corn,—that is to say, 4 pecks against 7 pecks per acre, which is my usual quantity. I had that which grew in one field cut by itself; also the adjoining ridge, each containing 3 roods and 36 perches. The 4 pecks per acre gave me 13 coombs and 2 pecks. The 7 pecks per acre gave me 11 coombs 3 bushels and 3 pecks. I shall try it again this year."

THE MANUFACTURE OF MANURE.—Many of our farmers complain that they cannot make enough manure, and I never yet found a good one who has had too much. Now I think that if a farmer has hay enough there need be no difficulty in obtaining enough manure.

We see many of our barnyards constructed with escape holes in the wall along the lowest side of the yard, and from these holes a passer-by can scarcely fail to notice the very essence of manure escaping. The most valuable portion of the manure are those which are soluble, and of course these are taken up by the water in its passage through the manure and out of the yard.

Not long since I was arguing with one of my neighbours upon the propriety of stopping up these holes in his barnyard wall, when he met my objection with the assertion that he could not keep his yard clean enough to keep cattle in. A further investigation showed that his yard was not supplied with rain spouts, and consequently there was more water in the yard than fell there in direct descent. Yet this same farmer would complain that he "could not make manure enough," and this, too, when the most valuable portion of what he did make was escaping into the public road and into his neighbor's land.

If no more water finds its way into the yard than that which falls into it, there should be no difficulty in keeping it clean with the materials found on a common farm, such as coarse grass from the swamps and lowland, sods from the roadside, tussocks from the meadows, whose removal, while it benefits the manure pile, also improves the appearance of the meadow. If these are all used up, then it will be time enough to complain of the difficulty of not being able to make manure.—*Correspondence Germantown Telegraph.*

FEEDING OFF AFTERMATH.—It is a very common practice with farmers to reserve their meadow feed until very late in the fall, even so near to the winter that the frost has taken nearly all the succulent and nutritious properties out of it; but, by this mode of management, very little benefit is received, and in many cases great injury is done. Some advocate, however, that aftermath should not be fed off at all, but left as a shield and mulch for the roots; but from our own experience, we do not believe meadows are injured by being pastured in the fall if it is done at the right time and by certain animals.

Meadows are injured by horses and sheep late in the season; for after the blades of the grass are killed, these animals will nip close to get sweet feed. They never should be allowed upon mowing land after the grass has stopped growing, not even in winter when the ground is frozen, for they will then gnaw to the very roots.

Horned cattle are really the only fit animals for the meadow, and they should be turned in while the feed is good, and removed as soon as the earth becomes moist enough for their feet to break the sod. In this way a profit may be derived on one hand, without any loss attending on the other, and sufficient protection left for roots. Timothy, and many other grasses which are common, take strong hold upon the soil, and are difficult to eradicate, and for this reason farmers abuse their fields.

Close feeding kills out here and there a little, and mosses, with other foreign matters, work in so gradually that it is for a few years hardly noticeable, but eventually the meadow has to be ploughed and restocked, because a paying yield of grass is not received.

Now, all this results from injudicious management, for we know of many meadows which yield heavy crops every year of the best quality of grass, that have never been ploughed or re-seeded since the land was cleared, nearly half a century ago. They have always been pastured in early fall, never fed close, and have occasionally received a top-dressing of barnyard manure.—*Ohio Farmer.*

Stock Department.

"Wharfdale Rose."

ANNEXED is an engraving of "Wharfdale Rose," a yearling heifer of great beauty and promise, imported by M. H. Cochrane, Esq., of Compton, Quebec, at the same time as "Duchess 97th," who lately figured in our columns. Both these animals were purchased of that noted breeder of Short-horns, Capt. Gunter, and by a comparison of their pedigrees it will be seen that they were sired by the same bull, and that, on the female side, the heifer now illustrated comes of no mean stock. "Wharfdale Rose" deservedly took the highest honours in her class, both at our own Provincial Exhibition and at the New York State Fair. One of the best judges of Short-horn cattle in the United States, Mr. Sanford Howard, writing to the *Country Gentleman*, says of "Wharfdale Rose,"—"This is a very promising animal generally,—well shaped and clean fleshed." The following is her

PEDIGREE.

"Wharfdale Rose," roan, caved September 27, 1867; bred by Capt. Gunter, Wetherby Grange, Yorkshire; got by "3rd Duke of Wharfdale," 21619, roan, bred by Capt. Gunter. Dam "Oxford Rose," red and white, sired by "6th Duke of Oxford," 12765, roan, bred by W. Tanqueray; gr. dam, "Moss Rose," got by "Ravensworth," 9532, roan, bred by W. Emerson; g. g. dam, "Graceful," got by "Freebooter," 7025, roan, bred by the Earl of Carlisle; g. g. g. dam, "Treasure," got by "Garthorpe," 2019, roan, bred by the Earl of Carlisle; g. g. g. dam, — got by "Belshazzar," 1704, roan, bred by the Earl of Carlisle; g. g. g. g. dam, — got by "Don Juan," 1923, roan, got by "Muggen's Bull," &c., &c.



"WHARFDALE ROSE,"

The Property of M. H. COCHRANE, Esq., Compton, Quebec.

The Compton Short-horns.

WE are glad to learn that some valuable additions have recently been made to the Compton herd of Short-horns, and that the importations made from England during the past summer are thriving on Canadian soil. The fine Booth heifer, "Star of Braithwaite," bred by Mr. Brewer, of Yorkshire, for which Mr. Cochrane paid 250 guineas, has lately dropped a fine roan bull calf, sired by Mr. Carr's bull, "Prince of the Realm," (13510); "Star of Braithwaite," by "Baron Booth," (21212); dam, "Star of Windsor," by "Windsor," (14013); gr. dam, "Vesper," by "King Arthur," (13110.) Our readers who are familiar with the *English Short-horn Herd Book* will know how to appreciate such a pedigree. The noble cow "Rosedale," after some weeks of knocking about on the cars, attending a number of exhibitions, and reaping a rich harvest of honours for herself and her owner, had been but a few days in her byre at Compton, when she gave birth to a rich roan heifer, sired by the "11th Duke of Thorndale." Both "Rosedale" and her calf are doing well. Mr. Simon Beattie, in a note received the other day, says, "Rosedale" is looking as gay and vigorous as a three-year-old heifer, and is as light on her feet as a fawn, thus giving proof of the strength and stamina of the Booth cattle. The "11th Duke" gives

every promise of being a most valuable stock bull. Such of his progeny as have made their appearance at Compton, to the number of four—three heifers and one bull—are every way satisfactory as to quality, colour, and general characteristics. Mr. Cochrane has also bull calves from two other imported dams, both doing and promising well. One is from Mr. Harvey's "Walton on the Hill," got by "Lord Wild Eyes 5th"; dam "Wild Eyes 26th," by "Lad of Walton," (17787); gr. dam "Wild Eyes 24th," by "4th Duke of Oxford," (11387), &c. This calf was dropped a few days before leaving England, and is a fine, strong animal. The second is from Mr. Brewer's other heifer by Mr. Carr's "Prince of the Realm," (13510); dam "Pink Thornleaf," by "Baron Booth," (21212); gr. dam "Windsor Lavender Leaf," by "Windsor," (14013), &c., &c. This calf was born on boardship during the voyage from Liverpool to Canada, and is a perfect type of a Booth bull. We congratulate Mr. Cochrane on his good fortune thus far, and hope he may have a good run of it, with the choice animals he has obtained at so much cost and trouble.

the exhibition just being held is that breeders and admirers of sheep, of all shape and lineage, have been placed in such proximity that a rare opportunity is thus afforded to all, to see placed within the precincts of the agricultural hall all descriptions sheep of the different sorts.

"5. Every attempt to improve and perpetuate a more improved or judicious class of the ovine tribe was most transparent throughout the day. Graziers, exporters, importers, and the general farming community, seemed alike anxious to possess themselves of exchange, or hire out the services of their celebrated ram sheepwalkers as suited the country."

Weaning Colts.

THE following communications have been received since the last article on the same subject went to press, and were not in time for the CANADA FARMER of Nov. 15th. They are based on the experience of practical men, and we give them to our readers that they may be enabled to compare notes. The first letter is as follows:—

"To the Editor of THE CANADA FARMER:

SIR,—In your paper of the 2nd instant, an inquirer,

'Gosford,' says 'if any of your correspondents practically acquainted with a good way of weaning colts would give the benefit of his experience through your columns he would confer a great favour.' Now, although not heretofore a correspondent, I will venture to give my experience. In the first place, I aim to take the common sense view of everything. I put the colt in a good pasture, and if I can do so, I give some company that it is acquainted with. But, at any rate, I put the mare in the adjoining field; then they both feel as if they were not separated, and do not wear off any flesh by anxiety and running. And I take the mare in to the colt twice a day, for two or three days, and let it suck. After that, I let

it suck once a day, for two or three days; then I let it suck every other day for two or three days, and if necessary to dry up the mare, I will perhaps let it suck once or twice in the course of the next week. By that course the colt will get weaned and the mare will be dried up, and neither of them lose flesh or be punished, which is both to my interest and their mutual comfort. If my experience is of any service in weaning colts, I will some time give my experience in breaking them, in which I also take the common sense view.

Wilton, 9th Nov. 1868,

H. P."

Another subscriber writes:—

"In answer to the query respecting weaning colts, I beg to submit the following note. There are various ways in which they may be weaned. I think as good a way as any is to take them from the dam and tie them in a stable by themselves, with strong halters, and give them milk from the cow, which they will take the second or third time it is offered to them, if they get no water. You may give them milk and water as suits. Afterwards, give a few oats, and all the hay or green clover they can eat, when it can be got. At the end of seven or eight days, lead them out to the field at noon, and take them in at night (there must be good fences to keep them in). By doing so, you will soon have them to lead like old horses."

"Gems from the Report of a Sheep Show."

UNDER the above heading, we find in one of our British exchanges the following "gems," culled from a report given by one of the Dublin dailies, of a Sheep Exhibition, lately held in that city. The name of the journal in which they first appeared is not given, but it is remarked that the subjoined extracts bear a strong resemblance to a report of a Royal Agricultural Show in the *Irish Times*, which descanted in a similarly lucid style on what were designated, "The eventful events of the past week." Evidently all the high falutin reporting is not done west of the Atlantic. Here are the "gems":—

"1. Root crop cultivation received such an impetus from such exhibitions that the models of the tiny roots then grown, contrast so diminutive with the creditable samples now being yearly staged within its walls, that the most superficial observer can at once perceive the magnitude of the comparison.

"2. The old Irish cow, whose tediousness to fatten or mature, and whose usefulness, in a pecuniary sense, to the owner was comparatively worthless, has been now substituted by those valuable animals of improved breeds which any casual observer cannot fail in discerning throughout the farmeries of the country.

"3. The subject of sheep breeding in Ireland has recently assumed a very undivided state of opinion.

"4. The most important feature in connection with

Canadian Natural History.

The Wolverine.

(Gulo luscus.)

The settlement of the country has driven entirely away from many localities animals that were once common, and among the creatures that have almost disappeared from the neighbourhood of man is the Wolverine; though several times lately accounts have been published of its intrusion into dangerous proximity to human habitations. It is one of the larger members of the group of animals with which it is most closely allied, but, though extremely voracious, is by no means so formidable as it has been popularly supposed to be. It is a carnivorous animal, and feeds principally upon the smaller quadrupeds. Its general appearance is not unlike that of a small bear. Indeed, Linnæus and some other naturalists have placed it in the same family (*ursidæ*), but it is more properly classed with the weasel tribe (*mustelidæ*), of which the more common Canadian representatives have been noticed in recent numbers of the CANADA FARMER.

The Wolverine is an inhabitant of Northern America, Siberia, and a great part of Northern Europe, its geographical range extending from 42° to 75° north latitude. The ordinary length of the full-grown animal is about two feet, exclusive of the tail, which is about six inches long. The general colour of the fur is a brownish black; the nozzle is black as far as the eyebrows, and the space between the eyes of a brown hue. The body is stout and compactly made, with an arched back, and but little elevated from the ground, the legs being short. The head is small, round, and broad, suddenly diminishing to the nose. The ears are nearly concealed by the fur. The eyes are small. The fur is loose and shaggy, of a brown tinge, deepening into black, especially toward the extremities, the paws being quite black, and the contrast between the jetty fur of the feet and the almost ivory whiteness of the claws is extremely curious. A paler tinge of colour, sometimes almost whitish, is observable on the chin and between the fore legs. A broad band of light chestnut extends along the flanks, meeting its fellow of the opposite side near the root of the tail. This appendage, like the feet, is black, and shaggy with long pendulous hairs. The toes, five in number, are distinct, with long, hooked claws. The paws are very large in proportion to the size of the animal, and it is supposed that this modification of structure is intended to enable the Wolverine to travel over the snow.

This animal is perfectly at home among the branches of trees, and although not apparently very active or alert, it will retain its hold and drop or leap from a considerable height with ease and security. It is much detested by trappers, as it follows them, and is in the habit of detaching the bait from the traps. By its keen scent it also frequently discovers the store-houses of provisions, or "caches," as they are called, which the provident hunters lay by, in order to fall back upon in case of bad success, and robs them of all animal food that it can find.

The Wolverine is not a very prolific animal, as it seldom produces more than two at a birth. The young have a uniform downy cream-coloured fur. The nest is frequently placed in the crevice of a rock, or in some secluded situation, and the young Wolverenes make their appearance in May.

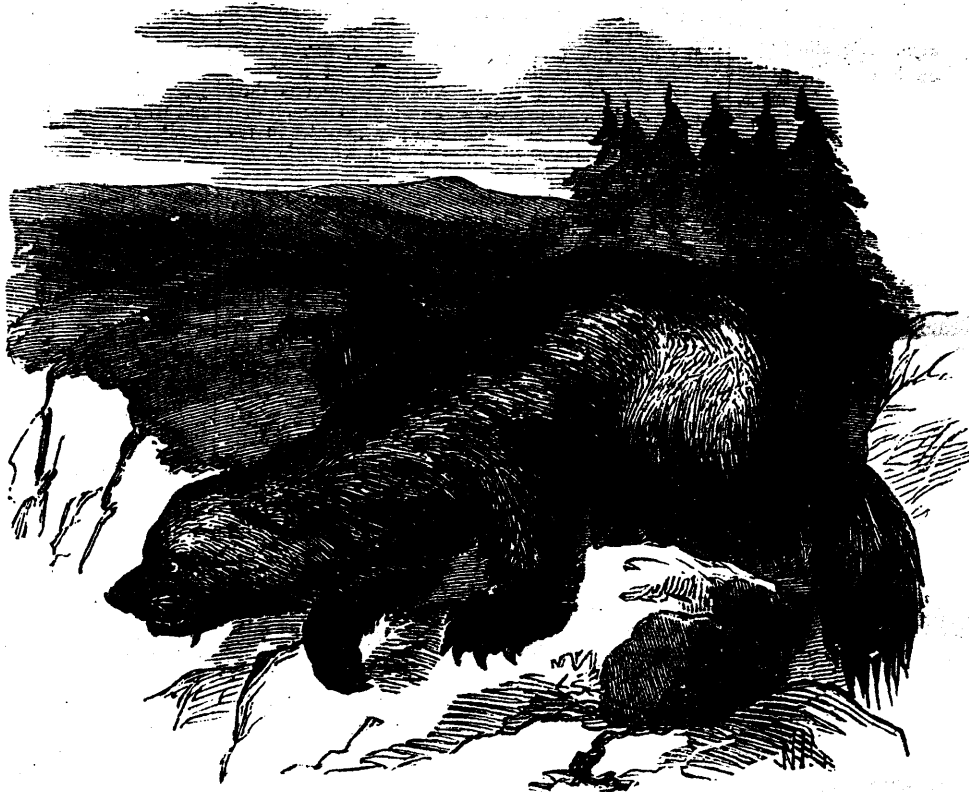
Salmon Culture in Ontario.

In the number of THE CANADA FARMER for March 1st, 1867, we gave an account of Mr. Wilmot's experiments in propagating salmon, and described at some length the usual method of conducting the process of artificial fish-hatching. It will no doubt be interesting to many of our readers to learn what progress has been made by Mr. Wilmot in his interesting and important enterprise. In bringing the matter once more under notice, it may be well to refer to the circumstances which led to the undertaking, and to describe again the changes that take place from the birth to the maturity of the fish.

There was a time, not many years ago, when the

too strongly insisted upon. It touches the interest of every town and village along the shores of the Lake, and appeals directly or indirectly to every commercial man throughout the Province. Every farmer and settler in the country is affected by it in one way or another, and the whole community suffer by its neglect, and benefit by its being cared for. Knowing that every ray of light thrown upon the subject tends to its welfare, and feeling that every effort of private enterprise redounds to the public good, we speak with the greatest pleasure of the admirable pisciculture establishment in our own neighbourhood, which we have just inspected.

Mr. Samuel Wilmot, of Bowmanville, on the shore of Lake Ontario, has watched the streams in his neighbourhood becoming gradually depopulated; and remembering them when they were, so to say, alive with salmon, he determined to make some effort to restore the fish to their former abundance, feeling confident that with the forbearance and assistance of his neighbours, a sensible improvement might be made in the course of a very few years. His first attempt was conducted on a very limited scale, but being satisfactory, he enlarged his operations with each successive season, until his labours are now beginning to show most gratifying results. In order that the reader may better understand what has been done, as well as what is doing, and see clearly the perfect method of Mr. Wilmot's salmon nursery arrangements, we will explain shortly the changes undergone by a salmon from the earliest period of his existence until that time when he becomes the terror of smaller fish, and the lawful object of man's chase. It is a well-established fact, that when their spawning time arrives, salmon will almost invariably seek those streams in which they themselves were hatched. Travelling up stream, the female salmon, accompanied by her mate, selects some shallow, gravelly



tributary creeks and brooks of Lake Ontario and the St. Lawrence were the homes and native waters of countless shoals of salmon. From the Gulf of the St. Lawrence to the Falls of Niagara, these splendid fish were in rich abundance, yielding a full harvest to all who would gather it, and serving as a bounteous garner from which white man and Indian could draw with unsparing hand for summer food and winter store. As civilization, with its accompaniments, mills, steamers, and manufactories, spread, so the salmon decreased; and as the salmon decreased, so ill-advised and ignorant men became keener in their pursuit, destroying the fish at those times when they ascended the streams to breed. Year by year the shoals became smaller in size and fewer in number, until the time arrived when the once fertile streams became barren, and localities in which salmon could be found in thousands, produced perhaps half a dozen. An Act was passed by the Legislature for the better protection of the natural and artificial breeding of fish, but, though this is a very excellent measure, it is but one step in the right direction, for the harm has been done, the fish are gone, and the wealth that lay by our hand is departed, if not for ever, at least until some method is arranged for its reorganization and protection.

bank on which to deposit her ova. In this both male and female fish dig furrows, using their tails for that purpose, and not their noses, as is very commonly believed. In these furrows the female lays her eggs in the ratio of about six hundred to every pound of her own weight, and over these the male fish deposits his milt or impregnating fluid. They then cover the furrows with the surrounding gravel, and leave the eggs to the effect of time and the running water. This occupation requires from three to twelve days, according to the condition of the salmon and the surrounding circumstances. The eggs, unless disturbed by the action of the stream, or the depredations of birds, or other enemies, remain for a length of time, varying from ninety to one hundred and thirty days, according to the temperature of the water, at the expiration of which period the young fish make their appearance. It must be remembered, however, that these eggs are the prey of innumerable foes; ducks, kingfishers and water lizards hunting them out and devouring them wherever they can be found. As the banks wherein they are laid are in the shallow parts of the water, and easily distinguishable by the bright appearance of the gravel, they are readily found, so that an almost incredibly small per centage of the eggs deposited by a shoal of salmon are ever brought to life. Added to this is the damage done by every

This is a matter, the importance of which cannot be

freshet, which disturbs the banks and destroys the ova. When the fish first emerges from the egg, he is called an alien, and is an ugly little creature, with a disproportionately large head, and an unpleasant looking excrescence attached to him at the point where his gills should be. This is called the umbilical bag, and contains the food that sustains him until he has absorbed the whole thing, when he becomes marked with dark spots, and is then in his second stage, and is called a "Parr." For about twelve months he remains in the pools and shallows about the district of his birth-place, during which time he grows to the length of four or five inches, and changing into his third stage becomes a "Smolt." It is in this phase of life that he experiences the instinctive desire to reach the sea, and takes his departure, usually in the spring of the year, to return in the autumn as a grilse. So rapidly do salmon grow at this period of their existence, that a smolt weighing a few ounces, and measuring four and a half inches long, will return from the sea, after an absence of a few months only, weighing three or four pounds, and measuring about fifteen inches in length. In this stage he is capable of performing the functions of a male fish, although, strange to say, his mate is usually a female salmon, as few female grilse return to spawn. Migrating once more when the spawning season is over, the grilse returns a full-blown salmon. This is, of course, assuming that he escapes the thousand and one dangers that beset his way between the ocean and the stream, the stream and the ocean. Many salmon return to the shallows scarred with wounds inflicted by other fish, and marked with the salt water parasites, which cling to them in the ocean, but which are discarded on coming into fresh water.

Encouraged by the Legislative Act that made the taking of salmon from a breeding stream a punishable offence, Mr. Wilmot commenced his operations in the fall of 1866 by hatching a small quantity of salmon ova in his own kitchen. The fish from these he turned into the creek, and then gave his attention to utilizing the stream itself, in which, at this time, there were hardly six grilse to be seen. In the following year there were not more than a dozen; but in the present year no less than one hundred and fifty grilse have made their way into a portion of the water set aside for them; besides a number of others that remain outside in the body of the creek. These one hundred and fifty must therefore have been from the number turned into the stream in the fall of 1866, for those were now due according to all the calculations and deductions of pisciculturists, and up to the time of their appearance the stream had produced but a mere handful. This shows very conclusively what a little fostering care can do towards restocking our waters; for were these grilse the result of natural breeding, they would represent a deposit of between a quarter and half a million of eggs. This proportion may at first sight appear large, but is by no means exaggerated, and it can be easily comprehended by any one who considers the innumerable dangers that beset the young of the salmon. Not only are the eggs frequently lost by the effects of heavy rains and the depredations of birds, beasts and insects, but the young salmon has a distance to travel of over a thousand miles, during which time he is the prey of innumerable enemies, not the least formidable of which are the larger fish of his own kind. The existence of any creature must be precarious that lives in constant danger of being devoured by its own parents.

The plans which Mr. Wilmot has adopted for producing salmon and protecting the young fish, before they take their departure for the sea, are as perfect as they are simple, and are in beautiful harmony with the habits of the fish and the nature of the country. His nursery grounds are about a mile and a half from the lake, and are situated in a small stream, rapid and shallow in some parts, and deep and still in others. An artificial breakwater has been built at one point of the stream, and is so arranged that salmon cannot by any chance pass that spot. By the side of this is built a small house, which Mr. Wilmot calls his reception room, and is placed over a small stream, led from the main creek just above the breakwater, and passing through the reception room, empties itself in a small but rapid stream into the main creek, just below the breakwater. Hence, when salmon come up from the sea seeking for spots on which to deposit their ova, they are stopped by the breakwater, which they vainly attempt to pass. Failing to get farther at that point, they work round the spot until they meet the stream issuing from the house, when, with the natural instincts of their kind,

they head up this rapid, and passing through an aperture that affords ingress, but not egress, are safe in the hands of their friend. The water from the auxiliary creek flows into the reception room through two trap doors at one end, and passes out through another at the opposite extremity. Thus the room can be flooded to the depth of four or five feet by shutting the trap door through which the water escapes, and can be shallowed to the depth of a few inches by opening this door and closing the one at the opposite end. Several planks laid partially across the room, edgewise in the water, divide the space into compartments, which enables the breeder to take any salmon out of the water without hunting it about the room or disturbing the other fish. The fish usually come into this reception room during the night, and when thus far up the creek are ready to spawn, and seeking fit places for that purpose. As each new fish arrives in the room, the ova is taken from it at once. The method of doing this is very simple, and does not in any way injure the parent fish. A man goes into the water, and having his hands covered with woollen gloves, to prevent the salmon slipping from his grasp, seizes the fish just above the tail. Two or three platforms cross the room at the height of two feet from the water, and on one of these an assistant stands ready to receive the fish. Wrapping a piece of flannel round it, to counteract its slippery tendencies, he places it between his knees and gently expresses the ova into a tin dish. The salmon is then marked either by a hole stamped through her tail, or by the adipose fin being cut, and turned into the water, having performed the operation for which she had travelled nearly six hundred miles. A male salmon is then caught, and the same process repeated. The melt that is obtained from him is left for a few minutes in the water, until the eggs are impregnated, when they are thoroughly washed and placed on the hatching beds.

Adjoining this is a somewhat larger house—sixty feet by twenty—in which the eggs taken from the salmon in the reception room are hatched, and here by these simple means a million salmon can be produced in the year. For while the average per centage of fish raised from a bed of ova in a natural breeding ground is incredibly small, Mr. Wilmot calculates that he can hatch eighty per cent. of the eggs on his stands. It is clear, therefore, that by means of such fish farms as that of Mr. Wilmot, the former abundance of salmon might be restored in a comparatively-speaking short space of time. The artificial hatching of salmon ova in England and America has usually been performed on prepared gravel, and in boxes or in small artificial ponds; but Mr. Wilmot's method possesses a superiority over both these plans, inasmuch as it enables an attendant to remove any added egg, dirt, or other injurious matter, without disturbing the eggs, at the same time that he can by a glance round the room tell precisely how many eggs are in process of incubation. Down the entire length of the hatching room a sloping stand is built, having a fall of about a foot between end and end; a small stream is led into this house over the upper end of the stand, by means of an underground pipe laid to the creek outside. The stream of water runs into a box at the extremity of the stand, and the overflow from this forms a gentle stream, which courses steadily and evenly down the length of the stand, and falling into another box at the lower end, is carried out into the creek. On this stand the eggs are placed in frames constructed in the form of a schoolboy's slate, but differing from that in having a double set of glass bars in the place of a flat piece of slate. These bars of glass are placed at alternate intervals, so that an egg rests on a bar of the lower set and between two bars of the upper. By this means it is kept immovable in its place, and a frame can be removed from its place to be washed or otherwise dealt with, and replaced without changing the position of a single egg. Each of these frames holds a single layer of one thousand eggs, but the stand is so arranged that three tiers of frames can be laid upon it, each of which will be thoroughly subjected to the action of the stream. Taking a bird's-eye view of the hatching-house, the eggs resemble a host of pink peas ranged in successive lines, and in this way they remain until the expiration of about one hundred and twenty days, when each will be burst open by the little creature we have before described. As the alien is born, he drops down with the flow of the water, and is taken out of the box at the lower end, and removed to a small strait that leads from the reception house to the creek, at some little distance down. This was cut for a special purpose, which we will explain. At a point a few yards below the breakwater, Mr. Wilmot has commenced to build a dam, and from this point to cut an auxiliary canal to the right of the main creek, which is to carry the rush of water by this new channel into the creek again at some distance from the hatching-house. Between the point where this dam is built and that where the new channel rejoins the original stream, the creek will be quiet and undis-

turbed by other fish. Into this, then, the small strait runs, so that when young fish appear in the boxes they can be taken out and placed in quiet and secure waters, where they can remain until the time arrives for their seaward migration. Mr. Wilmot has already about two hundred and fifty thousand eggs on his hatching stand, though, as we have said, he has room for more than a million; of these he calculates he will hatch about two hundred thousand fish; and as some few salmon are still coming up, the number of eggs under process of incubation may be considerably increased before the winter sets in. At the same time that this is going on in the houses, the salmon outside in the stream who have not come into the reception room are depositing their spawn in the various gravel beds along the course of the creek, protected from molestation by Mr. Wilmot's jealous care, and unable, because of the breakwater, to get into dangerous localities.

Here, then, is one fish-breeding nursery established by private enterprise, and already laying the foundation of a future supply of salmon. The proprietor of this, with a public spirit worthy of imitation, gives the produce of his labours to the world, for it will be remembered that at the time the fish come to him they are unfit for food, besides being protected by law. Mr. Wilmot has already commenced preparations for further enlarging his breeding ponds; and as year after year goes by, the numbers of salmon will indefinitely multiply, until they of necessity must seek other places in which to breed, and so extend the good work that has been commenced. It is a most interesting occupation, and a most praiseworthy undertaking, and may be beneficially imitated by others who have a little spare time at their disposal, and who are in the vicinity of any stream, however small, that discharges itself into the Lake or the St. Lawrence.

By the means of a few such establishments, the former wealth of salmon may be restored, the lake again stocked, and one of the most valuable products of our country be once more within the reach of all.

Moles—Field Mice.

A CORRESPONDENT at Gloucester wishes to know, through the *Plowman*, the best method of ridding his farm of moles. The *Plowman* replies:—

What he wishes to exterminate the moles on his place for we cannot understand. These little animals are entirely insectivorous, and the amount of benefit they do is very great. Probably our Gloucester correspondent has confounded with the moles those little animals called Shrew mice, or field mice. They somewhat resemble in form the short-tailed, thick bodied moles, but are herbivorous in their food, and do great damage to the grain crops through the country. The moles may be distinguished by their very smooth, glossy fur, their long pointed heads (one species, the star-nosed mole, having a fringe at the snout), and their diminutive, almost invisible eyes.

A good trap for catching all small vermin of the farm is made as follows: Dig in the earth, in the orchards, and gardens, at the beginning of cold weather, short trenches four feet wide at the bottom, and three feet wide at the top, and about four feet deep; the ends inclined at the same angle as the sides. The earth walls of these trenches, after becoming frozen, are impassable to mice that have fallen in. We have heard of great numbers being taken in these traps, and altogether they are the most effectual we know.

BIRDS AND THEIR USES.—Baron Von Tschudi, the well-known Swiss naturalist says:—"Without birds successful agriculture is impossible. They annihilate in a few months a greater number of destructive insects than human hands can accomplish in the same number of years. Amongst the most useful birds for this purpose may be classed the swallow, wren, robin-redbreast, sparrow and finch." Tschudi tested a titmouse upon rose bushes of his neighbour, and rid the same in a few hours of innumerable lice. A robin-redbreast killed in the neighborhood 800 flies in an hour. A pair of night swallows destroyed in fifteen minutes an immense swarm of gnats. A pair of wrens flew thirty-six times in an hour within insects in their bills to their nests. He considers the sparrow very important; a pair of them in a single day carry 300 worms or caterpillars to their nests—certainly a good compensation for the few cherries which they pluck from the trees. The generality of small birds carry to their young ones, during the feeding period, nothing but insects, worms, snails, spiders, &c. Sufficient interest should be manifested by all to prevent the discharge of fire arms in the vicinity of orchards, vineyards and flower gardens, as thereby the useful birds become frightened.

Veterinary Department.

Open Synovial Cavities.

The following is the continuation of the article on this subject commenced in our issue of Oct. 15:

Anatomy is, under the circumstances, a fair guide. Where numerous structures are involved, a well grounded learning is requisite for accurate judgment; but as regards the knee of the horse, the spot where the synovial discharge issues is of all importance. The incision must either be very deep and gaping, all subjacent structures being divided, before the knee-joint can be exposed, or else the wound must affect a very circumscribed place. Each of the tendons, when crossing the joint, is embraced in a synovial sheath. From such information, it will instantly be seen how far mere likely a sheath is to be lacerated than the joint is to be punctured.

The single point where the joint could be entered, without severing tendon, lies rather on one side than directly in the centre. The vulnerable spot is, therefore, not exposed to the full force of the blow. To lay bare the joint by an ordinary fall, several parts must be divided. Rarely is an accident witnessed of so fearful an extent. Generally, that which is spoken of as an open joint proves to be no more than punctured sheath, the presence of synovia being commonly accepted as the proof. But when the joint is really laid open, the immense flow of synovia so many sheaths being severed—should at once prove the fact.

The probe must next be used. In the first instance, it should be employed to ascertain whether the fall has left any purse or sac at the inferior part of the joint. All which was enforced respecting the use of a metallic wire to a raw wound must here be observed. The probe had better be altogether discarded than employed with the smallest approach to rudeness.

The suspected sac having been discovered, a large spatula is placed below the knee. A knife with a keen point, but with the edge only sharpened for one-third of its length, is to be used. Upon the cutting point of the knife a piece of beeswax is firmly moulded. The wax answers the purpose of a temporary probe; the blade thus guarded, is cautiously inserted beneath the loose flap of skin. When the bottom of the pouch is reached, a certain amount of resistance will be encountered; through this the knife is driven. The force cuts in twain the wax, and pushes through the integument the blade, which the spatula guides from the leg. This operation should be performed quickly; the hand should simply be carried downward, and then brought upward, when all is concluded; care, however, being taken that the withdrawal of the knife does not injure any part save those it was designed to cut.

Should the horse be nervous, it is advisable to bind-fold the animal, and order the groom to hold up the sound leg; the creature can then only rear. When thus disabled, that movement is rendered difficult, and it is proportionably slow. The operation, if properly performed, should be over before action can be prepared for; and by the knife a considerable incision is made in the bottom of the sac, through which all grit or dirt can, with the pus, readily pass.

The examination concludes with a second resort to the probe. The instrument is in surgery of great use; but, as it is commonly employed, reason may doubt whether injured life has been much benefited by its invention. It generally is raked and poked about as though the person holding it was determined, at all hazards, to ascertain the length, breadth, and every irregularity of the wound he is asked to cure; much harm is thereby done. Delicate attachments which, if not interfered with, might induce speedy reunion, are thus broken down, and the injury aggravated; while the operator thinks he ought to know all about the lesion he is to treat, and supposes that he can possibly do no harm with the instrument which the best schools order to be employed.

A good surgeon has no curiosity to gratify; all he desires to know is so much as will enable him to benefit the patient placed under his care. Therefore, never abuse the probe in cases of open synovial cavities. Imagine the distance the bones are from the surface, and, if the probe can enter a very little beyond that distance, such a fact demonstrates the cavity to be exposed. When a horse is before you with synovia running from a wound upon the knee, have the leg lightly flexed, look for the most free space, and into that insert the probe. The bones of the knee-joint are directly under the skin, and when no opposition is encountered for three-quarters of an inch, be certain the joint is exposed.

Most of the cases narrated as opened joints were simple punctures into synovial sheaths; as such, they were sufficiently serious; but not of so important a

character as is assumed for them. Synovia is placed between the ends of bones, its use being to prevent the friction which otherwise would be occasioned by the movement of one hard body upon another. Being confined in a circumscribed sac, and incapable of much compression, the liquid performs all the uses which could appertain to the most solid substance. When the fluid which, from its thick appearance and unctuous feel, was formerly termed "joint oil," has escaped, the bones grate against each other; inflammation ensues; all neighbouring parts sympathise, and the constitution suffers from intense irritation.

Something of this kind happens when a synovial sheath is punctured. The tendon comes in contact with its investing synovial membrane, but there are reasons why that circumstance is not so serious as when the lubricating fluid is released from the cavity of a joint. Tendons support no weight, and their motion is with the sick almost optional. The bones are the pillars on which the body rests, even while the frame is prostrated, a certain degree of pressure is upon them, for that reason, and also because the bone is more highly organized than cartilage, the first mentioned substance is endowed with the greater renovating energy. An open joint is consequently far more serious than a punctured sheath.

Notwithstanding the serious nature of these accidents, when wrongly treated, few injuries yield more kindly to proper measures than do open joints. However, should the ordinary treatment of caustics and bandages be adopted, the entire limb, before the expiration of a week, will be hot, hard, and tense. The health of the animal will be seriously affected by the continued irritation, and the body will rapidly become emaciated. The foot of the limb will, with evident difficulty, be held from the ground. Should not death interpose (the animal being unable to lie down, and the entire weight being cast upon the sound limb), the foot attached to the healthy member frequently becomes affected with the worse form of incurable laminitis.

Even should no such misfortune as laminitis occur, the after deformity and blemish renders the horse almost worthless. The bones sympathise in the general disease, and a large osseous deposit is engendered to mark the surgical inaptitude. When bony growth does not follow, the parts lying immediately over the knee thicken, the skin sloughs, and the integument never being restored, a full knee with a lasting blemish is the consequence. *Turf, Field and Farm.*

The Dairy.

Feeding Milch Cows.

To the Editor of THE CANADA FARMER:

Sir,—Permit me to tell my experience in feeding milch cows, as I have been a constant reader of the CANADA FARMER since the first of January, and have seen many valuable articles on that and other agricultural subjects. I keep a small dairy of twenty-six cows, and have sent my milk to the factory for the last three seasons. Last June I sowed one acre of corn in drills, eighteen inches apart, and commenced cutting and feeding daily on the last of July. When the rain came on in September, I allowed my cows grass afresh, and I omitted feeding the corn four days, and the result was the milk diminished fifty-two pounds per day. I again commenced feeding them with corn, and in four days they gave their usual quantity of milk. Their milk more than doubly paid for the corn consumed. This is the first I have ever written for the CANADA FARMER. I have derived great benefit from reading its pages. You will hear from me again.

LYMAN CALL,

East Durham, P. Q.

AMERICAN DAIRYMEN IN SWITZERLAND.—American enterprise appears to be looking to other continents for new spheres of activity. A company of Americans has located a milk-condensing establishment at Charn, by the lake of Zug, in Switzerland, intended to contribute to English consumption particularly. George H. Page, of Dixon, Illinois, is superintendent of the "Anglo-Swiss Condensed Milk Company." Milk from the Alpine region is celebrated for its richness and flavour. About 400 gallons daily is received from the peasants of the neighbourhood, and manufactured so carefully that a specimen kept twelve months, as reported by Baron Liebig, has been churned into excellent butter.

DAIRYING IN THE WEST.—In a report of a recent tour in Wisconsin and Illinois, Mr. X. A. Willard refers, among other interesting particulars, to the progress of factory cheese making in Illinois. He says:—

"One thing is certain, the west has improved in the manufacture of dairy products much more rapidly than at the east. They have the advantage of not being wedded to old notions, but start at once from that which is considered the best practice of our best dairymen, and they spare no pains to introduce improvements whenever a chance for such is offered.

It is for this reason that we think dairying will be a success at the west, wherever the lands are adapted to grazing. In the vicinity of Dunton cheese manufacturers have been secured from New York. The Misses Dwyer, of Herkimer county, are managing two factories, and are making an excellent quality of cheese. Mr. Hawks, the manager of the Dunton factory, is from Oswego county, N. Y., and is making a nice dairy. Mr. Dunton drove us over to Gen. Cameron's factory, which is located across the prairie from Dunton, and on the river. Here we found the cheese quite uniform, and of clean, sweet flavour, and so far as we tested, free from that peculiar rankness which shippers complain of in western cheese, and which they say comes from Western grasses and water. We have no doubt the system of cooling and deodorising the milk at the farm, before it is put into the cans to be carted to the factory, will be put in practice generally at the West, and should this system prevail, and New York dairymen continue to cart their milk as at present, without the cooling and deodorising process, then New York must look well to her laurels, for Western cheese will have a reputation for fine flavor which it does not now always obtain."

THE CALVES.—There is no part of the farm stock more liable to be neglected in fall than the calves which have been raised during the summer. They are often left out late in the season, without shelter, to pick at the frozen grass, and by the time cold weather sets in, are reduced in flesh and cannot be wintered without extra nursing, and even then one or more are often lost before the time for turning to grass.

Calves should enter upon cold weather in good condition and with vigorous health. Shelter, and an abundance of nutritious food, should be provided so soon as grass becomes frost-bitten and poor, and cold storms of sleet and rain begin to be frequent. They demand the finest and best hay grown on the farm, and should have in addition a little oil meal, bran or oats. Roots will be found an excellent food for calves during the winter, in addition to the oil meal or bran above mentioned. Some prefer oats, say a pint or a little more per day to each animal. We have seen calves wintered through in fine condition upon hay and oats as above, but we prefer a mixture of oil meal and bran, and if it can be had, a daily feed of turnips or carrots. Calves that are well cared for, that have warm shelter, and that get a sufficiency of nutritious food, not over fed, continue their growth during the winter, and will usually come in milk when two years old, which is a matter of considerable importance to the dairyman. In our experience in raising stock we find by far the most important period to give close attention to the animal is during its first year. Neglect during that time is almost always attended with loss. A poor runty calf, poorly wintered, cannot be expected to be in milk the next year, and at three years old is no better for the pail than the two years old that has had generous treatment and care from its birth—yet the former has cost considerably more than the latter. Many farmers make no estimate of the cost of raising stock, and hence do not properly appreciate the difference between heifers coming in milk when two and three years old. Every animal raised on the farm should be charged with every item of its expense until it begins to pay the farmer back either in milk or beef. By keeping a strict account with stock we are enabled to see at a glance whether there is gain or loss in the business of stock raising. If such accounts were more generally kept, we apprehend more attention would be given to calves in pushing them forward, so that a full and early development of the animal be secured. Some object to putting calves in stanchions, preferring to let them run loose in the stable. We have never seen any ill effect from stanchioning calves, but, on the contrary, believe there are many advantages from this mode of management.

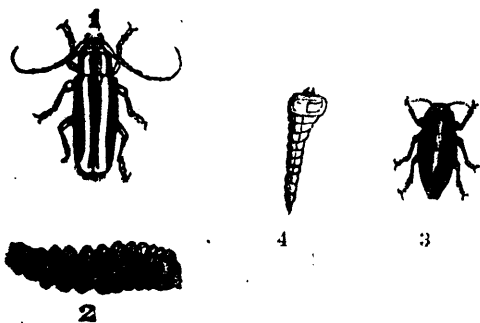
Less room is occupied when they are thus confined, and they with their stable are kept cleaner than when allowed to run loose. They are more easily fed, especially when any extra food is given, and each one gets its share and is not driven about by master or stronger animals. By giving them a run in the yard every day they get sufficient exercise, while the early breaking to the stanchion, and the handling daily, renders them more docile and more easily managed as they grow older and come in milk.—*Utica Weekly Herald.*

Entomology.

Apple-tree Borers.

In a late number of THE CANADA FARMER—that for Nov. 2, 1868—we published Mr. D. W. Beadle's Prize Essay on "The Apple and its Cultivation," in which the writer gives an excellent account of a borer that affects the apple, its natural history, and the best modes of counteracting its ravages. The insect that he describes is called the Two-striped Borer (*Saperda divittata*, Say; *candida*, Fab.) from the two chalky-white stripes that run the whole length of the body of the insect, as seen in Fig. 1. The grub that does the mischief is represented in Fig. 2. It belongs to the long-horned family of beetles (*Cerambycidae*), which includes the majority of our wood-boring insects. It is found in many of the United States, in Lower Canada, and in the Niagara District of this Province; but we have never seen it on the north side of Lake Ontario, nor has it been taken in the neighbourhood of London, Ont. This pleasant immunity, however,—which, alas! may be of no long continuance—is counterbalanced by another Borer of equally destructive habits, to which we now beg to direct the attention of our readers.

Our Borer, like the other, is the larva of a beetle, but of a totally different family; the former has very long antennæ, this one has almost none; the grub



of the former is cylindrical (Fig. 2), that of the latter is flattened, and with the fore-part of the body twice as broad as the rest (Fig. 4). It is called the Buprestis Borer (*Chrysobothris femorata*, Fab.), from the family of beetles (*Buprestidae*) to which it belongs. The parent insect is represented in Fig. 3. If the reader will bear these illustrations in mind he will have no difficulty in telling which borer it is that affects his trees, should he be so unfortunate as to be troubled with one or other of the pests, and will know what remedies to apply.

The natural history of the Buprestis Borer may be briefly told as follows:—The egg is deposited by the female beetle in the chinks and crevices of the bark some time during the early part of summer; from this the young grub soon hatches and works his way into the soft sap-wood immediately beneath; here he eats away while the hole inside becomes larger and larger, and he increases in size himself, gradually working his way upwards until he becomes pretty well grown, when he bores into the solid heart of the wood and forms a flattish burrow, corresponding to his own flat form. Some say that this borer never leaves the sap-wood to go into the harder interior, but we have before us a portion of the trunk of a young apple-tree, out of the very heart of which we have cut several of these borers, while others were eating away nearer the surface. When several attack the same tree, their burrows of course approach each other, and sometimes come so near meeting as practically to girdle the tree and cause its speedy death; in any case they very much injure its vitality and bring on decay. We know, indeed, of two young orchards where more than half the trees have been greatly injured by this insect, while some were killed outright; and we have heard of a number of others similarly affected. In the spring of the year, the grub assumes its pupa, or quiescent, state, and comes

out as a perfect beetle in the end of June or during July, when it may be found basking on the tree-trunks in the hot sunshine. It is very lively when danger threatens, and will take wing in an instant if an attempt is made to catch it. Its blackish-brown colour above so much resembles the bark of the tree, that it would easily escape the notice of ordinary observers; but beneath it is of a beautifully burnished dark copper colour, looking as if made of metal, and beneath the wing-covers it is bluish-green. The Two-striped Borer attacks the trees as a rule only near the root, though occasionally at the crotch above; the Buprestis Borer is not particular as to his locality, but attacks the whole trunk, and sometimes even the limbs; they both prefer young trees, probably because the bark is thinner and more easily penetrated by the young grub.

The presence of the grub in the tree may be detected by the discoloration of the bark, and its flattened, dried appearance. All such spots should be opened with a knife and the inmate ruthlessly butchered on the spot. In young orchards all the trees should be carefully examined two or three times a year, especially in early spring and fall, and all infected ones be promptly treated with an application of the knife. This, however, is a rather slow and troublesome process; it is much easier to keep off the insect than to kill him when he has effected a lodgement. One mode of doing this is to rub the trees over with common soap—soft-soap will do very well—early in June, just before the beetles begin to lay their eggs, and place also a lump of soap in the crotch of each tree, which will be washed down with the rain. Another mode, suggested by the Rev. R. Burnet of Hamilton, and which, we believe, is likely to prove efficacious—he has tried it himself with advantage—is to plaster over the trunk of the tree with a thick mixture of cow-dung and clay; this is said to prevent the egress of the insect, and cause it to die underneath. We should think that it would also prevent the eggs being laid on the tree, or at any rate be a hindrance to the newly hatched grub in his attempts to penetrate the bark. We have not had an opportunity of testing this method yet, but we propose doing so next season; we trust that some of our readers will also try it, and let us know the result of the experiment. It is only by repeated trials and experiments, by different people, in various localities, that reliable and satisfactory results can be obtained.

The Ravages of Insects.

THE following remarks by N. C. Meeker, from the proceedings of the American Institute Farmers' Club, New York Tribune, August 25, 1868, deserve attention:

We may say positively that destructive insects are increasing every year, and that they destroy as great an amount of food as is saved. To meet these scourges will require our best efforts. The science of Entomology, by which insects are classified and their nature studied, is becoming of national importance, and we are sure that without its help little will be done. The first step in every pursuit is analysis, by which we separate a whole into parts, upon each of which attention is to be fixed. Here progress commences. One of the first results in this study is to make distinction between insects which are useful and injurious, for unless this be done one will be as likely to destroy his friends as his enemies. At present this study is so far from being popular, that the greater part of educated men, so-called, are as ignorant as the unlettered. It is manifest that the elements of this science should be taught in our common schools, if it is to become of much use; for the transmission of learning directly from the learned few to the common people, without the intervention of a teacher, is impossible. In fitting teachers for their duties, a knowledge of this science should be included among their qualifications, as much as of arithmetic or grammar. At present, however, we have no colleges where studies of this practical nature are pursued, except incidentally; but when the agricultural universities shall be fairly established, we may expect that the need indicated will be fairly supplied.



A Strange Well.

To the Editor of THE CANADA FARMER:

SIR,—I visited the farm of Robert Henderson the other day, to witness a strange scene. On this land a well has been dug, which is some twenty-two feet deep. From the surface there is a stratum of red clay to the depth of about ten feet, and the rest is tough blue clay, with the exception of about six inches of fine sand, which is perfectly level, with a uniform depth all over the bottom, and out of the sand there is a continual stream of air rushing out in five different places on the East side of the well. Can you, or any of your subscribers, inform me of the cause?

There is no water coming into the well with the exception of some rain water. There was a depth of about eighteen inches some two weeks ago, which was taken out, and the air still kept rushing out with a noise similar to that of escaping steam. There is a depth of five feet of water in it now, which it slashes about with unceasing energy. What is strange, none of the water soaks away, and one side of the well is free from anything of the kind.

If you would answer in your next, you would oblige

WM. HENDERSON.

Blanchard, Nov. 16th, 1867.

NOTE BY ED. C. F.—The cause of the phenomena above described can only be matter of conjecture, in the absence of more complete information of geological surroundings. Air is confined in various cavities below the earth's surface, and not infrequently subject to considerable pressure. In sinking shafts or wells, an outlet may be afforded, and the imprisoned air escapes with a rush, followed sometimes by water or other fluid. In the case under consideration, the dry stratum of sand has probably a connexion with some reservoir of compressed air, or it may have a sloping course, and somewhere approaches, and perhaps is open to, the surface. This extremity of the porous layer will be the first to receive the rainfall, which, as it makes its way downwards, exerts considerable pressure on the air contained in the interstices of the sandy bed. Let alone, the water would gradually make its way downward, and the air escape by the extremity that admitted the water. But an opening having been made in a lower portion of this tube, so to speak, the pressed air finds vent there more readily than through the wet layer of sand above, and is forced out. If this be the case, the escape of air will in time cease, and water will flow into the well from the side whence air now springs. The pressure is evidently on one side only. We do not understand why surface rain water, that has entered the well by its mouth, should not sink through the sand on the side where there is no escape of air, and no pressure from behind. Perhaps it does soak away, but too slowly to have been observed. Perhaps other than surface water has entered. We should like to hear again from our correspondent, and learn the sequel of the curious and interesting case.

Reclaiming Swamp Land.

To the Editor of THE CANADA FARMER:

SIR,—I have a few acres of low land, once thickly covered with tall and handsome tamaracs, balsams, and an occasional cedar and pine. A fire recently swept over this beautiful thicket, burning the trees out by the roots and reducing all the old timber and vegetable mould to ashes. And now the question is, what is best to be done with this swamp?

The soil is stiff blue clay. There is no difficulty in drawing off the surface water by means of an open

ditch, nor will there be any hardship in making an outlet in case of underdraining. But will it pay to bring such land under cultivation? What is the value of blue clay as a soil as compared with clays of other colors? Can this land be made to yield wheat or hay profitably? If so, what previous treatment should it receive?

If you will be so good as to answer these queries in the next issue of your valuable journal, you will very much oblige

AN AMATEUR.

Nov. 17th, 1868.

NOTE BY ED. C. F.—We cannot determine from the above description what is the value of the land in question; but would recommend that it be well drained by ditching in the first place, and sown in grass. It would then, probably, yield good hay. The yield of hay would give evidence of the richness or poverty of the soil, and show whether it would be worth while to incur the expense of underdraining. It would scarcely, however, be adapted for wheat.

Second Agricultural Society of the County of Rimouski, Quebec.

To the Editor of THE CANADA FARMER:

SIR,—As this communication relates to an effort that has been made for the improvement of Agriculture in a part of the Dominion, you may deem it not unworthy of a place in the CANADA FARMER.

Owing to the very large size of this county—the farthest east but one of the Province of Quebec—it was found that only one Agricultural Society was not sufficient for the wants of the inhabitants. Accordingly, a second was formed last March, the bounds of which extend from Métis to Cape Chat, a distance of about sixty miles. The following gentlemen are the present office-bearers:—President, Rev. J. O. Perron, Ste. Felicité; Vice-President, Mr. L. N. Blais, Matane; Sec.-Treas., Mr. A. Fournier, Matane; Directors, Messrs. Alex. Grant, F. Dionne, D. F. de St. Aubin, J. A. Genereux, Ant. Poirier, P. F. Leggat, N. Richard.

Of course, as the Society is of such a tender age, much cannot reasonably be expected from it. Something, however, has been done to accomplish the end for which it is formed. Last summer, prizes were offered for the best farms and best fields of wheat, barley, oats and potatoes. Messrs. Alex. Fraser and X. Imbeau were appointed judges. In the month of August, these gentlemen discharged their duties, and the following is the result:

For cultivated farm, of not less than eighty acres—1st, L. N. Blais, \$6; 2nd, F. Dionne, \$4.

For land first sowed in 1868—1st, Chas. Truchon, twenty-four acres, \$4; 2nd, Rev. J. O. Perron, twenty acres, \$2; 3rd, Moïse Côté, twelve acres, \$1.

For wheat—1st, Oliv. Harrison, four acres, \$4; 2nd, Oct. Lepage, six acres, \$2; 3rd, Fr. Dionne, three acres, \$1.

Barley—L. N. Blais, nine acres, \$4.

Oats—1st, L. N. Blais, ten acres, \$4; 2nd, Fr. Dionne, do, \$2.

Potatoes—Fr. Dionne, — acres, \$4.

Of course the above is not much, but as the Scotch say, "bairns maun creep afore they gang." Arrangements were made for a ploughing match at Matane, in the fall, but for many reasons, into which I need not enter, it did not take place. Next year, the ploughing match is to be at Métis, thirty miles distant. It is to be hoped that the office-bearers will not be again disappointed. An exhibition is appointed to be held at Matane next year. There is to be one every year, alternately, at Matane and Métis.

It is to be hoped that the formation of this Society will prove in the highest degree beneficial to this part of Her Majesty's dominions. To use a very mild phrase, there is in it great room for improvement in agriculture. The views and practices of many of the inhabitants are far behind the age. However, by degrees they will come to see that improvements can be made in agriculture like every other art, and understand the value of agricultural societies. According as they do so the Society will be patronized, and will in turn do the more good.

T. F.

Métis, Q.

Italian Rye Grass.

To the Editor of THE CANADA FARMER:

SIR,—Can you or any of your numerous subscribers give me full information regarding the above grass, if profitable, for this country? What time should it be sown? How much would be an average crop per acre, on sandy land, of a fair tilth? How much should be sown per acre? What is the weight of the seed per bushel? Where can the seed be got, and at what price? How much better is it than Hungarian grass?

J. S. T.

Paris Road, Co. Brant.

ANS.—Italian Rye Grass, which has for some years been extensively used in England, has not hitherto, so far as we are aware, been introduced into this country, and until it has been fairly tested its suitability for Canadian agriculture can only be a matter of conjecture. We understand it is one of the seeds that Professor Buckland contemplated importing in small quantity, for the purpose of experiment. The best time for sowing would probably be the beginning of May, using from one to two bushels of seed to the acre. The crops in England, on suitable soils, are often very heavy, yielding sometimes as much as three tons to the acre; and two crops are frequently taken in one year. But it requires a naturally rich soil to make any good return, and usually demands, for profitable culture, a large amount of manure. We do not know the standard weight of the seed. It would have to be imported from England, and could most likely be procured through any regular seedsman. It hardly admits of comparison with Hungarian grass, which is an annual. As already stated, actual experiment alone can determine its value in this country.

The Canada Farmer.

TORONTO, CANADA, DECEMBER 1, 1868.

Emigration.

MR. W. FRANK LYNN, a gentleman who takes great interest in the colonies, and has done much to diffuse information about them, and especially about Canada, among the various classes in England likely to emigrate, is at present in this country, endeavouring to obtain from our Government, press, and public men, some practical co-operation in the promotion of his views. His plan is, that the Government authorities here, through the municipal institutions of the country or otherwise, should organize a system, and employ agents in Canada in collecting returns at fortnightly or monthly intervals, respecting the number and class of workmen required, the wages usually paid, and the cost of provisions and living in each principal town and district, together with any other particulars that might be useful; and that this information should be forwarded, as soon as collected, to England, when he would undertake, by means of the press and the connection he possesses amongst the working classes, to have it regularly and properly published in a way that would reach every class of agricultural or artisan workmen.

He is of opinion that the publication of actual statistics, prices current, and tables of wages, would have more effect on working men and middle-class people than any other description of information. The cost of diffusing this kind of intelligence need not be much. Mr. Lynn thinks £500 or £600 a year would suffice; and if the effect of it should be, as he believes, to induce a better and more substantial class of emigrants, the country would soon more than get its outlay back again. He argues that the great

hindrance to emigration hither is ignorance of the country, and states that there is not only great ignorance respecting Canada in England, but a large amount of strange and absurd misconception. One intelligent person remarked to him that he supposed tigers and serpents abounded about Toronto, and not a few with whom he has met objected to coming to Canada because they understood the people led a semi-savage life. It is not long since an agent of the British and Foreign Bible Society, addressing a Toronto audience, expressed his astonishment at finding the people so decently dressed; and if an educated man knew no better than to expect to find Canadians only half clad, we need not wonder if persons less well-informed should fall into similarly ludicrous mistakes. Mr. Lynn says it is exceedingly difficult to get people to believe statements respecting the colonies, and that they need to be in some way certified and backed up to gain credence. He tells us that the "Supplement to the CANADA FARMER," of which 20,000 copies were issued some four years since, for circulation in England, and which contained a vast amount of information about life in this country, was extensively regarded as an advertising puff in the interest of the Canada Company, and its testimony to a considerable extent discredited. Hence he urges the publication in English papers—not only in the leading organs of public opinion, but in respectable local journals—of facts and figures duly certified and accredited, so that they may be past dispute. If, however, there be, as it would seem, distrust and suspicion in regard to such information, and a prejudice against Canada in the minds of the people at home, it will be a matter of some difficulty to gain credence for statements in favour of this country, no matter through what channels they may be made. In this state of affairs we see the fruit of that depreciation of the colonies in general, and of Canada in particular, in which a certain class of British politicians have been prone to indulge, and perhaps, too, the influence of that want of patriotic enthusiasm with which we are ourselves to some extent chargeable. Americans at home and abroad always represent the United States as an earthly paradise, and its government as the best under the heavens. Modesty is all very well, but there are times and circumstances when it is needful to blow one's own trumpet a little. Judicious and energetic advertising helps a country as well as a business. If there are means of giving wide publicity to information about Canada in such form as would inspire confidence, by all means let it be done. An outlay of £500 or £600 a year, in doing this, would surely be money well invested, and could hardly fail to bring a profitable return in the transference of capital and population from Britain to our shores.

Our Dominion and Local Governments have this subject before them just now as one of the matters requiring attention. It is pretty manifest that our emigration agency system needs to be remodelled and made of more practical use. If we are to have agents in the old country at all, they should be practical, pushing men, acquainted with Canada, and in love with it, so as to plead its cause and advance its interests with a will. There is great danger of these foreign emigration agencies becoming mere sinecures. We have greater faith in measures of a more indirect character. Let our Government make Canada a good country to live in; let us establish a liberal free grant land system; let us pass a good homestead law; let us develop manufactures, and push on public improvements; let us be economical, thrifty, and prudent in our public expenditure, so as to keep taxation low; and no fear but population will flow to us. In these days of cheap postage, railroads, and electric telegraphs, people will soon get the news of such attractions. Only create an elysium, and multitudes will want to occupy it. "Where the carcase is, there will the eagles be gathered together."

Australian Agriculture

We are indebted to the *Mark Lane Express* for the following interesting details respecting the present state of Agriculture in the Australian colonies. From an official copy of the agricultural statistics of Victoria for 1867, it appears that although some attention is still given to gold-mining, the exports of gold averaging about £6,000,000, agriculture and sheep-farming occupy now very prominent places in the industry of the colony. The export of wool now reaches 43,000,000 pounds, or more than double what it was at the time of the gold-seeking mania in 1853. The horses in the colony have quadrupled, there are double the number of sheep, and the cattle keep steady in number and quite adequate to the wants of the increased population; the population in the colony having doubled in twelve years.

The occupied land in the colony now amounts to 7,947,455 acres. The area occupied during the last ten years amounts to 5,840,930 acres, or more than three-fourths of the whole extent of land at present under occupation. The average size of holdings is 325 acres; that of the lots usually devoted to farming pursuits, 104 acres. The average area in occupation to each individual in the colony is 11.5 acres. In the last ten years, settlement has progressed in a faster ratio than the population.

The land enclosed amounts to 6,970,106 acres; of this 1,151,228 acres were fenced-in in 1867. The average area cultivated by each holder is 21.7 acres, of which freeholders contributed 70 per cent., and non-freeholders 30 per cent. The average area cultivated by farmers is 25½ acres, and by squatters 52½ acres. Farmers cultivated thirteen per cent. of the land they occupied, and squatters one per cent. of the alienated land attached to their runs. The extent cultivated by each occupier was the greatest in the year 1861, when the average was nearly thirty-one acres; since that period the tendency has been for settlement to outstrip cultivation, so far as the number of occupiers is concerned. Comparing the land in cultivation with the population of the colony, on an average, 100 acres are cultivated to every 109 individuals. Should cultivation advance in the same ratio, in relation to the increase of population, the next returns should show a proportion of not less than an acre under tillage to each head of the population. This proportion has already been exceeded both in New South Wales and South Australia. In the former colony, according to the latest returns, with a population of 431,000, the number of acres placed in cultivation amounted to 451,000, or a fraction over an acre per head; and in South Australia, during the last season, no less than 4.37 acres were placed under tillage to each individual in the community.

The numbers of live stock returned for Victoria are as follow: Horses, 121,381; cattle, 598,968, of which 140,414 were milch cows; 9,833,139 sheep, and 74,708 pigs. In ten years there has been a net increase of 73,649 in the number of horses, of 4,791,591 in the number of sheep, and of 22,481 in the number of pigs, but a falling off of 47,645 in the number of horned cattle. There are nearly fifteen head of stock of all descriptions to each man, woman, and child in the colony, consisting of about one-fifth of a horse, one head of cattle, fourteen sheep, and one-tenth of a pig; and about 111 head to the square mile, namely, one and a-half horses, nearly seven cattle, 102 sheep, and less than one pig.

In all the Australian colonies, including Tasmania and New Zealand, there are upwards of 600,000 horses, nearly 4,000,000 cattle, 38,500,000 sheep, and nearly 400,000 pigs, or more than 43,000,000 head of stock of all descriptions distributed throughout the group. New South Wales still heads the list in thirteen and three-quarter millions; Victoria stands second, 9,628,000; Queensland third, 8,264,000; and New Zealand fourth, 5,297,000. New South Wales and Queensland are still the great grazing colonies, as they own 2,700,000 head of cattle, and Victoria has under 600,000. As a sheep-breeding colony Victoria stands in an equally good position, surpassing Queensland by nearly 2,000,000, but outstripped by the older colony New South Wales, which owns more than eleven and a-half million sheep.

Passing now to an examination of the agricultural resources and production of Victoria, we find that the most important crop cultivated is wheat, which covered 208,588 acres, and produced 4,641,205 bush. The average produce per acre was—wheat 22.3 bush.; oats 30 bushels; barley 30.2 bushels, potatoes 2.7 tons; hay 1.7 tons. Four years ago vines only covered about 2,000 acres in Victoria, less than one-half the extent of ground now devoted to that culture. The vines numbered 8,231,922, more than half of which are in bearing. The grapes gathered last year amounted to 60,659 cwt., of which 43,395 cwt. were made into wine. The cultivation of tobacco is not increasing in Victoria, the acreage having declined from 623 acres in 1864 to 243 acres in 1867.

In all the Australian colonies, including Tasmania and New Zealand, we find that close upon 2,500,000 acres are under tillage. The greatest amount of cultivation (739,714 acres,) and of lands under vines, wheat, and miscellaneous tillage is in South Australia, as is also the largest extent under hay, if New Zealand (which only returns sown grasses and not hay) be excluded. Victoria can boast of the largest extent under oats and potatoes, and New South Wales the largest under cereals, exclusive of oats (chiefly maize,) and under tobacco. The whole acreage under wheat in all the colonies is nearly 1,000,000 acres, whilst vines now cover 13,319 acres. The acreable yield of wheat, oats, and hay is highest in Victoria; New South Wales gives the highest acreable yield of maize and other cereals; the average yield of potatoes and tobacco is highest in Tasmania; and most wine per acre is made in South Australia.

Returns of the machines and implements in use upon farms and stations in Victoria, and of their value, are given: from these, it appears that 165 steam-engines, of an aggregate power equal to that of 1,239 horses are used by farmers, and twenty-two steam-engines of 142 horse-power by squatters. The total value of the plant or machines and implements possessed by farmers amounted to £804,515, whilst that in the possession of squatters is only valued at £61,182. The crops reaped and sown by machinery covered 160,649 acres, of which all but 1,100 acres were upon farms. The number of persons employed upon farms is 42,211, and upon squatting stations 9,640.

There are 114 mills for grinding and dressing grain in the colony; 106 of these are worked by steam and eight by water-power. The amount of horse-power employed is 2,952. There are 355 pairs of stones at work, and the quantity of grain operated on was 4,000,000 bushels. The flour made during the year was 85,586 tons. The approximate value of the machinery and plant of the flour mills was £176,425. There are now 86 breweries in the colony, employing 648 hands and 471 horses. Nearly 9,000,000 gallons of beer are made, and in the manufacture of which 539,000 bushels of malt, 603,289 lbs of hops, and 6,290,000 lbs. of sugar are used.

In closing this summary, it may be added that as there are stated to be officially 43½ million acres of land available for agricultural or pastoral purposes in the colony, and as not eight million are yet occupied, there is ample room for expansion of population and stock, even at the rapid rate at which they have been shown to be increasing.

The "Prairie Farmer on" Reciprocity.

SEVERAL influential interests in the United States oppose the renewal of Reciprocity. Foremost among these is the wool interest. As its mouthpiece and advocate, the *Prairie Farmer* says in a recent issue:—

"Various mercantile, shipping and fishing interests are laboring with the powers at Washington for a renewal of the Reciprocity Treaty. There is at least one branch of farm industry that stands fundamentally opposed to this Treaty. This is the wool branch. Since the passage of the present tariff granting protection to the producers of combing wools, an immense amount of capital has been invested in the long-wooled breeds of sheep, such as are universally bred in the Dominion of Canada. This business and capital would suffer immensely if Canadian wools were brought into the States free of duty. It therefore becomes the duty of wool growers, through the Associations, to act in opposition to the effort to include wools in the Reciprocity Treaty. The manufacturers who joined hands with the wool growers in securing the present tariff on wool and woollens, at the meeting of their Association on the 7th of October, gave evidence of their good faith by passing resolutions opposing the movement, on the ground that the advocacy of renewal of the Treaty for the purpose of obtaining Canadian wools free, would be a violation of the spirit of the agreement with the wool growers, upon which the present tariff on wools and woollens was founded,

and they say, 'that any advantage which might accrue to the worsted manufacturers from free introduction of combing wools under the proposed Treaty, would be more than counterbalanced by checking the impulse which it has already given to the growth of combing wools here. If the manufacturers oppose the treaty, how much more should wool growers?'"

Our contemporary also speaks in terms of high approval of the resolutions against Reciprocity lately passed by the National Wool Growers' Association. All this looks very uncalled-for and absurd, in view of the fact that upwards of nine million pounds of wool have to be imported to meet the wants of American manufacturers, and the other fact, that some seventeen million dollars' worth of woollen goods are brought from abroad to supply the wants of citizens of the United States. When demand and supply are more equally balanced, there will be more consistency in high tariffs and anti-reciprocity.

THE RURAL NEW YORKER.—This ably-conducted and popular agricultural journal is to be enlarged to sixteen five-column pages, and otherwise improved on the 1st January next, when it commences its twentieth year and volume.

EDITORIAL ACKNOWLEDGMENT.—Our contemporary, the *Country Gentleman*, in a recent issue, acknowledges the receipt of "a valuable and rare collection of hyacinth and other bulbs," from Mr. James Vick, of Rochester; half-a-bushel of "large and beautiful upland cranberries," from Mr. O. C. Cook, of South Milford, Mass., and "a box of the best honey we have seen in a long time, even better than that received from the same source last year, from Mr. Jasper Hagan, of Albany." Fortunate editor!

PROPOSED LEGISLATION.—In addition to the Free Grant Question referred to in our last issue, there are other most important measures bearing on agriculture and the rural interests of the Province at present before the Ontario Legislature. In the mining interest very material changes are proposed, especially the abolishing of all royalties and taxes on minerals. A Homestead Exemption Law is also under discussion, which has for its object the exemption of homesteads, to the value of \$1,000, from sale or execution for debt. These bills are not yet in a forward state, but by our next issue we hope to be able to report fully and favourably on these important matters. An Act will probably be passed to prevent the setting out of fires during the dry period of the year. Modifications are also contemplated in the sheep and dog law, and a few slight changes in the game law. To these and other kindred subjects that may come before Parliament we will refer again.

Agricultural Intelligence.

Trade with the United States.

EXPORTS FOR THE YEAR ENDING SEPTEMBER 30, 1868.

WE subjoin a carefully prepared statement of the principal exports to the United States from this port for the present year, as compared with 1867. Statements of the exports from Port Hope and Cobourg are also given—the three ports being selected as having Consular agencies attached, and forming what has been mapped out by our American friends as "the District of Toronto." As far as it goes, the results shown are complete. It will be observed that this year there have been no exports to the United States in several articles which were largely sent there in 1867; and this is partly accounted for, as far as we can gather, not from any falling off in the exports generally, but from the fact that the traffic in question—with a good deal not here indicated—has sought Canadian rather than American routes of transit. Other markets have probably been found this year, in the varying course of trade, and it is to be hoped that they have all been better. This year

the total exports from Toronto to the States reached about \$2,198,279, as against \$1,929,588 for the same period of 1867 - making an increase in the exports of 1868 of \$268,691. This year from Fort Hope the total value of the exports to the same quarter is set down at \$1,627,169 00, and from Cobourg, \$178,376 making the value of the total exports of the three ports foot up to \$4,303,824.

Classifying the list of exports in hand, we find it to consist of the following articles:-In grain the total shipments from the three ports reached about 2,431,529 bushels, representing a value of \$2,598,955, or within \$447,013 of the total exports.

Barley, which, up to the present, has been in most active demand at this point, and which at one time touched the very handsome figure of \$1 53 per bush. -constitutes the largest exports in the year's operations; and the figure it commanded this year, as compared with last, was such that though the quantity fell short 1,033,308 bushels, the value represented only shows a decline of \$293,425. In 1867, 2,254,463 bushels left this port for the States. This year but 1,221,155 bushels, which are valued at \$1,154,300.

Wheat, our next heaviest export, also shows a falling off in quantity and value this year. There were 498,178 bushels sent over, against \$72,151 in 1867 - showing a falling off in quantity of 373,973 bushels - representing the sum of \$609,608.

Of cattle and horses it appears there were exported about 1878, valued at \$117,096. Hogs to the number of 470 went the same road, and are set down as being worth nearly \$2,000.

As far as Toronto is concerned, this year's business shows a falling off in the lumber sent to the States of 17,841,954 feet, worth in the neighbourhood of \$173,003. The total lumber export for the three places, for which these calculations are made, reaches 96,418,107 feet, valued at \$1,307,034. The decline in this export, as above noticed, was anticipated this spring, owing to a depression in the business on the other side, and the inability of dealers to hold over stocks till a more favorable period.

The total quantity of wool sent away is set down at 233,058 lbs. for the present year, as against 440,927 in 1867. This evidences a decline in quantity of 207,869 lbs., but the difference in the valuation for the two periods is only \$1,722.

In 1867 there were exports in iron ore, rags, oats, hams, pelts, refined oil, safes and shrubbery - none of which appear to have travelled the same road this year. They represent a united value of nearly \$93,000. The safes were ten in number, and found their way to our friends in the Lower Provinces, by way of Portland we suppose. Over \$40,000 worth of the hams mentioned were sent through to England in bond.

A National Exposition of wools and woollens at New York, in 1869, is proposed.

A Maryland correspondent of the *Country Gentleman* raised 232 bushels of Harrison potatoes from seven and one-half bushels of seed.

A process has recently been patented in England by which the bran of flour, after being separated, is ground into an impalpable powder, and then again mixed with the flour. In this way all the nutritious ingredients are preserved, while the fineness of the flour is not affected.

The experiments made in Chenoa, Illinois, of drying corn by hot air, and thereby getting it to an early market, and obtaining the first prices of the season, are being repaid by a perfect success. Two dry-houses are already in operation, and another is about to be added.

The *Berlin Telegraph* states that upwards of twelve hundred bushels of potatoes, all the way from Riviere du Loup, Province of Quebec, have been sold in Berlin during the last three or four weeks, and readily commanded 70 cents a bushel.

NEW YORK STATE FAIR -The attendance at the N. Y. State Fair, the present year, was 68,000, and yet there were no race-course attractions. Think of this, all New England, and blush at the confession of your exhibition officials, that they cannot make a fair succeed without a horse-trot!

CATTLE DISEASE IN ENGLAND.-A fatal disease has broken out amongst cattle in various parts of England, and has been attributed by many persons to the animal feeding on acorns, of which there has been an extraordinary abundance, while, owing to the long drought, the usual herbage has been extremely scarce. The true cause of the disease is still, however, involved in considerable obscurity.



Apples at the Nova Scotia Provincial Exhibition.

The *Nova Scotia Journal of Agriculture* for October, which has been only lately received, contains a report of the addresses delivered at the opening and closing of the recent exhibition, and a brief report of the apples shown. The latter account is furnished by G. A. S. Crichton, Vice-President of the Fruit Growers' Association. The following is the list of the apples exhibited:-

Doz.	29 Gravensteins.	Doz.	1 Fall Pippin.
	22 Ribston Pippins		1 Red Astrachan.
	21 Baldwins		2 Gilliflower.
	15 Yellow Bello Fleur.		2 Early Bough.
	10 Rhode Island Greening.		3 Early Strawberry.
	9 Nonpareil.		3 Golden Ball.
	5 Menheim Pippin.		1 Hubbardtown Nonsuch
	8 King of the Pippins.		3 Keswick Codlin.
	1 York and Lancaster.		2 Munson's Sweet.
	15 Pomme de Nelze		3 Porter Apple.
	5 Drap d'Or.		1 Yel. Newtown Pippin.
	8 Gloria Mundi.		3 Swaar.
	19 Emperor Alexander		1 Spongo Apple.
	2 Blue Permaine.		1 Brabant Bello Fleur.
	5 Pomme Grise		1 Hugues Pippin.
	5 American Golden Russet.		1 Dressed.
	5 Spitzenberg		1 Early Calkin Pippin.
	12 Flushing do		1 Green Newtown do
	3 Broadwell.		3 20 oz. Pippin.
	12 Northern Spy		1 Wolfville Beauty
	8 Poundsweet.		1 Maiden's Blush.
	3 Sweet Russet.		1 Golden Sweet.
	6 Colvert.		1 Bishop Bourne.
	3 Canada Reinette.		1 Purple Gilliflower.
	7 King of Tomkins Co		2 Tallman Sweet.
	4 Calkins Pippin (Late).		3 Strawberry Permaine
	2 Munster Apple.		2 Dutch Codlin.
	3 Roxbury Russet.		2 Early River.
	2 Golden Pippin.		2 York Greening.

In reference to the display from Ontario, the writer says: I weighed several varieties with the following results:-

	6 Canada Gravensteins weighed	lbs. oz.	1 15 1/2
	6 N. Scotia do	do	2 15 1/2
	6 Canada Bello Fleur	do	2 13
	6 N. Scotia do	do	3 3 1/2
	12 Canada Bello Fleur	do	3 3
	12 N. Scotia do	do	6 0 1/2
	6 Gloria Mundi - called in the Canadian List - White Spanish Reinette.		2 13 1/2
	6 N. Scotia Gloria Mundi	do	6 2 1/2
	1 do do	do	1 0

-circumference, 13 3-8.

Mr. Crichton, however, admits that the Canadian apples, though beaten in point of size by Nova Scotian specimens, were, some of them especially, of very superior flavour, and instances the Gravenstein, Fameuse and Pomme Grise as being in this respect remarkably excellent. We do not know how far our Canadian apples were duly represented.

The Commissioners have resolved to issue, as soon as possible a full Report of the Exhibition, including a revised edition of the Addresses delivered and a complete and carefully corrected List of Prizes and Extra Awards, Lists of Committees, Jurors, &c. The Report will be printed so as to form a convenient permanent Record of the Exhibition.

New System of Rose Culture.

Our foreign Exchanges describe a novel method of growing roses, which is coming into fashion, being found to secure the grand object, namely, great profusion of fine blooms. Its leading points are, first, pruning out all the old wood; secondly, shortening the new wood very little; and thirdly, pegging down the branches flat to the ground. The rose is permitted to bloom only on wood of the previous year's growth, and this young wood is pruned but little. This is quite contrary to all received rules of rose culture, nevertheless, the results are said to be extraordinary. The young shoots, pegged down to

the earth, grow very vigorously, and produce abundance of roses at every eye. As fresh shoots put forth from the centre of the plant, those which have yielded flowers are cut away. While it is acknowledged that abundance of flowers can be thus obtained, we observe doubt expressed in some quarters whether as large roses can be got on this system as on the old plan of short and severe pruning. Among other advantages, it is thought the new mode will be favourable to the life of the rose tree, as close pruning is known to be rather exhaustive. The new system was first tried in England and France, two or three years ago, but has more recently been fully tested by a French florist, M. Jean Sisley, of Lyons, who has related his experiments in the *Revue Horticole*. Let our florists try the new method, and see how it answers in the New World. It may have an additional advantage here in securing to the prostrate plants a degree of winter protection, which, in our severe climate, may not come amiss.

The Resurrection Plant.

This is one of the latest curiosities in the plant line. We obtained one of Mr. Vick, of Rochester, last spring, and it then resembled a bunch four or five inches in diameter of curled-up shoots of young cedar, with a small cluster of thread-like roots depending from the bottom. Placing it in a saucer of water, the bunch unrolled in a few hours, spreading out quite flat, and presented somewhat the appearance of a heavy patch of moss. In this state it remained two or three weeks. If the supply of moisture failed for a time, the plant gave warning by assuming its regular ball-like form. At the end of that time we transplanted it to the ground, and it looked fine and green under the influence of genial showers. But the weather grew dry, and the Resurrection Plant rolled itself into a ball and rolled away before the wind, the roots not having much grasp on the soil. It lay in the sun on the ground for a month, when we gave it to a friend who placed it in a saucer of water, and lo, it spread out its arms again and showed the green color of vegetable life. An exchange thus speaks of this singular plant:-

"These plants are brought from the southern parts of Mexico. During the rainy season they flourish luxuriantly, but when the dry weather and hot sun scorch the earth, they, too, dry and curl up, and blow about at the mercy of the wind. To all appearances they are as dead as the 'brown and scere leaf,' but as soon as the rain comes again, the roots suck up the water, the leaves unfold and assume a beautiful emerald green appearance. No matter where the plant may be, on a rock, a tree, or a house-top, wherever the winds have blown it, there it rests, and being a true temperance plant, it only asks for water, and at once bursts into new life. Having purchased one of these tufts, and placed it in a soup plate filled with water, the reader will be surprised to see it gradually unfold and take on a deep green. The leaves are arranged spirally, and altogether the Resurrection Plant is the latest curiosity." -*Rural New Yorker*.

Protecting Bulbs.

THERE are many varieties of what are termed hardy bulbs, that will bloom much better than they usually do if protected in winter. A few inches of coarse litter, such as straw, hay, or corn-stalks, will answer the purpose very well; but when these are applied before the ground freezes they help to keep the frost out, consequently mice and ground moles find a very convenient harbor among the bulbs. We have paid pretty dearly for our experience in these matters, and wish that others should profit by our loss. We allow the ground to freeze two or three inches deep before applying the winter protection, and by so doing we do not furnish a retreat for vermin.

When the ground begins to freeze, field-mice look about for a warm location, and if a bed of choice bulbs offers such a place they are pretty sure to find it. It is not the freezing that usually injures half-tender bulbs, but the alternate freezing and thawing, consequently, when the ground once becomes frozen it is an object to keep it so; and there will be but little danger of the bulbs being injured.

We have found that many of the choice varieties of Hyacinths, Tulips, and Narcissus, are often injured in winter if left unprotected, therefore it is an object to cover them if it can be safely done. But where there are ground-moles or field-mice, great care must be given, or these pests will destroy as fast as one can plant. -*Whitlock's Horticultural Recorder*.

Propagating Grape Cuttings.

I make cuttings in the fall of perfectly ripened wood. Bury them six inches deep in any dry ground. In the spring, after the frost is out, spade a trench or trenches two feet wide, and six inches deep; cover the bottom with any cheap or refuse boards. Set up at each side a six inch board, and spread on the bottom some old hay or straw, half or two-thirds rotten, about one inch thick when packed, and make it very wet.

Fill the box with rich earth. Now, with the hand, open across one end a V shaped trench down to the old straw. Press the cuttings against the side of this trench, about two inches apart, with the upper bud at the surface of the ground. With the hand, take the dirt from the front side of this little trench and press it against the cuttings, leaving a similar trench, which fill with cuttings, and continue until the bed is filled. Then mulch with loose hay or straw two or three inches deep, and with a spout or rose sprinkler make the bed pretty moist.

Now the theory is this: the rotten straw in the bottom retains moisture. The boards prevent the surrounding earth from absorbing that moisture; the mulching prevents the moisture from evaporating, and therefore the cuttings remain moist.

My experience is this—95 per cent. of all my grape cuttings treated as above have grown.

There is another item or two in this process worthy of notice: when the plants are to be lifted for the vinery or for sale, first lift out the side boards, then with a shovel or fork, the plants are taken out with roots entire and uninjured, and also that they may be easily watered, and to some purpose in the dry time.—*Exchange.*

Chinese Primroses.

THE double-flowered varieties of the Chinese Primrose form a group of considerable extent, as well as one of great beauty and interest. The old double rose-coloured and double white varieties of former days, attractive and useful as they were, are far surpassed by more modern productions. The law of progress has worked out the most cheering results: swiftly and certainly have higher forms come forth from the workshop of Nature to gladden the eyes of the patient worker in this direction. A few flowers, that represent the latest form of the fine varieties, produced by Messrs. Windebank & Kingsbury, of Southampton, were exposed at a recent meeting of the Floral Committee, and were especially remarkable as containing some very fine flaked varieties of considerable beauty. Singular to say, these fine double kinds are all raised from the seed obtained from single flowers. The double blooms do not produce seed as a rule; and even if they did yield seed, and it were to germinate, the plants so raised would simply produce single flowers. This is a curious fact, but Messrs. Windebank & Kingsbury, as well as others, have abundantly proved that it is so. Semi-double flowers will produce seed, but it is necessary that they should be fertilised with the pollen from the single blooms. They rarely, however, if ever, produce really double flowers when so fertilised, and the number of semi-double flowers are always in a minority—the remainder, and consequently larger part, proving single.

To obtain double varieties the raiser fertilises certain fine and striking single flowers with the pollen of other equally fine single blooms, and the desired result is obtained. This is Messrs. Windebank & Kingsbury's *modus operandi*, the exact details and mode of accomplishment are a professional secret they keep to themselves. That they have hit upon some method of fertilisation by which the production of double flowers is rendered certain is evident; and further than this, they at the same time secure a strong and vigorous constitution for the double kinds. Probably the act of fertilising, say a fine red flower, with the pollen of another flower of the same hue, equally fine in character, is the most likely cause of the production of double kinds of that same hue of color; and a similar process would be attended with a like result, if this hypothesis be a correct one, in the case of flowers of other hues of color.—*Gardiners' Chronicle.*

A new grape, called the Golden Champion, is attracting much attention in Great Britain. It has been originated at Dalkeith, Scotland. In constitution it is said to be equal to the Black Hamburg, and it sets freely under similar treatment; ripens earlier, and will keep in condition when ripe, as long as that favourite variety. The bunches are large and well shouldered; berries larger than any grape known. The flavor is peculiarly rich.

The apple crop in the valley of the Connecticut is now gathering, and proves much larger than anticipated. In Hampshire county the first quality is selling at 50c. a bushel in the orchards. In some of the valley towns the price is from \$2 to \$3 a barrel.

PLUGHING ORCHARDS.—The following experiment by Mr. H. Dayton, of Alden, Erie County, N.Y., is better than a column of theorizing. His orchard of 2½ acres, which had produced very little fruit for a number of years, and most of that wormy, was carefully ploughed less than two inches deep late last fall, and harrowed and cultivated two or three times in the early part of the present season. The result is, he has picked this fall over 450 barrels of fine smooth apples, bringing in about \$1,600. The soil was a sandy gravel, and had been in grass about ten years.

NEW DWARF ARBOR VITAE.—Mr. A. G. Burgess, of East New York, recently favoured us with the sight of a specimen of his new Dwarf Arbor Vitae, which he has named Commodore Nutt. It is very dwarf, growing only four to six inches, and is very bushy, branching out close to and even below the ground, rooting at the base of the stems like box. It is perfectly hardy, and so dwarf and compact that it will undoubtedly become one of the most valuable plants for edging, taking the place of box, which is always more or less injured in our climate. We have no doubt it will prove to be a plant greatly wanted. It has only the long linear leaves of the Dwarf Arbor Vitae, more like the Retinospora, which gives it the appearance of some species of heath.—*Novy's Mag. of Hort.*

ROBBING GARDENS.—Not very long ago, the writer was told by an American gentleman, that, residing in the suburbs of a Western city, he had a garden which had cost him years of care and thought, and a great deal of money. The result was a rich reward in choice varieties of fruit and vegetables; but with the growth of the population round him, the robberies of his garden became so frequent as to convert what should have been the harmless and useful pleasure of his old age into a source of the most irritating annoyance. He had therefore to give his wife the option of remaining there where they were and cutting down all the fruit trees, or of selling the place and removing into town. Now against such lawless constraints as that put upon the most innocent, and even useful gratification of taste—upon a man's very mode of life indeed—it would almost seem "one might justly defend himself, no matter at what risk to the wrong-doers, who, if they do not like the reception prepared for them, can easily and commodiously stay away. So largely injurious is this kind of theft, that we remember Mr. Greely in one of his essays on apple growing, while urging the planting of apple trees, confessed that one great reason of the diminished number of orchards in the New England States, was the frequent and wholesale spoliation which the proprietors had to suffer, so that really an industry of considerable importance was suppressed by sheer dishonesty.—*Montreal Herald.*

TWELVE THOUSAND ACRES OF ROSES.—Mr. Blunt, the British Vice-Consul at Adrianople, in his report to the foreign office this year, gives an account of the rose fields of Adrianople, extending over twelve or fourteen thousand acres, supplying the most important source of wealth in that district. The season for picking the roses is from the latter part of April to the early part of June; and at sunrise the plains look like a vast garden full of life and fragrance, with hundreds of Bulgarian boys and girls gathering the flowers into baskets and sacks, the air impregnated with the delicious scent, and the scene enlivened by songs, dances, and music. It is estimated that the rose districts of Adrianople produced in the season of 1866 about seven hundred thousand miscals of otto of roses (the miscal being one and a half drachm), the price averaging a little more than three shillings sterling per miscal. If the spring is cool, and there are copious falls of dew and occasional showers, the crops prosper, and an abundant yield of oil is secured. The season in 1866 was so favourable that eight okes of petals (less than twenty-three pounds), and in some cases seven okes, yielded a miscal of oil. If the weather is very hot and dry, it takes double that quantity of petals. The culture of the rose does not entail much trouble and expense. The oil is extracted from the petals by the ordinary process of distillation.

Poultry Yard.

Dark Brahmapostras.

To the Editor of THE CANADA FARMER:

SIR,—In the CANADA FARMER of Nov. 15, I perceive a letter signed H. M. Thomas, in which mention is made of a pair of Brahmapostra fowls, imported by Mrs. Varley, and of which an illustration appeared in your paper, Vol. 5, No. 1. There is also an advertisement from the same person, offering for sale three pairs dark chickens from the best dark Brahmapostras imported by Mrs. Varley, Toronto. In reply to both letter and advertisement, I beg to state that the only chickens from those fowls were bred by us, and are in our possession. The history of the pair is simple enough, and is as follows:—

In April last, the hen being engaged in maternal duties, we mated the cock with an inferior hen of the same breed, for exhibition. They were purchased at what we supposed would have been a prohibitory price, and the cock eventually died on Dominion Day. The original hen we still have, and the offspring (which Mr. Thomas vainly imagines he has got for sale) are good representatives of their illustrious parents, some of the cockerels hatched in May weighing over nine pounds, and are magnificently feathered. It will afford us great pleasure to show our fowls to any who are lovers of poultry. We have also a trio from Mr. Boyle, of Wicklow, whose dark Brahmapostras won eight silver cups, besides many first prizes last year. These, with a cockerel and three pullets, from Mr. Singleton, of Leicestershire, a pair from Mr. Stephens, of Montreal, bred from his Wicklow birds, and a trio of Houdans, are our importations of this year.

In writing this letter, I do not wish by any means to detract from the merit of Mr. Thomas' birds; they may be first-rate, for all I know; but I must correct the statement that they are from "the first dark Brahmapostras imported by Mrs. Varley," as the only progeny of that pair are still in our own possession.

W. VARLEY,
V. S., 1st class, 13th Hussars.

Nov. 19th, 1868.

NOTE BY ED. C. F.—We are authorised by Mr. Thomas to state that the advertisement referred to should have read "first price dark Brahmapostras imported," &c., instead of "first dark Brahmapostras imported." The omission of the word was an inadvertence which he did not discover till he saw the advertisement in print.

Barn-Door Fowl.

THE name "barn-door fowl" suggests in itself the mode in which a farmer expects his poultry to pick up a living—literally by eating the grain dropped from the threshing and various other farming operations, and the seeds and insects procured by scratching on the dung-hill, which, besides feeding, causes them to become public benefactors; for the very seeds they eat would, if returned to the land, propagate a rank crop of weeds.

The question now arises, what cross or crosses of pure-bred fowls will produce at once the largest, best-flavored, and healthiest chickens? The one I strongly recommend is that between the Game cock (to be chosen rather for its size and abundant plumage than for its warlike proclivities) and the Gray Dorking hen. It is generally admitted that the Game bird is good for the table; it is also a good sitter and an excellent mother, but it lacks size. This quality the Dorking gives, and the progeny of the two grow to great weight, frequently quite as large as the pure-bred Dorking itself. They lay and sit well, and the mixture of the Game blood gives a better flavor to the chickens. A further cross in the following year will be advantageously made with the Brahmapostra fowl, and the third year it will be found wise to turn a few young Game cocks into the farm-yard, so that, by continually introducing fresh blood, is avoided that most pernicious habit of breeding in-

and-in, to which I have previously alluded. There are many crosses from which good fowls may be obtained, but I do not think any equal to that I have described, viz: between the Game, the Gray Dorking and the Brahma Pootra.

Although for the purpose of obtaining eggs at a season when they are most expensive, it is a wise plan to save each year several pullets for laying, still the eggs to be placed under the sitting hen should be those laid by two-year-old birds, as they will be found not only more certain to contain a chicken, but the chicken will be stronger than any produced from the egg of a pullet. The number of eggs to be placed under a hen varies according to the size of the bird and the season of the year. My impression is, that too many are generally set, and the consequence becomes manifest in the weakness of the chickens. In no case should there be more than thirteen eggs, however large the bird, and in most cases ten or eleven are quite sufficient; indeed, in very cold weather, nine eggs are enough for the largest bird to cover. The good effect of setting comparatively few eggs is observed in the strength exhibited by the chickens in escaping from the shell, and the fact that they are all hatched at the same time.—*S. M. Saunders, in Country Gentleman.*

The Dutchman's Hen, or Female Perversity.

"If she will, she will—you may depend on't;
And if she won't, she won't—and there's an end on't."

Once with an honest Dutchman walking,
About his troubles he was talking—
The most of which seemed to arise
From friends' and wife's perversities
When he took breath, his pipe to fill,
I ventured to suggest, that will
Was oft the cause of human ill;
That life was full of self-denials,
And every man had his own trials.
" 'Tis not the will," he quick replied,
" But it's the won't by which I'm tried.
When people will, I'm always glad;
'Tis only when they won't I'm mad:
Contrary folks, like mine old hen,
Who laid a dozen eggs, and then,
Instead of sitting down to hatch,
Runs off into mine garden patch!
I goes and catches her and brings her,
And back on to her nest I flings her;
And then I snaps her on the head,
And tells her: 'Sit there, you old jade!'"
But sit she won't, for all I say,
She's up again and runs away.
Then I was mad, as mad as fire,
But once gain I thought I'd try her,
So after her I soon makes chase,
And brings her back to the old place,
And then I snaps her a great deal,
And does my best to make her feel
That she must do as she was bid;
But not a bit of it she did.
She was the most contrariest bird
Of which I ever saw or heard.
Before I'd turn my back again,
Was running off, that cursed hen.
Thinks I, I'm now a 'used up' man.
I must adopt some other plan.
I'll fix her now, for if I don't,
My will is conquered by her won't!
So then I goes and gets some blocks,
And with them makes a little box;
And takes some straw, the very best,
And makes the nicest kind of nest;
Then in the nest the eggs I place,
And feel a smile upon my face
As I thinks now at last I've got her.
When in the little box I've sot her;
For to this little box I did
Consider I must have a lid,
So that she couldn't get away;
But in it, till she hatched must stay.
And then again, once more I chased her,
And caught, and in the box I placed her.
Again I snaps her on the head,
Until I fear she might be dead;
And then, when I had made her sit down,
Immediately I claps the lid on.
And now, thinks I, I've got her fast,
She'll have to do her work at last.
No longer shall I stand the brunt
Of this old hen's confounded won't!
So I goes in and tells mine folks,
And then I takes mine pipe and smokes,
And walks about and feels so good
That 'wouldn't' yields at length to 'would,
And as so oft I'd snapped this hen,
I takes some 'schnapps' myself, and then
I thought I'd see how the old creature
Was getting on where I had set her;
The lid the box so nicely fits on
I gently raised—dunder and blitzen!
(Give me mores chnapps, and fill the cup!)
There she was sitting—standing up!"

—*Knickerbocker Magazine.*

During the late poultry exhibition in Chicago, sales were made of fowls to the amount of nearly or quite \$1,000. Few fowls were sold at less than five dollars each, and a number of trios of chickens were sold at twenty-five dollars.

The Apiary.

Montreal Apicultural Society.

A Society has been formed in Montreal with the above name—the officers are Mr. G. Lomer, Montreal, President; Dr. Webber, Richmond, Q., and Mr. J. Valiquet, St. Hilaire, Q., Vice-Presidents; Mr. S. J. Lyman, Montreal, Secretary.

The objects of the association are to promote attention to bee-keeping. With this view they will hold exhibitions in connection with the horticultural society, at which prizes will be offered for the best constructed hives, wax, and all preparations of wax, honey and preparations of honey, essays on bee-keeping, &c. Meetings will be held for discussion of subjects connected with bees.

WINTERING BEES.

This was the subject of discussion at the first quarterly meeting of the Apicultural Association, held in the room of the Horticultural Society, Mechanics' Hall, on the evening of the 5th November. Mr. Valiquet, of St. Hilaire, V. P., in the chair, and Mr. S. J. Lyman, Secretary. The conversation was carried on by such experienced bee-keepers as Mr. Valiquet, Rev. Mr. Kabler, German minister, of Montreal, and Mr. Higgins, of Cote St. Paul. All agreed that wintering bees was a very important and difficult part of apiculture, and that it was only strong swarms that had any probability of wintering well; indeed that success in bee-keeping in all its departments was dependent on strong stocks, and that bee-keepers paid special attention to this point. Far better have one strong hive (i. e., full of bees) than two weak ones.

For wintering a large number of hives, Mr. Higgins had made a bee-house, with double walls and charcoal between them; but the heat of so many hives together, notwithstanding good means of ventilation, was found to be so great in March, that the bees were all in commotion, and he had to put out the hives nearly a month earlier than he intended, but he did not find that they suffered much by the exposure.

Mr. Valiquet had found the following plan answer well:—He dug a ditch in dry ground, about two feet deep and three feet wide at the top, and as long as the number of hives required. Across this ditch he laid pieces of scantling, and on these he laid two ten-inch boards lengthwise, on which he placed his hives close to each other. Each hive projected a little over the board on each side, and he also opened the super holes for ventilation. He then covered them with boards, in the form of a roof, with chimneys every ten feet, and covered those boards with straw, banking the whole up with the earth taken out of the ditch. The bees had wintered as well, or he thought better in this way than in a cellar, and he had not been troubled by rats or mice, but it was thought that in some places the depredations of these vermin would be a great objection to this method.

Rev. Mr. Kabler thought that a cellar was the best place for wintering bees, and that they should be placed on tables or suspended to the wall, to prevent rats from getting at them. A dark closet would probably do equally well. It had been thought the cellar must be dry, but he believed that a damp cellar or root-house was equally good, though anything putrid or offensive would be injurious. It was, also, generally thought that the temperature should be near the freezing point, but the President of the Society, Mr. Lomer, who could not be at the meeting on account of indisposition, had wintered bees in a part of his cellar that was quite warm, on account of proximity to the furnace which heated his house, and they came out in spring in fine health. It was also generally thought that ventilation was necessary to bees in winter, but in Germany they were shut up close, and here, he believed, they might be treated in the same way. The great thing to avoid in wintering bees was light. The least streak of light would set them in motion, and they would not only consume more honey, but some would escape, if they could, and all that escaped in winter would be lost. If bees were kept cold they had to consume honey to generate heat, which was saved when they were kept comfortably warm. A hive might be safely wintered

out-doors with a box or covering of straw over it, but it would require thirty pounds of honey; whereas, in a cellar that was not too cold, ten pounds would suffice. The door of the hive should be closed with wire gauze, and the bees should be disturbed as little as possible.

Mr. Higgins said when the confinement was prolonged there was great danger of the comb being destroyed by the excrements of the bees, and therefore the hives should be allowed to stand out in this climate until severe frost came in December, and be placed out again about the end of March.

A FINE YIELD OF HONEY.—Silas Timmerman, Clockville, N. Y., writes the *Rural New Yorker* that N. N. Belsinger, of that place, received this season from thirty-six stocks of bees thirty-four new swarms and three thousand one hundred and fifty pounds of cap honey. The glass caps were five by six inches. The honey consisted of two thousand eight hundred and fifty pounds of clover, and three hundred of buckwheat. This is Mr. B.'s third season in the bee business, and his stocks are now nearly all Italian.

GOOD YIELD OF HONEY.—At the recent autumn competition of the Inverness (N. B.) Farmer Society, premiums were offered for the best and second best samples of honey, in tops and hives. Only one sample was shown, but the quality was fine and well worthy of a prize. The honey was taken from a hive swarmed in June last, and weighed as follows:—1st top, 11 lbs.; 2nd top, 7 lbs.; eke, 11 lbs.; total, 29 lbs. The hive is left for a stock; and has of honey 35 lbs., giving a produce of 64 lbs. to the first swarm. The same stock cast a second swarm later in June, and in September the bees were removed from the hive, and put in with the first swarm kept for a stock. The hive contained 40 lbs. of honey, the produce for the season of one stock being therefore 104 lbs. No bees were killed; and the management was in accordance with an essay on bees published by Provost Mackenzie, of Eileanach.

Poetry.

A River Lyric.

Under my window, day by day,
The beautiful river rolls away:
Rolls from far off woods of pine
Down to the glittering bay;
By frowning crag and fragrant vine,
Onward still to the foaming brine,
To the ocean's kingly sway.

Many a league in rippling glee
The young brook dances; bird and bee
And flowers that lean from the shadowy grass
Hark to its minstrelsy;
And cloud and star, as above they pass,
In its crystal bosom, as in a glass,
Their radiant beauty see.

But the brook hath heard a legend rare,
The winds have warbled it in the air,
Many an echoed voice hath told
Of a world more strangely fair,
Of a world of waters vast and old
Oh, to reach those depths of pearl and gold,
Well may the brooklet dare!

Now swells the current, deep and wide,
O'er rock and chasm its strength is tried,
Till in broader channels, smooth and free,
The waves majestic glide;
And on they roll right royally,
Till they feel the heart-throb of the sea,
The ebbing and flowing tide.

Beautiful river, roll away!
Thy seaward current no charm can stay.
And thou, too, hasten, O river of life!
Through shadows gathering grey;
Flow from meadows with beauty rife,
Down through channels of storm and strife,
To shores of endless day.

Blythe and gay in the early dawn
Life dances forth to meet the morn,
But fast, fast fade the dew and the balm
Of youth's enchantment born:
In this fuller tide, in this deeper calm,
Let me not utter one mournful psalm
Over the brightness gone.

For as day by day I look on thee,
Beautiful river, flowing free,
I feel the swifter rush of the stream
Which onward rolls with me.
And I gather, at times, thro' mist and dream,
An echoed murmur, a breath, a gleam
Of the everlasting sea!

[*Mark Lane Express.*]

The Household.

Keeping Out the Cold.

To the Editor of THE CANADA FARMER.

The house we live in is very cold caused chiefly I think by its standing on black ice a foot above the ground.

For the last three years I have been trying to persuade my father to bank it up but he argues "that it is impossible for any cold to come up through a double floor," although water freezes if spilled on the floor even at this season of the year.

My father is a constant reader of your journal, and thinks whatever you advise is about right. Now, Sir, I have taken the liberty of thus trespassing, hoping that you will persuade father to bank up the house and keep us all from freezing this coming winter.

RURAL DISTRICT.

NOTE BY ED. C. F.—It will afford us great pleasure if any word of ours should make one household warm through the coming winter, and the point referred to by our correspondent is one about which we have no doubt. There are more reasons than we have space to give, why, under the circumstances mentioned, the house should be cold. In the first place, the exposed floor is an additional outer wall, always chilled, and keeping the interior cold. Again it cannot or is not likely to be so tight that air will not come through, and of course the warmth of stoves, &c., causing heated air to ascend and escape by flues or other ventilators, will bring a rush of cold air from beneath. A little practical experience may be still more convincing than any theory or philosophy and we happen to know from personal trial the difference made in a house by having the space under the floor open, and closing it in. Our first winter in the climate of North America taught us many useful lessons, and this among the rest. We entered a new house just as winter set in; the dwelling was far from complete, and, among other imperfections, was not walled or banked up to the level of the floor. We shall never forget the experience of that season. Water spilled on the floor froze and remained solid for days together; if the table was washed even with warm water, the surface was instantly coated with a thin sheet of ice. The windows were imperviously crusted with concealed vapour presenting in sunlight, most beautiful frost pictures, which, however, we would gladly have exchanged for a little more warmth. In short, the freaks of Jack Frost were so extraordinary and novel as to be really entertaining. But we tired of them, and before next winter shut him out effectually by covering in the basement of the house. The difference must be tried to be realized. We trust our friend, the writer of the above, will have the pleasure of learning the difference this winter.

Desolation Farm-yard.

I never passed Mr. Parish's old place, when a child, without feeling depressed and gloomy. There were not two rods of fence left standing about the house; the old door-steps were broken in, the doors looked as if the first gust of wind would finish them off, a few lank pigs roamed about the front door, and I have an impression that a sorrowful-faced cow was "staked out" about the premises somewhere. We used to call the place "Desolation Farm-yard," and it well merited its name. The people were not drunkards who owned it; they were only "do-less." The poor wife and mother had little health and I suppose such a shiftless husband had caused her to lose all heart and spirit. Indeed, I think they hardly realized the true condition of things—the changes in the once respectable place had come on so gradually.

I think Solomon must have had such a place in his mind when he penned the lines, "By much slothfulness the building decayeth, and through idleness of the hands the house droppeth through." This was exactly the case in "Desolation Farm-yard." A few handfuls of nails every year, a few days' work with

the paint brush and the white-wash bucket, would have kept the place in decent repair, would have helped the family to maintain a respectable place among their neighbors, and would have prevented the children from growing up such wild little Arabs. Children reared in such a home never can maintain a decent self-respect, nor are they likely to be respected by others. No one would think of inviting the daughters out to a picnic or a sleighing party, unless some benevolent person did so out of charity. It would require a pretty brave young man to drive up to "that old house" and wait upon Miss Susan into the carriage.

So, too, young Peter Parish would be sure to "get the mitten" if he proposed to see a neighbor's daughter home from singing school. She could not stand the jests of her companions about "that old house," even if she had thought well enough of Peter. The shadow of Desolation Farm-yard would follow them all their lives, unless they wandered off to distant parts where it was never heard of. Even then the mould of its crumbling walls would cling to their hearts and characters forever.

It is a burning wrong to a child to give it such a home in its early years. An air of thrift and tidiness can go along with very deep poverty, and where it is found there is ever a claim to respectability which will not fail to be recognized. As a poor woman once said, "However poor persons may be, they can almost always afford to buy a peck of lime. A peck of lime, judiciously applied as white-wash, can work wonders on the raggedest home.—*Can. Country Gentleman.*"

Economical Vinegar.

In a new country, where the fruit is scarce, it becomes a matter of no small importance that all should be made the most of. We all like good, pure vinegar, and can be sure of it only when it is manufactured from apples. In the fall of the year, those who have apples are paring and drying them for winter use, which is a very commendable thing to do; and a more commendable thing still, is to save the parings and cores for vinegar, and the way to do it is this:—

When you have quite a quantity, put them in a boiler with water enough to cover them, and boil, or rather soak them, several hours. Then strain the juice by pouring it through a clean basket; pour into a cask where there has been vinegar, and leave it to make itself. If you have no such cask, add half a pint of molasses to each gallon of juice, put in a bit of brown paper, and set it where it will warm. A piece of "mother," or vinegar plant, added, will make the process more rapid.—*Western Rural.*

Steaming Potatoes.

THE secret of "steaming" potatoes is very little understood, and rarely carried into full effect, although it is indispensable to the nutritious development of the vegetable. The whole mystery consists in suffering the steam to escape, and at the same time keeping the potatoes hot.

When the cook throws off the water, under the jurisdiction of the cookery-book, what is she to do next? The steam rushes out, and she places the vessel opposite the fire; but, fearful that the potatoes may cool in the meanwhile, she puts on the cover. Thus she undoes one process by the other; for the steam no sooner escapes from the potatoes, than by being confined by the lid, it condenses rapidly, and falls back in water upon the vegetables.

And thus, through the ignorance and obstinacy of our cooks, we are perpetually served with what are familiarly called wet potatoes—a sort of vague excuse which helps to throw the fault against the season, or the gardener, or anything, or anybody, rather than the real culprit. The Irish peasant woman, wholly ignorant of science, but with instinctive sagacity, gets rid of the difficulty by the simplest process imaginable.

Placing the vessel, without the cover, in a slanting direction opposite the fire, so as to hasten the process of steaming by the external heat, she throws a napkin over the potatoes, which receives and retains so much of the steam as does not make its escape, while it performs the equally essential office of preserving the heat of the vegetable below.

When potatoes are boiled—the usual mode of dressing in Ireland—it should be recollected that they are deprived of their nutritious qualities by over-boiling. The peasantry are well aware of this, and say that they are "strongest" when the "bone" is left in them, that is, hard boiled. In this condition they require the powerful digestion of the labourer.—*Western Rural.*

Worms in Milk.

WE (*Glow-worm*) have received the following note from a scientific correspondent relating to the finding of worms in milk. A lady, in an agony of fear, took to a Brighton chemist a specimen of milk to be examined, declaring that worms, active and red, were to be found in it, and, having used it at the breakfast table, was much disgusted at the discovery. Examination resulted in obtaining from the bulk of the supply several lively specimens of the larva of the common gnat. The dairyman had drawn his supply of water from a tank that, open to air, admitted the insect!—and hence the result.

Why is wheat like a baby? Because it is first cradled, then threshed, and then becomes the flour of the family.

To clean cider barrels, the *Scientific American* says, put lime water and a common trace chain into the barrel through the bung-hole, first tying a strong twine to the chain to draw it out with. Shake the barrel about until the chain wears off the mould or pomace, then rinse well with water.

CIDER VINEGAR.—S. J. Woodman, of Chicago, Ill., writes to the New York Farmer's Club, that a barrel or a cask of new sweet cider, buried so as to be well covered with fresh earth, will turn to sharp, clear, delicious vinegar, in three or four weeks, as good as need be.

BOLOGNA SAUSAGES.—In compliance with the request of a correspondent we furnish a receipt for German or Bologna Sausages:—Mix 10 lbs. of Beef and 2½ lbs. or 3 lbs. of fresh fat Pork, chopped fine, 1 ounce of mace, and 1 ounce of cloves. Stuff the whole into calico bags; leave them a day or two, and then put them in a brine barrel for ten days; then smoke them for a few days. Allspice, thyme, and pepper may be added if agreeable.

HOW TO CLEAN RIBBONS.—Wet the ribbon in alcohol and fasten one end of it to something firm; the other in your hand, keeping the ribbon out straight and smooth, rub it with a piece of castile soap until it looks decidedly soapy; then rub hard with a sponge, or, if much soiled, with the back of a knife, keeping the ribbon dripping wet with alcohol. When you have exhausted your patience, and sink it must be clean, rinse thoroughly in clean water, fold between cloths and rub it with a hot iron. Don't wring the ribbon; if you do, you will get creases in it that you cannot smooth out.—*Maryland Farmer.*

NOVEL RAT TRAP.—Place within the reach of rats some coarse oatmeal, mixed to the consistence of thick gruel, in a tub about two feet in depth—the oatmeal to be about two inches in depth. The rat ventures to eat his prepared repast, and then endeavours to make his escape, but to his great surprise he finds his feet fettered and clogged by his newly-found treasure, and is therefore incapacitated from giving the necessary leap. His fate is sealed. He shrieks to bring his friends and relatives to the rescue, who share the same fate. This remedy is simple.—*Mark Lane Express.*

Miscellaneous.

Teaching Agriculture as a Profession.

WE translate the following judicious remarks from the *Journal de l'Instruction Publique*:—

"We have applauded heartily the foundation of various schools of commerce and agriculture which flourish under our eyes, and we rejoice at their continued success. We have too many professional men, too many young men of talent, led astray by the vanity of their relatives, who wish, at any price, to see an advocate, a doctor, or a notary spring from the bosom of the family. It is necessary to endeavour to remedy this evil inherent in the human heart; and we cannot attain that end more surely than in honoring, by raising on the pedestal of a good education, the position of the farmer.

"Agriculture, like Law and Medicine, has become for us a science. The soil must be studied under all its forms, in all its elements. It will be turned and re-turned hereafter, by hands as intelligent as diligent, like the leaves of a good book.

"Everyone feels that the time is past when the soil poured into our heaped-up granaries the exuberance of its riches; on the contrary, it is necessary to do violence to it in order to extract a miserable subsistence. The days are far removed,—very far, alas!

—when they spread the generous seed on the ashes, yet warm, of the giants of the forest—when the crops were so luxuriant as to conceal under the undulations of their golden ears the fences and the blackened stumps of the grand old pines, which formerly spread their shade over the place occupied by the rich harvest—where raspberries, cherries, or wild pear trees showed themselves here and there, with their fruits or their red plumes waving amid the white ears of grain. Antiquity has thus represented Ceres, crowning herself with the flowers of the forest.

"This abundance may be re-created, but not as formerly, by the spontaneous production of the soil, but by the violence which will be done to it—by a profound study of its resources, and by rational culture. Let the pupils run, then, to those invaluable schools, where they will acquire a science more precious than a patrimony—the science of preserving, improving, and fertilizing the exhausted womb of the country."

Farming on Shares.

We are afraid that the old negro's experience, as given in the following paragraph, from the Cincinnati Gazette, is too general among the Southern blacks.]

An old negro thus relates his experience in farming on shares, which does not seem to have been altogether successful: "Yousee, mas'r, I s'ede workenest cullud pussen you eber did see. I goes out early in de morning and nebar comes hum till plum night. Den Mary, my wife, she work all de day and night and a'most keep de child'ren, so I lay up all my money. After I was sot free I speculate and make lots of money, put um by in de old woman's stocking and hide him in de logs. Ole mas'r he keep a ding-dongin' an' a ding-dongin' at me to come up and farm fo' him; and de ole 'oman, when mas'r speak ob de child'ren and ole missus, bust out a crying and say she was a goin' an' show; so I specs I'd better go too. An' ole master and I went down to town, and a lawyer made a contract and read him all ober, an' he sound all right, an' I put my sign on him. Next day I move up an' gin de work. I hire all de han's and massa board 'em. Sometimes it rain, and sometimes de han's be sick; but it goes on all right until de money gum out ob de stockin'."

When the ole 'oman say de money was out ob de stockin' I tole her to fotch him up; and shu as you lib it was all gone. Den de ole 'oman cry an' say we break up; but I tell her de crop was fine, and when we gedder um and sell him, we have more money den afore. When I tole ole mas'r de money was out, he say, 'Dat's all right, Sam. I gum you lots.' Den I as: 'd de ole 'oman laff at what a fool she be fo' crying ober de money in de stockin'?' After de crop be gedder, massa an' I settle; and, shu as you born I owe massa two hundred dollars. Mas'r say it all right and gum me de statement on a paper. Den I go down to town, an' take along de contract, and de Bureau man read de statement, an' ole massa charge me fo' de wet wedder, an' de sick han's, an' de board; and dat make more dan de work an' my money. I tole de Bureau dat was not de bargain; but he read de contract, and, afore God, dat contract change since de lawyer read him. Mas'r say I must work next year fo' make up what I owe him, an' I come down heah to see what I do about um. Tell you, it's mighty hard, mas'r, to lose all de money in de stockin', work hard all year, and den be in debt.—De regulationers come roun' one night, tie me up to a tree an' whip me most to death, to make me told whar de money dey speer I hab, but I tole dem how I spen' um hirin' ban's an den dey let me down, an' break up my furniture, and go off wid de bedclothes. Mary an' de child'ren's mos' naked, and we's mighty poor now; and de old fellow brushed a tear from his eye and stood waiting for the decision of this mighty Bureau man. This old man lived near Lebanon, Ky., and had walked all the way to Lexington to lay his case before the head of the Bureau.—U. S. Paper.

Natrel History of the Black Man.

The Black Man emigrated twt this free and pious kuntry about 200 years formerly, in the lower story of a vessel; he wuz kindly furnished with a free ride, and sum rice and water for vittals.

Immediately upon his arrival he commenced bizness, for other folks, on our Eastern coast, and had plenty tew do.

He was very economical in his habits ov clothes, wearing but fa, and those seldom made out of cassimere.

He okasionally changed his lokation, moving into an adjoining State, but in these journeys he was always kindly furnished with a guide, so that there wuz no danger ov his getting lost.

In these trips he seldom took his family with him;

they were either allowed to remain a hum, or made excursions in search of work i' other States, unler the guidance of experienced guides.

Once in a while the Black Man would stray away to the cold and bitter North, and get cruely lost.

Hiz guides would mourn for him then, and search for him, but hiz family soon got reconciled tew the loss.

Everybody sed, whare he lived, that he was the happiest critter that had eber bin discovered yet, with nothing tew do but work, and a kind guide tew watch over him awl the time, and mourn for him when he got lost.

But the Black Man is a very phoolish critter.

After 200 years ov this bliss, he grew cross tew hiz guides, and wouldn't follow the guides, and the konsequentz iz, that the guides have got mad, and I am afrade that the Black Man will have tew take care ov himself now.

He will find it very different from what it was before.

He haz got tew educate his own young ones now, and learn them how tew spel korrekty, one ov the most diffcult things in the world; and ho has got tew vote, and keep hiz familee together, and pay when he rides in the street kars.

I am afrade the Black Man haz made a mistake; if he haz, it iz a bad one, for hiz guides never will take him into their hands agin—no, never! They are mad, an don't like the way the Black Man quit them, when they was driv with bizness, and after they had took so much care ov him for so menny years.

I feel sorro for the guides; they alwus seemed tew have a great interest in the Black Man, but they are mad now and I don't know az I blame them much, for Black ingratitude is the poorest kind ov pay.

It perhaps would be well enuff for me to stait, for the benefit of new beginners, that the Black Man formerly resided in Africa, before he cum here to look for work.—Josh Billings.

Horace Greeley's Barn.

THE philosopher of the New York Tribune is a farmer as well as an editor, and appears to have very correct views about most agricultural matters.

His ideas about barns and sheltering stock may be gathered from the following description of his barn from his own pen:—

"My barn is a fair success. I placed it on the shelf of my hill, nearest to the upper (east) side of my place, because a barn-yard is a manufactory of fertilizers from materials of lesser weight; and it is easier to draw these down hill than up. I built its walls wholly of stones gathered or blasted from the adjacent slope, to the extent of four or five thousand tons, and laid in a box with a thin mortar of (little) lime and (much) sand, filling all the interstices and binding the whole in a solid mass, till my walls are nearly one solid rock, while the roof is of Vermont slate. I drive into three stories—a basement for manures, a stable for animals; and a story above this for hay, while the grain is pitched into the loft or 'scaffold' above, from whose floor the roof rises steep, to a height of sixteen or eighteen feet. There should have been more windows for light and air; but my barn is convenient, impervious to frost, and I am confident that cattle are wintered in it at a fourth less cost than when they shiver in board shanties, with cracks between the boards that will admit your hand. No part of our rural economy is more wasteful than the habitual exposure of our animals to pelting, chilling storms, and to intense cold. Building with concrete is still a novelty, and was far more so ten years ago, when I built my barn. I could now build better and cheaper, but I am glad that I need not. I calculate that this barn will be abidingly useful long after I shall have been utterly forgotten; and that, had I chosen to have my name lettered on its front, it would have remained there to honor me as a builder long after it had ceased to have any other significance."

A FRIENDLY PASSENGER.—The Haverhill Publisher relates that during the Vermont State Fair a conductor on one of the railroads innocently extended his hand to a rustic young lady, expecting she would produce her ticket. To his great surprise Miss Verdancy quickly seized his hand, squeezed it most affectionately, and with that peculiarity of manner that always marks the so-called "capable girl," pronounced the cheerful conundrum of "How's your folks?" adding the remark that "it was nice weather." A stern sense of duty compelled the conductor to undecieve the fair creature and to explain to her that he wasn't a "friend of the family," and that he must see her ticket or the money for the ride. Amid considerable confusion "Jeroosha" produced her papers and allowed the conductor to pass without further inquiry about his "folks."

Advertisements.

THE AGRICULTURAL EMPORIUM.

If you wish to Purchase or Sell the best kinds of Seed, Stock, Implements, or Land, Subscribe for

THE FARMER'S ADVOCATE.

TERMS —\$1 per annum, in advance; in Clubs of four or more, 75 cents \$350 to be given to persons getting up Clubs.
 ADVERTISERS WANTED. SEND FOR A COPY.

v5-23-11 Address, W. WELD, London, Ont., D. C.

IMPROVED BERKSHIRE BOAR FOR SALE.

BRED from First-class Stock, by R. HAMILTON, Esq., Hampton Price, \$25, boxed and free on cars at Howmanville.
 H. ELLIOTT, Jr.

Hampton, Nov. 14, 1868. v5-23-11

FOWLS.

WE want one Two of each—Dark Brahmas, Buff Cochins, Golden and Silver Hamburgs and French Fowls. Must be First class, to cross on our Stock.

WADE & ARMSTRONG, 1120 Market St. Phil., Pa.

v5-23-21

FOR SALE,

WHITE COCHIN CHICKENS

FROM Col. Hassan's prize poultry Also, SILVER SPAN- OLED POLANDS.

BOX 274, P. O. Peterboro.

v5-23-11

Duncan's Improved Hay Elevator.

PATENTED April 15th, 1867.

THE cheapest and simplest constructed Fork in use in the Dominion of Canada County or Township Rights for the manufacture of the above Fork may be obtained from the undersigned.

JAMES V. MANN, Port Dover, Ont.

v4-20-11

THE BEST SHEEP MARK YET INVENTED.

IT is made of tinned wire stamped with name and number. Is cheap, does not wear out, and looks well. Price three cents each.

ARCHIBALD YOUNG, Jr., Sarnia, Ont.

AD N. B.—AGENTS WANTED. v3-11-0,0.

MILLER'S

INFALLIBLE



TICK DESTROYER FOR SHEEP!

DESTROYS the TICKS, cleanses the skin, strengthens and promotes the growth of the wool, and improves the condition of the animal.

It is put up in boxes at 35c., 70c., and \$1, with full directions on each package. A 35c. box will clean twenty sheep.

HUGH MILLER & Co., Medical Hall, Toronto. v4-14-11

THE BRIGHTEST ITALIAN QUEENS IN AMERICA.

HAVING IMPORTED three extra fine Queens from the Dzierzon Stock, I can now furnish an unlimited number of the brightest Queens ever offered for sale. Price as usual, \$5.

SAFE DELIVERY GUARANTEED.

I will also be able to furnish an unlimited number of Italian Stocks in the Fall, Italianized with Queens from the imported stock. Price in the S. B. hive \$18—in the D. B. hive \$20.

Orders must always be accompanied with the money, and will receive prompt attention.

J. H. THOMAS, ATARIAN, Brookline, Ontario. v5-15-11

Aug. 1, 1868.

NEW SERIES "THE CANADA FARMER."

THE Publishers of THE CANADA FARMER respectfully announce, that in consequence of the new Postal Law coming into operation on 1st January, 1869, a change in the mode of publishing THE CANADA FARMER has been rendered necessary.

This measure has entirely changed the conditions under which THE CANADA FARMER has been published since its commencement, five years ago. No expense has been spared in maintaining the character of the paper as a first-class Journal.

The Publishers of THE CANADA FARMER have resolved to meet the difficulty thus presented to them, by putting forth more strenuous exertions than ever before to increase the interest and usefulness of their Journal, and greatly to enlarge its circulation.

New Series of The Canada Farmer, with a number of new and attractive features—and nothing will be left undone to make the coming series still more worthy of support than the past.

The new series of THE CANADA FARMER will be issued monthly; the size of the page will be nearly as heretofore, but each number will contain

FORTY PAGES OF READING MATTER, instead of sixteen as formerly. And notwithstanding the new Postal-law the subscription-price of the new series will remain as before,

ONE DOLLAR PER ANNUM

Free of Postage—but without any deductions from that rate. The aid of Agriculturists throughout the Dominion is respectfully solicited in obtaining subscriptions for 1869.

Letters will be addressed as heretofore to

THE GLOBE PRINTING CO., TORONTO.

ONTARIO VETERINARY SCHOOL,

Board of Agriculture, Toronto, Ont.

Established 1902.

PROFESSORS:

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Will re-open for Second and Third Year's Students on WEDNESDAY, the 11th day of NOVEMBER, and the session for First Year's Students will commence on JANUARY 6th, 1869. For particulars, apply to the Principal, A. SMITH, Veterinary Surgeon, Temperance Street. Toronto, Oct. 15, 1868.

IMPORTED FOWLS FOR SALE.

ONE or two Pairs of DARK BRAHMAS, price \$25 per pair. Three pairs dark chickens, from the First Prize Brahmias imported by Mrs. Varley, Toronto, price \$10 per pair. Six pairs light Brahmias, \$4 per pair. Cockerels, single, of either variety, low. Eggs, from first prize imported fowls, dark, \$5, light \$3 per dozen, in the Spring.

Markets.

Toronto Markets.

CANADA "FARMER" Office, Nov. 30th, 1868.

The market has been very quiet and dull. The demand has been very limited, and there have been only a few lots offering. Wholesale prices have ranged as follows:—

FLOUR AND MEAL.

Flour—No. 1 Superfine, \$4 75, Extra, \$5 25 to \$5 40, Superior, nominal. Oatmeal—\$6. Cornmeal—\$4.

GRAIN.

The market has been quiet and unsettled. We quote wholesale prices:—Wheat—Spring, \$1 3 to \$1 05. Fall, do., \$1 15 to \$1 24. Oats—50c. to 61c. Barley—\$1 29 to \$1 35. Peas—55c. Rye—70c. to 75c.

PROVISIONS.

We quote wholesale prices.—Butter—Dairy tub per lb., 22c. to 24c.; store packed, 19 1/2c. to 21c.; large rolls, 22c. to 23 1/2c. pound rolls, 26c. to 27c.; grease, 8c. to 10c. Cheese—(now) in lots, 11c. to 11 1/2c. Pork—Mess, No. 1 per barrel, \$23 to \$23 50. Bacon—Cumberland cut, 10c., smoked bellies, 12 1/2c. to 14c.; rolls, sugar-cured, spiced and smoked (new), 12c. to 12 1/2c., unsmoked, 11c. to 11 1/2c. Lard, in casks, 16c. to 17c., in kegs, 14c. to 14 1/2c. Eggs—15c. to 20c., retail, 20c. to 22c.

THE CATTLE MARKET.

Beef—There is about an average supply of the inferior qualities, and first-class are scarce and command a higher price than recently—selling at \$6 50 to \$7; 2nd class, \$5 to \$6; and 3rd class go off on an average of about \$4.

Sheep—There is a fair supply still coming in, but the market is no longer glutted as it was for some weeks past, and all offering in lots find a ready sale. First-class range from \$4 to \$4 50; second-class, \$3 to \$4; and third-class, \$2 60 to \$2 75.

Hides and Skins—Hides, green, rough per lb., 6c. to 6 1/2c.; do. cured and inspected, 7 1/2c. to 8 1/2c., do. dry, 11c. to 13c. Calfskins, green, 10c.; do. cured, 12c.; do. dry, 18c. to 20c. Sheep skins, \$1.

Montreal Markets.—Nov 25.—Flour—Superior Extra \$/ 50 Extra, \$5 75c. to \$5 85c.; Fancy, \$3 60c. to \$3 40c.; Welland Canal Superfine, \$5 10c.; Superior No. 1 Canada Wheat \$5 to \$5 25. No. 1 Western Wheat, \$5. No. 2 do. \$4 60c. to \$4 70, Fine, \$4 30c. to \$4 40c. Middlings, \$4 10c. to \$4 15. Pollards, \$3 90c. to \$4. 1/2 Wheat—Canada Fall, \$1 20c.; Spring \$1 15c., Western, \$1 10c. to \$1 11c. Oats—Per 32 lbs., 60c. to 62c. Barley—Per 48 lbs., \$1 10c. to \$1 20c. Butter—Dairy, 21c. to 23 1/2c.; Store-packed, 20c. to 21c. Cheese—Factory 10c. to 11c.; Dairy, 9c. to 10c. Pork—Mess, \$22 50; Thin mess, \$20; Prime Mess, \$18; Prime, \$15.

London Markets, Nov. 24.—White wheat, \$1 10 to \$1 15, red fall wheat, per bushel, 90c. to 92c.; Spring Wheat, 90c. to 95c., Barley, \$1 10 to \$1 25, Peas, 73c. to 75c., Oats, 44c. to 46c.

Galt, Nov 24.—Large quantities of turnips are being sold at 12 1/2c. per bushel. Barley runs at from \$1 00 to \$1 16. Hay from \$11 to \$12.

Guelph Markets, Nov 24.—Fall Wheat per bushel \$1 to \$1 05, Spring Wheat, \$1 03 to \$1 05 Oats per bushel, 50c. to 55c. Peas per bushel, 80c. to 85c. Barley, per bushel, \$1 10 to \$1 15. Wool, 26c.

Hamilton Nov. 24.—Wheat—Am., white, per bushel, \$1 20 to \$1 25; red winter, \$1 00; spring, \$1. Oats, per bushel, 65c. Peas, per bushel, 80c. to 85c.

New York Produce Market.—Flour—Heavy and extra; receipts, 14,000 barrels; sales, 7,400 barrels, at \$5 40c. to \$5 80c. for superior State and Western. \$5 25c. to \$5 70c. for common to choice extra State; \$5 20c. to \$7 75c. for common to choice extra western. Rye Flour—Steady, at \$4 to \$5. 1/2 Wheat—Dull and heavy, receipts, 230,000 bushels, sales, 30,000 bushels, at \$1 45c. for No. 2 spring; \$1 43 for No. 2 and 3 do. mixed. Rye—Firm, receipts, 10,700 bush., sales, 19,000 bush., Western at \$1 40c. to \$1 45c. Corn—Firm; receipts, 44,000 bushels; sales, 47,000 bushels at \$1 10c. to \$1 12c. for unsound, and \$1 13c. to \$1 15 1/2c. for sound mixed Western. Hay—Steady, receipts, 1,800 bushels; sales, 2,000 bushels French at \$2 20c. Oats—Firm; receipts, 110,000 bushels; sales, 64,000 bushels at 71c. to 71 1/2c. for Western, chiefly at inside prices. Pork—Lower, at \$26 50c. for Western, for now mess, \$25 50c. to \$26 50 for old and Lard—Heavy and lower, at 15c. to 16 1/2c. for steam; 10 1/2c. to 17c. for kettle rendered.

Contents of this Number.

Table with columns: THE MONTH, THE FIELD, STOCK DEPARTMENT, CANADIAN NATURAL HISTORY, VETERINARY DEPARTMENT, THE DAIRY, ENTOMOLOGY, CORRESPONDENCE, EDITORIAL, AGRICULTURAL INTELLIGENCE, HORTICULTURE, POULTRY YARD, THE APIARY, POETRY, THE HOUSEHOLD, MISCELLANEOUS. Includes page numbers for each section.

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