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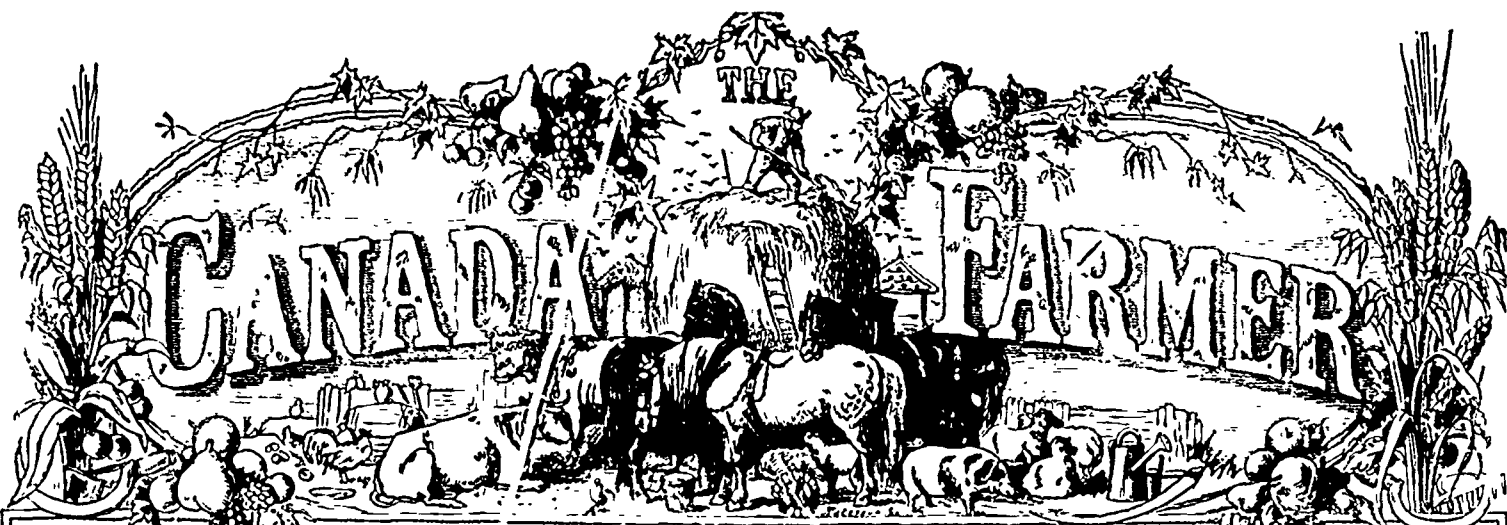
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Vol. III. No. 18.

TORONTO, UPPER CANADA, SEPTEMBER 15, 1866.

POSTAGE FREE.

The Field.

Familiar Talks on Agricultural Principles.

TILLAGE.

The farmer's business is often described as being to "till the soil." This vague expression properly understood, well describes the most important part of his work. It is on the soil he has to operate. Out of it his returns must come. Everything depends upon the condition into which it is brought and kept. Its tillage, strictly speaking, has to do with securing a state favourable to the reception and growth of seed. Several processes are necessary in order to this. In a new country like Canada, where the woody wilderness has to be converted into fruitful fields, clearing and draining must precede ploughing, harrowing, and rolling. Much land is called "cleared," upon which this operation has been only half performed. It still bristles with stumps, or is thickly beset with stones. With such obstructions, it is impossible to bestow effectual tillage upon land, and every farmer should as quickly as possible get rid of stumps and stones. In ordinary circumstances, there must be patient waiting for the stumps to rot. But it would pay in many cases to extract the stumps by force. If several adjacent farmers would club together and buy an effective stump machine, the cost would be trifling to each, and the advantage great to all. A long lever, consisting simply of a stout, tough, round log, will do good service in twisting out stumps that are partially decayed. Fastened with an extra strong chain to the stump, such a lever worked by a good yoke of cattle, will "dislodge" many an "old settler" that left in the ground would be a nuisance, an eyesore, and a hindrance to the plough, for years. Stumps are often allowed to stand in a field when they are so rotten that a push with the hand or foot will send them over. This is negligent, slovenly procedure. By all means, be rid of the stumps and stones as quickly as possible.

When land is wet, but little progress can be made without draining. A soil saturated with stagnant water is utterly unfit to grow crops. It is impossible to work wet lands early in the spring, and thus valuable time is lost. When the seed is in, it will not germinate quickly, or grow fast, or ripen seasonably. An excess of water in the soil excludes the air, which is necessary to promote the assimilation of plant food. It also changes organic materials into vegetable acids, producing the condition which we call a "sour" or "cold" soil. Land not properly speaking wet, is greatly benefited by drainage, and there are few farms that would not be rendered far more valuable and productive by this important preparation for culture.

Supposing land to be cleared and drained, thorough ploughing is the next process. Its objects are to

make the soil mellow, to change the surface and bring up new portions for contact with the air, to mix the top soil and the subsoil together, to cover and distribute manure, and to destroy weeds. Ploughing should be deeply done. If shallow, it is to a great extent labour lost.

Deep ploughing has many advantages. It exposes more of the soil to the action of light, warmth, air, and moisture; affords more space for the roots of plants; produces many of the beneficial effects of draining; gives more land to the acre, adding deep acres to broad ones; preserves from the evil consequences of both drought and excessive rain; and saves labour by securing larger crops on the same space, than can be raised by mere skim-ploughing. Where shallow ploughing has been practised, the deepening of the soil should be gradually accomplished. By going down an inch lower each time, only a little of the hungry sub-soil is brought to the top. In this way, if in addition to deepening, manure is liberally applied, gradually the whole of a deep seed bed is pulverized and pervaded with fertilizing material. Subsoiling, as it is called, is an excellent practice. It is performed with a plough that does not turn a furrow, but simply stirs the soil beneath the furrow already turned. It has been known to add one-third to the crop. The importance of having a deep, rich, mellow soil cannot be over-rated. It is a pleasure to work such a soil, a pleasure to gaze at the luxuriant crops growing in it, a pleasure to harvest the abundant products it yields, and a pleasure to count up the gains derived from it. Most people are unaware of the immense good done by mere tillage. It is hardly possible to be too thorough in working the soil, so as thoroughly to stir and mix it. From the fact that a large amount of fertilizing material is absorbed from the air, and that a loose, light condition of soil is most favourable to extracting the supplies thus obtained, tillage not merely prepares the land for a growing crop, but to a considerable extent provides manure for it. Hence the maxim which should never be lost sight of by the farmer, "TILLAGE IS MANURE."

Early Fall Ploughing.

The ploughing of land in the fall of the year is practised by many farmers merely to save time the following spring. It is a good practice, when viewed in this light, for the season of spring is so brief that there is always too much crowded into it, and it is well to lessen and lighten its labours if we can. But in this view of fall ploughing, the end is gained if the work be done any time before frost sets in. There are, however, special advantages which can be secured by early fall ploughing. If it be stubble land that is ploughed, a crop of weeds is turned under which might otherwise go to seed and give annoyance another year. These weeds together with the roots

of grass and the stubble of the cereals are converted into manure, during the mild weather that precedes the setting in of winter. If ploughing is done in cold weather, or just before frost sets in, the roots and stems will remain undecayed until spring. The turning up of fresh surfaces to the action of the weather before the season of growth is over, affords an opportunity for fertilizing gases to be absorbed, and fixed for the use of a future crop. The soil is not only a reservoir of plant-food, but it attracts that food, and when it is made to lie up lightly it is full of cells and interspaces, each one of which is a little store-house of nutriment for vegetable life. Moreover, early fall ploughing gives a chance for enriching the soil with the ammonia that descends in the rainfall of thunder storms, a benefit by no means to be despised. Fall ploughing, whether late or early, exposes the soil to the action of frost and snow during the winter, by which important results are secured. It becomes finely pulverized, many fertilizing ingredients are made available, ammonia is absorbed from the snow, and stored away for future use, tough clay is softened, hard sods are crumbled, and nature is made to help and lighten the toil of man.

Fall Sowing of Timothy.

TIMOTHY is usually sown in spring along with a grain crop, and, as is well known, there is always more or less of uncertainty as to its getting a good "catch." The grain, of course, comes on faster than the grass, and not only overshadows it, but extracts the lion's share of the moisture which the young timothy greatly needs in the earlier stages of its growth. It is considered that the shade afforded by the grain is favourable to the grass, preventing its being parched by the hot summer sun. This is doubtless true to some extent, but the shade is excessive, and being associated with a monopoly of the moisture, there can be no question that on the whole, the timothy has a pretty hard struggle to live. Evidence of this is furnished by the frequent partial or entire failure of a seeding down. Sometimes drought prevents its taking well, and when the summer is moist so that it gets a good start, many of the young plants are crowded out by the thick grain, or trodden and crushed to death in harvesting, or trampled, torn out and destroyed by the pasturing of cattle and pigs in the stubble. Under the most favourable circumstances it is questionable whether spring-sown timothy will cover the ground as well the following season, as that which is sown in the fall, provided the ground is properly prepared and the work well done. We believe that where a due amount of attention is paid to the getting in of the seed, fall sowing will result more satisfactorily than spring sowing. Generally speaking, farmers grudge the same trouble and labour for grass seed that they bestow cheerfully

on all other crops. But being smaller and more delicate, the seeds of the grasses ought to receive greater care than those of larger and sturdier crops. The gardener sows his finer seeds with special care, mellowing the land as much as possible, and even dusting the seeds with soil passed through a sieve, so as to give them the best possible chance of germination. So should the farmer bestow extra attention upon his smaller seeds. Thorough preparation of the land for a timothy meadow will pay, and a stubble field re-ploughed, harrowed, and seeded down in the fall, will yield a far better crop of grass the following year, in nine cases out of ten, than the same field would have done with the timothy sown along with the grain. Not only should the soil be well mellowed for a fall seeding of Timothy, but the now general use of mowing machines renders it necessary that the ground should be free from stones, grubs, and stumps; also that the surface be made as level and smooth as possible. The success and profit of the crop will also be enhanced by this course. From the beginning of September to the middle of October, timothy may be sown with good chance of its doing well. The earlier it is got in, provided the ground is moist enough and the weather favourable, the better the plants will become rooted before winter and the more able they will be to withstand the effects of the late fall and early spring frosts. A bushel of seed will sow six acres. Some sow less than this. A gallon per acre is considered sufficient by many. It is better, however, to sow grass seed with a liberal hand, and make sure of putting on enough.

Memoranda on Land Drainage.

Mr. John C. Morton, one of the most practical and accomplished English writers on agriculture, contributes the following directions on the subject of underdraining, to the London *Agricultural Gazette*. They will be of material service to farmers in this country; for while, in the matter of depth, there is some difference of opinion among those who have had the most experience in this country—and in the matter of cost, Mr. Morton's figures do not apply,—in his "memoranda" of previous considerations to be regarded, and calculations of distances apart and lengths of drains, he speaks from extensive practice and wide observation:

1. In the first place, arrange the whole plan for the whole estate before commencing a single field. Do not fritter away your means in laying one field after another dry on plans proper enough for each, but not well fitted to one another. This is especially good advice where a whole estate, comprising several farms, is taken in hand for improvement. The selection of an outfall, and the fitting it for its purpose, the removal of spring water, the order in which the work shall be done, which is determined by two considerations, viz., 1st, the necessity of working from the final outfall upwards; and 2d, the possibility that water removed from one part may lay dry another; so that here, as opposed to the other consideration, the necessity may arise, or rather the propriety may be indicated, of draining a higher field first of that water which is thus hindered from re-appearing below—all these are, to use the words of the politician, not local, but imperial questions, needing attention in the first place. The arrangement of the plan for the whole estate should, in fact, be attended to before any of the work is commenced.

2. Next, get a permanent and sufficiently deep outfall, to allow, if possible, an easy fall from four feet below the lowest part of the land.

3. Remove all spring-water—tap all porous and water-logged beds—and in general provide, in the first place, for the removal of all the water which comes upon the land, or on any part of it, otherwise than directly from the clouds. To this end straighten all water-courses, leaving, however, as few open ditches as possible.

4. Lay drains in all habitual water-courses; humour and attend to the habits which the water of the estate has acquired, if you mean to obtain an immediate result. Yet this, in the case of grass lands with deep ridges and deep intervening furrows, go the length of inducing you to put drains in the furrows, however they may hurt you, rather than up and down the

slope in straight and parallel lines, with uniform intervals, disregarding the old ridge and furrow arrangement.

5. When all this has been done, then begin the drainage of the estate—field by field—the lowest first and proceeding from the lowest part of each to the upper part. Dig a main drain with sufficient fall along the foot of the lower field first, about 8 yards or thereabouts from the hedge, and 4 feet 6 inches deep or thereabout, i. e., somewhat deeper than the drains which run into it, and wide enough in the bottom to take a 3 or 4 inch pipe—one large enough, at any rate, to take all the water which is likely to run in it.

6. Dig trial holes here and there across the face of the slope, 4 feet deep, and try the effect of a single narrow drain, 4 feet deep, taken right up the slope in their midst; and learn from the distance at which this minor drain will empty these holes the intervals between your drains, which in each field you will adopt.

7. Your minor drains should be 4 feet deep, both for the sake of their permanence and efficiency, and for the sake of the greater quantity of earth per acre which will thus be fertilized for the use of plants. They must take a two-inch pipe up to near the top of each; and a one-inch pipe will suffice at the upper end, where less water runs. They will be from 7 to 8 yards apart, in homogenous soils—10 to 12 yards apart in freer and more open soils; and any greater distance in rocky or gravelly subsoils, which are unable to discharge their water naturally, but which a single deep drain will often lay dry for acres, by the artificial outlet thus provided.

8. As to the way in which, when the method which any field requires has been determined on, the work is actually set out, it may suffice to mention that the place of each drain right down the slope should be pegged out, and (especially in the case of grass lands) the line itself may then be opened up by the plough, which will, with horse labour, thus take out to its full width the first six or eight inches of the depth. A working man of ordinary size can easily stand and work in a drain 3 feet deep if it be a foot to 14 inches wide at top. He stands in such a drain, and takes out the remaining foot in depth, making a 4 foot drain without difficulty. In the case of a drainage match held some years ago before the Hertfordshire Agricultural Society, there were 17 sets of men at work, and the prizes went for drains 12 inches and 11½ inches wide at the top respectively. One drain was opened 4 feet deep, with only a 9-inch opening at top.

9. As to the cost of the work, earth capable of being lifted in masses by the grafting tool can be put into barrows for 2d. per cubic yard; and the difficulty of working in a narrow drain adds only this much to the cost, that the labour of cutting and lifting earth in making drains varies from only 2½d. to 2½d. per cubic yard. A 4 foot drain thus costs from 6d. to 8d. per rod for cutting it.

10. Let us here enumerate the items of cost per acre. If drains be 5½ yards apart, 880 yards are needed per acre; if 8 yards apart, 605 yards per acre are needed; if 11 yards apart, 440 yards per acre will be required. If the mere cutting be 6d., the cost of opening the drains will be £4, £2 15s., and £2 per acre; if it be 8d. per rod, the cost will be £5 6s. 8d., £3 13s. 4d., and £2 13s. 4d., per acre respectively. If the tiles used be 2-inch pipes, at 20s. per 1000, they will cost 50s., 36s., and 25s. per acre in these several cases. If collars be needed to connect the tiles, you must add one-half more on their account. Add some 5s. an acre for superintendence, and 1d. per perch for filling in the earth after laying the pipes; and you have as the cost of drainage £10 to £8 per acre, according to the quality of the work, in near drainage, and £4 10s., to £6 per acre, according to the character of the work, in the wider drainage. The average cost under ordinary circumstances, including the extra cost of mains and outfalls, may be put at £5 per imperial acre. There cannot be a doubt that, thus adding from 8 to 10 per cent. to the cost of the estate, they often result in an increase of 30 to 50 per cent. of its value.

HIGH CULTIVATION.—The *Maine Farmer*, alluding to the subject of "high cultivation" so much talked of and written about, says that there is much more talk than improvement. A man looks over his farm, of many acres, and finds the whole needs aid, but not being able, at once, to render it to all portions, makes no particular effort to improve any part. The right way—right because alone practicable—is to commence with a few acres at a time. Get these in good heart the first year and the increased product from them will aid in experimenting on another section the succeeding year. In this way the farm will soon become renovated, and properly cared for, will not run down again as "long as grass grows and water runs."

A Splendid Cranberry Yard.

We had the pleasure of inspecting the cranberry plantation of S. N. Gifford, Esq., of Duxbury, the popular Clerk of the Senate. It consists of something less than two acres, lying about three miles from the sea shore, and well protected by surrounding woods and uplands. It was reclaimed from a low brush swamp, full of high blueberry and other shrubs and trees, the surface having been first pared off at great expense of time and labour, and sand applied to the depth of an inch or two, when the vines were set about a foot and a-half apart in drills. This is the fourth year of growth, and the bed is completely and beautifully covered with the closely-matted vines. We have seldom seen a yard so clean and well cared for. The yield last year, which was the third, of a considerable part of the piece, was large and satisfactory, and the prospect of the present year is remarkably good, the blossom being already very full and beautiful.

Mr. Gifford and his partner in the operation, Mr. Loring, are continuing the work of subduing the balance of the wild swamp, and if anybody wants to see a specimen of enterprise and pluck, let him take a look at the enormous amount of labour required to get it ready to receive the vines. By the time the plantation is ready to bear, which can hardly be in less than three years, the cost per acre cannot be less than four or five hundred dollars; but the result of the part already in bearing has proved the thing to be a most capital investment, and fully justified the calculations of the enterprising owners.

This yard is flowed in winter, but not by a running brook. The rains fill it and cover the meadow to the depth of a foot or more, while the ditches, which are, perhaps, twenty feet apart, take off the water only slowly in spring. There are no means of flowing rapidly at any season of the year, but then they are less required near the coast than they would be farther inland, on account of greater freedom from late spring and fall frosts. However uncertain this crop may be in places very liable to frosts, and where the cultivator has not full control of water for flowage, there is little trouble on this score along the seashore. There the greatest risk to be apprehended is from the "fire fly" and the cranberry worm.

It is but a few days since we visited the noted plantation of Dr. E. D. Miller of Dorchester. He has about twenty acres in his different yards, situated in the town of Franklin, most of which was reclaimed from a swamp at even greater labour and expense than Mr. Gifford's, but he has full control of water in ample reservoirs, which are capable of flooding the lots in an hour and a-half; while the ditches will free them in about the same length of time. Dr. Miller picked a thousand barrels from his plantation in one year, and we believe the yield last year was from a thousand to twelve hundred bushels. He is still going on with expensive improvements, and extending the area of his yard. Some other lots of cultivated cranberries that we have recently visited, will be alluded to hereafter.—*Mass. Ploughman*.

Beet Sugar.

A CORRESPONDENT of *The Nation*, writing from Germany, thus describes the condition of the peasantry on the great sugar beet plantations, and also the manner of making beet sugar:

After an hour or two I began to come into the midst of the great sugar-beet plantations for which this part of Germany is celebrated. The fields in which the root is planted here are often of vast extent, sometimes two or three hundred acres, reminding me of the prairies of the great West or the plantations of the South. I was inclined to continue the comparison last made much farther after seeing the manner in which they are cultivated. The beets are drilled in rows about fifteen inches apart, and the whole labour of tilling them, from first to last, is performed with the hoe. Never before had I seen so complete a reproduction of some of the scenes I have witnessed in the Southern States on the cotton plantations. Here were at work, men and women together, from fifteen to eighteen in one gang, hacking stolidly over the ground with the same mechanical stroke that marked the slaves. In one row I counted eighty-one, and they were principally women. When their labour is ended, however, and at the nooning, they display the same buoyancy and often playfulness that are characteristic of the blacks. When the village bell in the distance or the winding horn calls them to their simple fare, they often caper and chase across the fields in a rough buffoonery that shows the German elasticity of temperament is still unimpaired.

The clothing of these peasants is of course of the simplest and cheapest; a short, thick dress of woolen, and a close hood of the same for the women, and

cheap, substantial store fabrics for the men. The women wear almost entirely material of their own manufacture, even to the shoes, which are mere soles of wood with a little leather tip or socket to retain them on the foot; but the men wear much less of it than our country people in America.

The wages that these people get, are, for American needs, utterly insignificant, and they are certainly small enough even for the supplying of German wants. The men get from sixteen to nineteen cents a day, the women from thirteen to fifteen, and that for a day of fourteen hours; for they generally begin at five o'clock and work till seven. Their labour is not severe, but very tedious and exhausting:

At Stassfurt, a thriving city of 15,000 inhabitants, I found the manufactories of beet sugar more numerous, perhaps, and certainly greater than in any other city in Germany. One of them employed a thousand operatives, another six hundred, and several others four or five hundred each. The beets are brought from the fields and elevated to the upper story of the building, where they are cleaned, crushed, filtered, &c., the juice descending from story to story, through curious processes, until it reaches the last one in the shape of beautiful "sugar hats," or cones of about two and a half feet in length, of the best quality of white sugar. The juice of the beet is red, a shade lighter perhaps, than claret wine, but when boiled down without putrefaction the sugar is only slightly tinged. This is called the "red sugar," and is converted into white by the use of blood. It is cast in earthen moulds, of the size of the "hat" above mentioned, in which it is dried eight days and then taken out and polished for market. Take one of these clear solid cones up on its edge and strike it with a key, it rings like the purest steel. The price of this sugar at the factory at present is ten cents a pound, and, after testing it a hundred times, I pronounce it not at all inferior to the best article from Louisiana. One establishment, employing six hundred labourers, turns out six million pounds a year. The beets cost ten cents per hundred pounds, taken from the fields.

Lime as a Manure.

Nearly every plant and vegetable has a portion of lime in its composition, and from this fact the necessity of keeping up a supply of it in the soil is apparent. A certain portion of it is necessary in every soil—more than this is useless. In some cases it has a remarkable effect; in others no good results are visible. Its effects are not immediate, but are lasting, especially on land laid down for permanent pasture. It promotes the growth of clover, and grasses of every kind, and adds to the size and vigour of root crops. A small quantity of lime mixed with muck or rich soil of any kind, will have a better effect than a much larger quantity applied without the addition of any other substance. Professor Johnston says, "Lime acts in two ways upon the soil. It produces a mechanical alteration which is simple and easily understood; but it is the cause of chemical changes which are really obscure, and are as yet susceptible of only partial explanation.

"1st. It supplies a kind of inorganic food, which appears to be necessary for the healthy growth of all our cultivated plants.

"2nd. It neutralizes acid substances which are naturally formed in the soil, and decomposes, or renders harmless, other noxious compounds which are not unfrequently within the reach of the roots of plants.

"3rd. It changes the inert vegetable matter in the soil, so as gradually to render it useful to vegetation.

"4th. It facilitates or enables other useful compounds, both organic and inorganic, to be produced in the soil, or so promotes the decomposition of existing compounds as to prepare them more speedily for entering into the circulation of plants."

Lime exists in clover and wheat, turnips, oats and maize, and in almost every plant. In nature it mostly exists as a carbonate, that is in conjunction with carbonic acid. Sinclair says that the saving of labour alone would be sufficient to induce a farmer to lime his land, were no greater benefit derived from the application than the opportunity thereby gained of working it more easily and in a more perfect manner.

It is said that the ashes and lime deposits caused by the fire at Portland, would be worth \$200,000 if applied to the farms in that vicinity.

In Steuben County, N. Y., there was a large meadow of timothy grass that was four feet high all over the field, and yielded three tons to the acre.

WHITE WILLOW FENCES.—Levi Smith, of Story Co., Iowa, writes to the *American Agriculturist* as follows: "In the June number of the *Agriculturist* you make some inquiries about the white willow. James Smith is the man who first introduced the white willow into Illinois, in 1843. He there tested it successfully. There is a fence on the old farm in Illinois twelve years old, for which the owner refused \$8 a rod for the trimmings some years ago, it was to be cut high enough to leave an everlasting live fence. I have known it to form stems in one season 1½ inches in diameter. Designing men have procured such samples and with them have canvassed the country and obtained orders, which have often been filled with a spurious article easier to procure. Our farmers have been so shamefully humbugged with worthless trash, that they are of opinion that all willow is alike worthless. I have now six miles of it, three and four years old, and it is a substantial fence, ready to turn and defy any stock. I consider it worth more to-day than the land it encloses. For fuel I grow five times the amount I can consume. Every year I can cut enough poles to fence 2000 acres of land, and still leave me a substantial live fence when they were cut. You may say to the readers of the *Agriculturist* that the white willow is no humbug, and if any of them will call, I will show them six miles of fence, which will settle the question."

DIEHL WHEAT.—John Johnston writes the *Country Gentleman*, under date of near Geneva, August 9th: "I this day send you a sample of my Diehl wheat. After you have examined it, please, when convenient, hand it to my friend, Col. B. P. Johnson, to place in the Agricultural Rooms. They have some wheat raised by me there already, but I think there is nothing better than this at the Rooms. I have just about 105 bushels of 60 pounds; from 3 bushels and 27 pounds sowed. Had I sowed it on the other side of the field, I would have had a larger return, but I forgot that I had not had dung enough to go over the whole field when it was manured three years ago, and a part of that where the Diehl was sowed was left without manure. I think the Diehl wheat will be a valuable wheat for us here; it is quite early, and was cut before any Mediterranean wheat in this neighbourhood. My Witter wheat has yielded 33 bushels per acre by measure. I have not tried its weight, but I have no doubt it will go 61 or 62 pounds. The Diehl goes 62½ as it came from the threshing machine, but it seems as clean as it can be. The sample sent has not been through any fanning mill, except the one in the threshing machine, but I will put it through another by-and-by, and perhaps report the net weight of the whole. I understand there were some 800 bushels of Diehl wheat sown last autumn in Canada West, around Paris, and would like some of my old correspondents there to write me how it succeeded. I have no doubt it has done well, and I will sow Diehl only this season. I might add that I got 40 bushels of barley per acre last year, from the same land I raised the wheat on this season."

The Dairy.

Letter from a Pennsylvania Butter Dealer.

A correspondent of the *Country Gentleman* writes that journal as follows:

"I have just received, and herewith transmit the rigid rules and general economy in butter-making, observed at the dairy of one of our Keystone Country Gentleman, where as prime, delicious butter is always made as ever came from the land of Goshen, or any other butter latitude. Here is the whole formula, clear, concise and reliable.

"To make superior butter requires a combination of superior materials and conditions—good feed, suitable place for keeping milk and cream, practical experience and strict attention to small matters. Extreme cleanliness and a sharp eye all around, comprises the requisites needed. Butter is of a very delicate and sensitive nature—the most easily affected by contact with unpleasant odors of any article devoted to table consumption. Some years ago we had a whole churning of butter ruined by placing it in a neighbour's vault over night to harden, in consequence of the mortar used in the construction of the vault not being thoroughly hardened.

"Our summer feed is principally clover and timothy grass. In winter, ground corn and oats in equal proportions, clover, hay and corn-fodder, with oat straw occasionally, if bright and in good condition. All fed dry. Formerly we cut the fodder and mixed the meal well through it. Then immediately after each feeding put a mess in soak for the succeeding one. But the cows neither looked nor produced so well as under the present management, while the expense of time and labour was largely increased.

"We use a cave built in the southern slope of a sharp hill, requiring but seven steps at the entrance, while the back part is nearly ten feet below the surface, the top being covered with about four feet of earth. The bottom is laid with marble, and the cave separated into three apartments—the first for straining milk, working and weighing butter, &c. The second is exclusively for milk and cream. The third—adjoining the ice-house—for hardening butter in warm weather.

"We usually milk from twenty-five to twenty-eight cows, and have them coming in fresh throughout the year, which keeps the butter uniform in quantity and quality. We use no thermometer in churning—set the milk four inches deep in tin pans. Have a butter worker, but keep it in the garret to season. Keep water and hands entirely from contact with the butter, or as much so as possible. Work the buttermilk out, and the salt in, with a paddle. Salt to taste. Make in pound and half-pound prints, and forward it to the city in butter tubs with coolers attached, the tubs holding from forty to seventy-five pounds, which enables us to furnish it to our customers in a condition equal to that in which it left the cave. In cold weather we use a coal fire in the cave to supply the heat necessary to make the cream rise freely, and enable us to convert it into butter expeditiously.

"Every manufacturer, vendor and consumer of butter ought to know that the effluvia from cooking provisions, raw vegetables, fish, musty cellars, &c., will spoil the finest butter in a few hours."

The Oxford Cheese Factories.

Herewith we give a list and names of proprietors of the principal Cheese Factories of the County of Oxford, with the probable amount of cheese manufactured during the season of 1866.

James Harris & Co., township of West Oxford, with a branch in the township of Deroham, is using the milk of about 500 cows, and will make about 70 tons of cheese, all of which has been sold and contracted for at 12½ cents per pound.

Andrus Smith & Son, Norwich, use the milk of near 400 cows. The average estimate of cheese produced from each cow is somewhat over 300 lbs., which can be increased considerably by good feeding. Smith & Son have not yet sold.

Harvey Farrington, Norwich, uses the milk of between 300 and 400 cows, and has sold all his cheese at about 12½ cts. His average yield per cow is quite as good as any other.

Bailey, Norwich, has a nice new factory, which this season uses the milk of about 400; has sold at 12½ cents.

Samuel Elliot, West Zorra, uses the milk of 400 cows—a first rate factory—has sold all his dairy produce at 12½ cents.

John Ailum, West Zorra, uses the milk of from 350 to 400 cows, has sold a quantity of his early make at 1½ cents, and the balance of dairy at 12½ cents.

Jonathan Jarvis uses the milk of 250 cows; has a very good factory in North Oxford; and has sold his whole lot at 12½ cts.

Josiah Collins, Dereham, uses the milk of about 150 to 200 cows, and has sold his whole lot at 12½ cts.

The above are the principal factories of the County, and have all sold to one party—Mr. E Caswell of Ingersoll. Besides these there are quite a number of dairies which are manufacturing on the factory principle, and in the aggregate will make a large quantity.

THE BUTTER MAKER'S GOLDEN RULES.—The great secret in butter making, it seems, consists in attending to the following points:

1st. Securing rich, clean, healthy milk—milk obtained on rich old pastures, free of weeds.

2d. Setting the milk in a moist, untainted atmosphere, and keeping it at an even temperature while the cream is rising.

3d. Proper management in churning.

4th. Washing out the buttermilk thoroughly, and working so as not to injure the grain.

5th. Thorough and even incorporation of the salt, and packing in oaken tubs, tight, clean, and well made.

TEMPERATURE IN BUTTER MAKING.—According to experiments made by Pohde, the temperature of the cream affects—

1. The time required to make the butter; the colder the longer.

2. The quantity of the butter; the colder the cream the greater the quantity.

3. The quality of the butter—cold cream producing the best.

Hence, although by using warm cream there is a saving of time, there is a loss in quantity and quality.

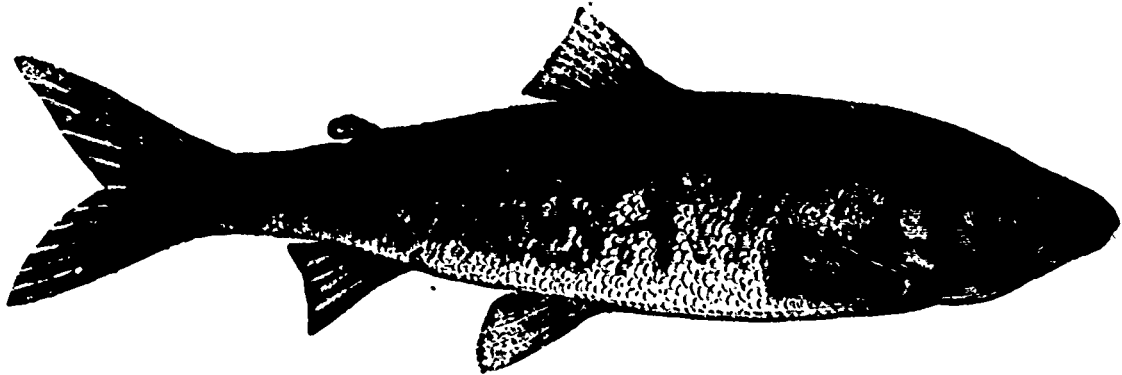
Canadian Natural History.

Lake Trout.

The ordinary and well-known speckled trout of our brooks attains a large size, and becomes a truly noble fish, when transferred to a lake fed by pure spring water. Amid the quiet depths of such a home, it assumes proportions never gained in a shallow, rippling creek. In many parts of the country nice little natural lakes exist which, stocked with brook

countries and Arctic region. It does not inhabit any tidal rivers, nor does it ever visit the sea. It is supposed not to exist in Lake Ontario or in any of the small lakes of the Northern States. The companions of Dr. Richardson and Sir John Franklin took it as far north as Winter Lake, lat. 64° N., but it has not been found in any of the waters that discharge themselves southward by the Mississippi or Missouri. The average size of this large fish in Lake Huron is stated by fishermen to be seventeen pounds, but it is no uncommon thing for them to be taken of from forty to seventy pounds weight. It is bold, power-

are armed with very sharp and strong conical curved teeth; those on the vomer consisting of a circular cluster on the knob of that bone, and of a double row extending at least half an inch backward. The dorsal fin is situated in the middle of the fish, and contains fourteen rays, the eighth ray being exactly central between the snout and the tip of the central caudal-fin ray. The second adipose dorsal fin is small and obtusely formed. The caudal-fin has nineteen, the centrals each nine, the anal eleven, and the pectorals each fourteen rays. The origin of the central fins is slightly posterior to the centre of the fish."



GREATEST LAKE TROUT.

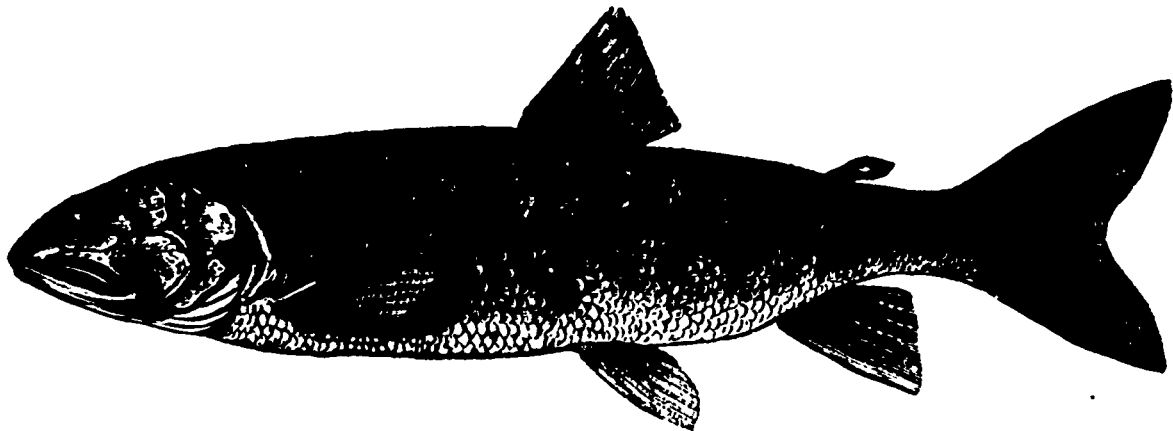
trout, would soon become of great value. We lately met with a case in point. During a short tour through parts of the counties of Bruce and Grey, we fell in with a farmer who had on his two-hundred acre lot, a lake comprising some fifty acres, the water very pure and cold, and without visible inlet or outlet. It is both supplied and drained by subterranean channels. Into this lake a few dozen brook trout were put some twelve years ago, and the result is that it is now swarming with fish, some of which are of quite large size. Specimens weighing over six pounds in weight have been taken, and already splendid returns are available as the reward of the small amount of trouble taken in stocking this lake a few years since. We are persuaded that the subject of fish culture is one of great practical importance, and ought to receive more attention than it does at present.

But while the common brook trout becomes a fish of considerable size when transferred from the creek or river to a body of deep still water there are species of trout peculiar to the large lakes of the North American continent. We present herewith a couple of illustrations of these lake trout, properly so called. The first is an engraving of the "Mackinaw Salmon," as it is popularly but erroneously styled. A better

ful, and voracious, feeding greedily on a number of the smaller finny tribes. Lured by a small fish, a piece of pork, a red rag, or a bit of bright tin made to play rapidly through the water, it falls a prey to the art of the fisherman. The following description of this truly noble fish is extracted from Frank Forester's "Fish and Fishing of North America: "

"In form he rather resembles the common Salmon, although, perhaps, he is rather deeper in proportion to his length. His head is neat, small and well-formed, with rather peculiar depression above the eye, and the snout sharply curved and beak-like. The head forms nearly a fourth-part of the whole length of the fish; the skull is more bony than that of the common Salmon, the snout not cartilaginous but formed of solid bone; the jaws are very strong, the upper overlapping by half an inch, the lower, which is strongly articulated to the preoperculum and to the jugal bone. The eye is midway between the snout and the nape, and twice as far from the hinder-edge of the gill-cover as from the tip of the snout. Of the gill-covers, the preoperculum is curved and vertical, or nearly so; the suboperculum is deeper than in the other Trouts, and is jointed at its inner angle to the operculum and preoperculum by a slen-

Our second engraving represents the "Northern Lake Trout," or *Salmo Siskawitz* of Professor Agassiz, by whom this fine fish was discovered, during a trip to the upper lakes for scientific purposes. In colouring and general appearance this lake trout seems to an un instructed eye very similar to the Namaycush just described. It is found in the same waters, and most abundantly in Lake Superior. It is a greener coloured and less lustrous fish than the Namaycush, and much less distinctly spotted. It is also rather shorter and stouter and does not taper so much at either extremity. Nevertheless there is so close a similarity between the two species, that they are very readily confounded by unscientific observers. The Siskawitz is a clumsier and coarser fish than the preceding one, but its flesh is of richer quality, and when salted commands nearly double the price. These fish are nearly identical in their habits and habits. They are not migratory, and do not enter the rivers either for food or to spawn, but approach the shores and visit the gravelly shallows at spawning time. They are taken by the Indians and others with torch and spear, occasionally with the net, and also with the line in deep water. The Siskawitz varies from fifteen to twenty-five pounds in weight.



NORTHERN LAKE TROUT.

name has been given it by a great piscatorial authority, viz: "the greatest lake trout." It is known among naturalists by two designations, *Salmo Amethystus*, and *Salmo Namaycush*, the latter, as embodying the Indian name of this splendid fish, being generally preferred. It is found in all the great lakes to the northward and westward of Lake Erie, to the fur-

der process concealed by these bones. Its edge forms fully one-half of the border of the free gill cover, and is finely grooved. The gill-rays are twelve in number. The dental system is very complete and more formidable than in any other member of the family. The intermaxillaries and labials, as well as the palatine bones, lower jaws and tongue,

There is a third species of lake trout, closely resembling the two already mentioned, which is found in most of the lesser lakes in the State of New York, also in Lakes Memphremagog and Champlain. It is known among naturalists as *Salmo Confinis*, and usually weighs from eight to ten pounds.

Stock Department.

The Earl of Radnor's Breed of Pigs.

The wide diffusion of the hog in a state of nature, is doubtless an indication of its general usefulness and adaptation as food for man. Through almost every part of the world explorers have traversed, this valuable animal has been found, and among the numerous islands of the Pacific, the first voyagers discovered it in immense numbers. The pig, however, appears to not have been indigenous to the North American Continent, but owes its introduction to the original European settlers. It has proved wonderfully adapted to the varying soils and climates of this immense region, where it is reared in great perfection, and to an extent, perhaps, not surpassed in any other portion of the globe.

The old English native hog was a large and extremely coarse and ferocious animal; with a curved back, elongated snout, flop ears, and strong bristles; of very slow growth, and an exceedingly hardy constitution. His form and size became by degrees,

It is of the utmost importance that the breeding of pigs should receive proper attention, as far beyond any other farm animals, they are distinguished for fecundity, and the conversion of various substances, much of which would be otherwise useless or a nuisance, into meat of a highly nutritious character. The following calculations from Morton's Cyclopadia of Agriculture, (article SWINE,) will not fail to strike the reader:—

“It is certain that none of our domesticated animals will afford such a large amount of food for human sustenance as the pig, in proportion to the readiness and expense with which it is raised, and the time necessary for raising it. The numbers now bred and fed are exceedingly great, and are yearly increasing. There is no class of animals equally prolific that are of any great value to man. Let it be supposed that a sow has her first litter when she is twelve months old; that she has a litter every six months; that she has an average of six pigs every litter; that she is kept in a breeding state till three years old, and then fattened off to average 4 cwt. when killed, and all the pigs to be fattened off by the time they are twelve months old, and to average 2 cwt. when killed: and

Lordship's estate in Berkshire. This breed was originated by the late Mr. T. Moore, of Cofton Hall, Worcestershire, who won many prizes with them at the Worcestershire Agricultural Association, between the years 1814-21. In 1810 Lord Radnor adopted this breed on his home farm at Coleshill, since which it has undergone a steady but marked improvement. At the Royal, Smithfield, and many Provincial shows, it has generally been successful in a high degree. It is now widely distributed throughout the British Islands and the Continent of Europe, and is not unknown, we believe, in the United States, and in the Australian colonies. We are not aware whether it has yet found its way to Canada. If not, it should do so. It is of medium size, colour white, grows and fattens rapidly, and is equally well adapted for pork or bacon. Pigs of this breed will often attain the weight (dead) of 15 stone of 14 lbs. per stone, at 6 or 7 months old. Some of our readers may possibly feel a secret misgiving as to the fidelity of the engraving, and suspect the artist of a little exaggeration. Mr. Moore, the present agent of Lord Radnor, pronounces the pigs to be “admirably drawn.” We have ourselves repeatedly seen specimens of this



greatly modified and improved by crossing with the smaller and more perfect forms of Southern Europe. But it is chiefly to the introduction of the Chinese and Neapolitan races, that the modern improvements in British breeds are to be ascribed. The Chinese pig is rather difficult to rear, and scarcely hardy enough to withstand the damp and variable climates of the British Islands. He fats rapidly and at little cost; the pork is of exquisite quality; but, it being exceedingly unctuous, the bacon is somewhat inferior. The Neapolitan stock is the one from which the most valuable qualities of the smaller breeds have been derived. This breed has a smaller quantity of bone, in proportion to its size, than any other. It has an astonishing aptitude to fatten on ordinary food, comes early to maturity, and the sows are prolific and good nurses. The improved Essex breed is a slight improvement on the Neapolitan, and in external appearance they greatly resemble each other. As the hog is less affected than the other domesticated animals by the locality in which he is reared, and is essentially the creature of artificial feeding, his size and general characteristics are not so dependent on circumstances, and consequently the breeds of hogs have become very much mixed and assimilated

it is a mere matter of calculation to show that there would be at the end of six years, of breeding pigs:—

612.....	2½ years old.
1386.....	2 years old.
3159.....	1½ years old.
7155.....	1 year old.
16,281.....	½ year old.
36,936.....	sucking pigs.

65,529
53,217

118,746 in all, besides the sale of 27,508 cwt. of bacon; and besides 16,281 hogs half year old, and 30,936 sucking pigs.”

This is of course a ludicrously extravagant calculation, but it shows how very rapidly pigs can be made, under careful management, to produce their species, and though they may not come up to the estimate above, but they may approach it. It is this view of the subject that so highly enhances the importance of the breeding, rearing, feeding, and general management of pigs.

The accompanying illustration, taken from a steel engraving in the last number of the *Farmers' Magazine*, faithfully illustrates one of the most approved modern breeds, commonly known as “Lord Radnor's,” or the “Coleshill Pigs,” after the name of his

breed at the Royal and Smithfield fat cattle shows, soon after it came into the possession of the noble Earl, and can testify to their very great merits, and assure our readers that “seeing is believing.” We do not advocate, however, even in pigs, carrying the fattening process, to such almost painful extremes as to render animals, in some respects, absolutely ugly in appearance, and but little short of unwholesome as human food. We have seen specimens of this and other breeds—such as the Essex, Suffolk, Berkshire, &c., so excessively fat that the animals appeared to have scarcely eyes or legs, and consequently could hardly see or stand. These facts show, however, what can be done with animals of the modern or improved breeds. Speaking generally of such breeds as the Coleshill, improved Berkshire, Suffolk, and Essex, there is not perhaps much to choose between them. Of the former the writer of the article, Swine, in *Morton's Cyclopadia*, remarks: “The fecundity of the sow is astonishing, and the early maturity of the progeny is unexampled in an economy. Pigs fed at a very early age attain to great weight, and many splendid specimens, in proof of this assertion, are shown at almost every large agricultural gathering. The most prominent in this respect, as well as being most numerous attended, is

the Christmas Show of the Smithfield Club in London. Every year many wonderful instances of the aptitude of these most useful animals to grow, increase, and fatten, are there exhibited, and did they not rest on undoubted authority, the record of age, and the corresponding weight of the animals would be deemed incredible. We might name, as illustrating this, examples of the highly celebrated Coleshill breed,—bred by the Earl of Radnor, on his estate at Coleshill, Berkshire. They are very valuable specimens of the pig, taken either for pork or bacon. They possess all the requisite qualities for attaining the most profitable maturity at an early age, and they are bred of sufficient size and expanding growth and proportions as to equal any in the adaptation for bacon pigs. Their colour is white; their hair rather strong and thinly set; bone fine, in proportion to their size; head small and pleasing; general form very good, being square, compact, broad and proportionate, though large in frame; their fattening propensities almost unequalled. As there are, however, many other breeds of pigs of equal merit, it may appear somewhat invidious to select any one particular breed for especial commendation." We have heretofore illustrated and described most of the improved modern breeds of pigs, and are glad to be enabled to present our readers with an engraving and account of the justly celebrated Radnor or Coleshill pigs.

Judging Sheep at Shows.

The following suggestive extract on this subject, is from a paper recently read by Mr. Davidson of Blandspout, before the Athy Farmers' Club. Flockmasters and others interested in sheep-husbandry, will do well to give it an attentive perusal.—

"I consider this a fitting opportunity to make some remarks on the judging of sheep; for this is the first thing a young sheep-breeder should learn, and I believe it is the most difficult lesson in connection with farming that the beginner has to learn, as there is no more difficult animal to judge belonging to our general stock than the sheep; and I have often heard men say that it is a thing that cannot be learned by a man in the after part of his life. I have sometimes been amused to see the careless way in which sheep are judged at the various shows. I have seen it so simply passed over that in a week after, when the same sheep met in another yard, held by different herdsmen, the same judges reversed their decision of a week previous. It is impossible that any person can tell all the different points of a sheep by merely looking at him, the same way they would look at a race horse about to start for a race, when they can see every bone, muscle, and sinew in his body. But what would they know of this horse if he was all covered but his head with a rug with wool on it six inches long? No doubt, they handle the sheep in a kind of sham way. They will pull off their glove scientifically, and press their fingers so gently on his fiddle-back, just as if they were going to feel what sort of wool was on the back of a hedge-hog. Then they take a circuit round him, whether to get a side view at him or save their trousers I don't know, and lay their finger and thumb round his neck, and after knowing that he has a back bone and neck, give their decision. No wonder that such gentlemen, judging, as they call it, should leave the competition in the sheep classes all in the hands of a few breeders; as many farmers, who have a good, useful sheep, fed in a profitable way, will not bring him out, as they know well that the sheep that has been house-fed, pampered, and sheeted is sure to take the eye of such judges. It is this kind of judging that has left the Leicester sheep of England and Ireland at the present time all but despised by the men who have rents to pay. The breeders of these sheep latterly bred them for showing, and lost size, constitution, and wool—the three things indispensable in a profitable sheep. Notwithstanding all that is written about the improvement of the Leicester sheep of to-day, I have no hesitation in saying that they are not so useful a sheep as they were ten years ago. This is caused by the type of sheep selected by the judges for prizes at the shows. Not long since I heard a very extensive sheep owner remark, while looking at a prize sheep, that he was the nicest sheep ever he saw; "but that is his fault," he said. "Are you thinking of buying him?" I asked. "No," said he; "I would not use him to fifty ewes if I got £100 for it. I have lost a great deal by using the like of him for some years." Then, why does this sheep get a prize? Because he was bred, fed, and kept for showing. But this is like farming that does not pay—all humbug. The breed-

ers of the Leicester sheep in Scotland, rather than spoil their large, hardy, rent-paying sheep, stopped showing, preferring to forego the honours of the show-field before they would please the taste of the judges; the consequence was that they got a separate class of their own for their large Leicesters. And at present it is impossible to breed a ram to take prizes and also sell well, as the farmers are too wide-awake now to be deceived by a flea on a jelly-bag. Most of shows have a rule that no names are to be branded on the sheep. What is the use of this when the herdsmen are allowed to stand and hold their own sheep? In many cases the owner's name might as well be printed on the sheep's back. Why not turn the rams into a ring and let the judges stick first, second, and third on three of their backs? No fear they will soon find an owner, and this would show what sort of metal the judges are made of."

A Horse's Petition to His Driver.

Going up hill, whip me not.
Coming down hill, hurry me not.
On level road, spare me not.
Loose in stable, forget me not.
Of hay and corn, rob me not.
Of clean water, stint me not.
With sponge and brush, neglect me not.
Of soft dry bed, deprive me not.
Tired or hot, wash me not.
If sick or cold, chill me not.
With bit and reins, Oh! jerk me not.
And when you are angry, strike me not.

Wheat and Meat—Comparative Exhaustion.

Dr. Voelcker replies as follows to some recent inquiries from Alderman Mechi:

1. Assuming your animal to contain 75 per cent. of water, which I think is not far from the truth, we have 25 per cent. of dry matter in meat (live weight). In wheat there is only 10 to 12 per cent. of water; nevertheless, the 25 per cent. of dry animal matter contains quite as large a proportion of valuable mineral matters as the 88 or 90 per cent. of dry matter in wheat, and certainly more nitrogen. If the nitrogen in the meat and in the wheat is considered to have been taken entirely from the soil, the removal of a ton of wheat will not exhaust the land quite so much in available, that is, active nitrogen, as one ton of meat. One ton of wheat contains a smaller amount of valuable mineral matters, and less active nitrogenous matters, than one ton of meat (live weight), and if these mineral and nitrogenous matters, containing nitrogen, are restored again to the land, a ton of meat will give to the land more essential fertilizing matters than one ton of wheat. The difference in the exhaustion of the land by the removal of valuable mineral matters and active nitrogen in one ton of meat and in one ton of wheat, however, is not great, but it is certainly somewhat greater in the case of meat than in the case of wheat.

2. I hope you will have been able to make out my last note, and bear in mind that my calculation is based upon the supposition that the animal is reared from its earliest days of existence on the farm from which it is sold three or four years afterwards in the shape of butchers' meat. The question of greater or less exhaustion of the land by the removal of one ton of meat or one ton of wheat assumes quite a different aspect if animals are merely got ready for the butcher, and bought in when nearly full grown. Such animals return, speaking roughly, at least three-quarters of all the manurial materials which they take from the land in the shape of food; the increase in weight of the animal is chiefly derived from the constituents of food which the plants obtain wholly from the atmosphere. Looking at the question in this point of view, a ton of wheat exhausts the land at least three times as much as a ton of butchers' meat.

A Virginia farmer strongly recommends boiled peas as a feed for cows and hogs, thinking that two bushels of peas are worth more than three bushels of corn.

Hogs should be well fed now. It will pay better to buy feed even, than to allow them to go without a proper amount of food. Hogs fatten and grow much more rapidly in warm weather than in the extreme-cold of mid-winter.

Long Woolled Sheep in the United States.

THE long wools are deservedly attracting the attention of American flock masters. One telling fact, viz:—the sale of a thousand pounds of long wool, at 70 cents per lb., by Mr. E. Wallington, of Saline, Mich., has recently been much noticed by the agricultural papers on the other side of the lines. We find the following statement in relation to this flock in the *Western Rural*:—

"Prior to last year, Mr. Wallington had been engaged largely in the growing of the Spanish Merino sheep, keeping upon his farm an average of over 500 of the fine-wool breed. His land being poor, and the Merinos not doing at all well—far from being profitable to him—he determined upon at least a trial of the long wools. He accordingly last year sold off his entire stock of the fine-wools and made purchases in Canada, from reliable breeders, of a considerable flock of the Leicesters and Cotswolds, and now has about 400 of these sheep, including the present year's lambs. Some of the lambs at 4 months old weighed from 75 up to 88 lbs. each. The sire of these lambs was bred by George Miller, of Canada, and took the first premium at the Provincial Fair at London last season; at which time he weighed 328 lbs. Mr. Wallington is highly gratified with the result of his experience, and is confident that those having low lands, who have failed in growing fine wools with profit, will find it to their decided advantage to substitute the long-wool breeds. He testifies to their superior adaptation to low lands, their easy keeping, their hardiness of constitution, etc. The sale of 1,000 lbs. of his wool (the sheep averaging 6 lbs. per head), at the round price of 70 cts. per lb., while fine wool was bringing an average of only 55 cts., is good evidence of the profit of the breed. Leonard Wallington, of Lodi, bought, last October, of F. W. Stone, Canada West, a full-blood Cotswold ram, from Stone's imported ram, paying \$80 in gold for him. He was two years old last spring, and sheared 14½ lbs., the staple averaging 10½ inches in length. He was offered 80 cts. per lb. for the fleece, but intends to have it knit into socks, in which form it is said one pair will outwear three made of fine wool yarn. Two lambs, of this ram's get, weighed 40 lbs. each when 30 days old.

Mr. McMillan, of Green county, Ohio, a breeder of Durham cattle, recently weighed fifteen of his cows. The largest weighed 1,920 lbs., the smallest 1,450 lbs.; average of the fifteen 1,683 lbs.

EAR-MARKS KILLING SHEEP.—W. M. HOLMES, Greenwich, N. Y., writes the *Rural New Yorker*:—"A man lost a sheep which had a metallic ear-mark in. After it had been dead a couple of days, he cut out the ear-mark and carried it in his pocket a week or more, and finally put it into the ear of a good, healthy yearling ewe, and it killed her in three days. I presume if the mark had been washed or soaked in vinegar or any acid, it would have been harmless."

A SHEEP WELL WASHED.—Some years ago, when the temperance move was carrying all before it, there resided in Tufstonboro' a hard old toper, who had drunk blue-ruin enough, some said, to swim in. It required considerable persuasion to get him to sign the pledge, and it was in this way:—That he should not drink any, except at sheep-washings, when it was customary for strictly temperance men to imbibe a little taste of the "critter" to drive away the "rheumatiz." Well, time wheeled away, and, week after week, he was observed to be just about as far over the seas as usual—and on being reminded of his pledge he remarked,—"I wash my old black sheep every week."—*Mirror and Farmer*.

RESIGNED ABOUT HIS SHEEP.—We are often told to "make the best of a bad business," but we have rarely met with a better example of doing so than this, which we find in the "Drawer" of a recent *Harper's Monthly*: The late captain G—, of Vermont, was satisfied. He was one of the early and most successful breeders of merino sheep in this part of the State. He had a large native cosset that he valued highly. His son came in one morning and told him that the old cosset had twins. Captain G— said "he was glad; she could bring up two as well as one." Soon after his son reported one of the twins dead. Upon this he said "the one left would be worth more in the fall than both." In the afternoon the boy told his father that the other lamb was dead. "I am glad," said he; "I can now fat the old cosset." The next morning the son reported the old cosset dead. "That is just what I wanted; now I have got rid of the breed!"

Veterinary Department.

Capital Operation in Veterinary Surgery.

Dr. Cresser, of Canaan Centre, in the State of New York, reports the following operation in Veterinary Surgery, in the *Country Gentleman*:—It is of interest, not only to the comparative anatomist, but to the general reader, and indeed to every practical farmer throughout our land.

A colt, belonging to Mr. George Wheeler, of Canaan, N. Y., was foaled the 10th of June with an inguinal hernia on the left side—breach in the groin, so called—of the size of a four quart measure. I examined the case with Albert Brainard, E. q., a well known and reliable farrier of this place, and we found, by careful manipulation, that the breach, or, more explicitly, the *crenation*, could be readily reduced by placing the animal upon his back, and that a large and well defined aperture in the parietes of the abdomen could be clearly detected, even through the integument: and as the tumor, so called, would return the moment the colt was on his feet again, we advised an immediate surgical operation as the only possible means of saving the afflicted creature. But it was thought best, by some, to try the compress; but having utterly failed to accomplish the desired object, after repeated trials, it was accordingly decided, as the last resort, to use the knife.

The colt was placed on his right side, and Mr. Brainard administered chloroform from the sponge, using about an ounce and a half, which produced complete anaesthesia in about five minutes. Then, turning the animal upon his back, and having him well secured, I made a free but careful incision through the skin, of about seven inches in length, and with the probe-pointed bistoury and grooved director, I divided the superficial fascia and fascia propria of the external oblique muscle, coming directly upon the naked bowels; and, having pressed down the intestines into the abdomen with a large sponge, I found that this opening was six inches long, passing directly through the *obliquus externus*, *obliquus internus*, and *transversalis* muscles, and their *aponeurosis*, which, conjointly, form the anterior wall of the abdomen. This aperture began near the insertion of Poupart's ligament into the spine of the os pubis, at the space known as the *external abdominal ring*, and it passed forwards and outwards, thus obliterating the *inguinal canal* and *internal ring*; and yet there were no signs of recent laceration, since the margins of the opening were regular, and bound over with the *aponeurosis* of the external oblique muscle.

The pathology of this congenital malformation is very interesting; and since we cannot suppose that it is a case of *direct inguinal hernia in utero*, of such prodigious size, caused by absolute violence, we must look to the morphology of the parts in question, for a more philosophical explanation.

The external abdominal ring in the horse is formed by a separation of the longitudinal fibres of the aponeurosis of the external oblique muscle, as they go to be inserted into the os pubis, thus forming a triangular opening the same as in man. These two pillars of tendo muscular fibres are bound together a short distance from their insertion by transverse fibres, known as the *intercolumnar fascia*, which bounds the external ring anteriorly, and forms the outer wall of the inguinal canal, which connects the outer with the inner ring.

The internal ring is formed by the separation of the aponeurotic fibres in the conjoined tendon of the internal oblique and transversalis muscles as they go to be inserted into the pubic bone behind the external ring, thus forming the inner wall of the inguinal canal. The pillars of the internal ring are bound together for some distance from their insertion, so that the two rings are not opposite, and hence the canal. But in this case there was an arrest of development early in foetal life of the transverse aponeurotic fibres, which should have bound the pillars of the outer ring together as well as those of the inner ring, and therefore this aperture was the inevitable result of a partial arrest in the embryonic development of the animal. And as the peritoneum was lacerated so that the bowels were protruded without this sac of serous membrane, which lines the internal surface of the abdomen, I denominate this deformity as a case of well marked *Congenital Bubonorexis*.

I incised the edges of this aperture and drew it completely together by taking nine stitches with saddler's silk. Then having removed that large field of integument which had previously formed the outer covering of the hernial sac, I closed up the incision in the skin with five stitches. The wound was kept clean and healthy by the free use of castile soap and a solution of chloride of zinc, one grain to the ounce of water, and thus we got union in the internal wound,

by first intention, and the skin has now nearly closed up by granulation, thus leaving the appearance of the two sides quite symmetrical. The colt has been very bright and lively since the operation, and is now as sportive as though nothing had ever happened to him.

A disease known as the "Spanish Fever" has broken out in Missouri among cattle, on the route travelled by drovers from Texas. It is attended with fever, constipation, and bloody urine; the cattle frequently lingering two weeks or more.

The *Simeoe British Canadian* says that numbers of sheep are dying in that neighbourhood, from some disease with which the farmers are unacquainted. Some attribute it to a gnat, while others contend that it is attributable to some other cause. Mr. Thomas Puzey, of Woodhouse Grove, has lost eighteen sheep with the disease, within the last two weeks; and as almost all were lambs of his superior stock, the loss has been serious. The disease does not appear to be contagious.

BLOODY MILK—CAKED UDDER.—J. D. CURECHILL writes to the *Rural American* that the best remedy he ever saw for bloody milk or caked bag in cows, consisted of half a tea-spoonful of saltpetre given once a day for a week.

The Apiary.

A Dethroned Queen.

THE old queen in my six-frame observatory hive has been quietly dethroned, and a youthful sovereign welcomed as her successor; and as the proceedings were carried on of the bees' own free will, without any intermeddling on my part, I will narrate what came under my observation; and when I state that for nine days the aged and youthful queens, without any manifestations of antipathy, paced the combs, I think even close observers may find somewhat to interest them in the details.

I observed on the 14th of July a sealed queen cell in the above-mentioned hive; it struck me at the time as a rather singular circumstance, no swarms being contemplated, as a large amount of space in the hive remained unoccupied by comb or bees. As the royal brood approached maturity, I looked for symptoms of antipathy on the part of the queen, but no excitement was manifested either by her or her attendants. On the 21st the cell was opened, and as I watched the queen performing the functions of the hive, and an examination of the exterior of the hive failed to reveal a discarded princess, I presumed the effort to raise another queen had been abortive. On the 22nd, however, I was surprised to see a beautiful young queen attended by a delighted and attentive circle, and upon the same comb my old queen also surrounded by a portion of her subjects. This state of affairs of course afforded a fine opportunity for installing a youthful sovereign in lieu of the three-years-old queen, but as the interest in watching the hive would be diminished I left them entirely to their own devices. Affairs remained in much the same position during the next two or three days, when marked inattention was evident towards the old queen, indeed one or two discontented bees even pulled her by a leg or wing; and this soon was followed by an entire disregard of her presence as she wandered uneasily from place to place, not on the comb so much as over and through the clustering bees; at the same time an increased, nay, energetic attention was paid the youthful queen, who, I had reasons to believe, had made a trip and safely returned to her hive. This was verified on the 29th, as she was then laying. I need not say how anxiously I looked for a battle royal, but in this I was disappointed, for though I saw the two queens in close proximity they manifested no animosity towards one another. Upon the 29th the old queen was brought out, but whether she had been encased, or whether the two had met in deadly embrace I cannot say. These two queens having lived together for nine days, and the remarkable instinct and forethought in the bees in raising a young queen to take the place of the old one, and then quietly disposing of her, has been, perhaps, an interesting circumstance in the economy of the bee as ever came under my observation during a period of bee-keeping of about twenty-three years. GEORGE FOX, in *Gardeners' Chronicle*.

Hive Improvements.

To the Editor of THE CANADA FARMER.

SIR,—A person reading THE CANADA FARMER of August 15th, vol. 3rd, would imagine that Mr. Thos. C. Hill, Cape Breton, has felt wonderfully tickled about the Thomas's Bee-hive. There is no doubt but it is a very good hive, and it would be well if all of Mr. Hill's neighbours, that have got the means, would follow his example by importing good moveable comb-hives from Canada West. But if the bees could speak they would say the hive is not perfect. Any one that has noticed a swarm of bees in a natural cluster (I mean when hung on the limb of an apple-tree), would see at once that the cluster was at least half as deep again as it was broad. That is the position they delight to be in, otherwise they would not hang in that way. It is my opinion that most of the hives now in use are too shallow. Some think bees will gather more honey in a shallow hive than a deep one, but the only advantage they derive from a shallow hive is not having so far to climb to unload. Schonswar, Sykes, Taylor, and many others, recommend deep hives for the comfort of the bees. Gelien* recommends large, deep hives, and adds, "if you alter a hive let your alterations answer two or three good purposes. I think I have accomplished two if not the three. 1. Mine is a tall hive. 2. The bees have only a short distance to travel to unload. 3. It is a larger hive than most of those now in use. I manufactured two or three of these moveable-comb-hives about 26 years ago, and I have had no cause to alter the shape since as regards the depth in proportion to the width. But I have added some of Mr. Thomas's improvements, and also some of Mr. Henry's. My hives are now of the following dimensions:—No. 1, (six frames,) 9½ in. wide, 1 ft. 4½ in. long, and 1 ft. 10½ in. deep. No. 2, (eight frames,) 1 ft. wide, 1 ft. 4½ in. long, and 1 ft. 10½ in. deep. No. 3, (ten frames,) 1 ft. 2½ in. wide, 1 ft. 4½ in. long, and 1 ft. 10½ in. deep. The frames can be moved into any of the hives. If I have a large top swarm, I put it into a No. 1. If I have two or three swarms about the same time, I put them into a No. 2. The following year, immediately after casting a first swarm, I move them into a No. 3. Last year I moved one from a No. 2 into a No. 3, and if you had seen the swarm that came from it this year, about the 2nd or 3rd of June, you would have thought it was all right. The principal entrance for the bees is in the centre of my hive, something like a farmer leaving his buildings in the centre of his lot. I have a small outlet at the bottom to allow the bees to drop anything out they wish. In some of the hives I have a case for a thermometer, which I find very useful when I don't wish them to swarm that season.

JOHN JEWITT.

Lucanow, Aug. 30, 1866.

* See his book, the *Bee Preserver*, translated from the French. This valuable little work contains the substance of sixty-four years' experience.

REMEDY FOR THE STING OF A BEE.—The following is a Prussian recipe:—Beat an onion on a hard body to extract the juice, to which add a pinch of salt. Apply the mixture to the sting, and the pain and inflammation will cease.—*Huish*.

BE E MOTH.—I am not a bee man, consequently desire information in regard to the origin of the bee moth. They are very numerous—hundreds to be seen after sundown. Now, what I wish to know is this: What is their natural state—that is, where does the grub live that turns to a miller or moth, and do grubs in a bee-hive ever turn to moths or millers, and, if so, when? I have seen hives of bees entirely destroyed by worms, but never saw a moth. If you or some of your subscribers can give the desired information, you will oblige a reader. A NOTE. *Littleton N. H.* [The bee moth is commonly observed in its larva or caterpillar state, destroying the comb by devouring the wax on which it lives. It afterwards spins a cocoon and comes out in its perfect state, a moth or miller. These moths or perfect insects are not commonly seen, hiding during the day in cracks or crevices, and darting quickly away when disturbed. In the evening the female may be seen flying around the hive for admittance to lay her eggs. The perfect insects are nearly three-fourths of an inch in length, from the head to the tip of the wings, and about an inch and a quarter, more or less, from tip to tip of extended wings. The colour is a dirty light brown.]—*Co. Gent.*

Poultry Yard.

Letter from "Miss A. Leith."

DEAR MR. EDITOR,—Again I sit down to avail myself of the pleasure of writing another letter to THE CANADA FARMER. Since I last did so, I have had pretty bad luck with my little ducks. In the first place out of a brood of 11 there are only two left. I used to feed my little ducks at first with shorts mixed with water. One day I went to the pen I had made for my young broods and found one of the ill-treated ducklings lying dead in the saucer of shorts. The poor little thing had got in and stuck in the slummy mixture. I was just in time to save one of them from the same death another day. The pen they were in was not very secure, having some holes in the sides. One morning I went as usual to feed them, and imagine my horror on perceiving that out of the 10 only 6 remained. I instantly let the remaining 4 out and the mother. That night I set a large rat trap with a piece of cheese in it. But next morning the trap was dragged across the floor and empty. Next night I set the trap with bacon rubbed in rat poison. I did not go out till twelve o'clock next day, and when I looked there sat a skunk in the trap. A gun was brought and he was shot, and I was not troubled with him any longer. After that two of the remaining ducks died. I have been troubled with a fox, which has taken away 1 black hen, a gray rooster and a black Poland, which left 7 little chickens which once were 8 but one of them was drowned in the well. I have on my hands at the present a sick rooster. He was taken ill one morning a little while ago. I left him in the shed for some time and fed him on oat meal and pepper. Then I took him into the kitchen beside the stove and fed him well and gave him *iron water*, and he had a basket full of sawdust and a piece of old carpet on the top to sleep on. He soon improved and I put him out into the yard, every day where he picks about for himself. I take him in at night to the shed. His symptoms were, very shaky legs; a thin body; very pale comb and very pale gills. He is now rapidly improving and getting fat and strong. I have had pretty good luck with my chickens; I have got just 20 chickens and 12 ducks. Pray, Mr. Editor, what is a good way to prevent hens sitting that you don't want to sit? I keep shoving mine off the nest till they get sick of it, and leave the nest. I shut up some ducks to cram for killing, but they would not eat, so I let them out again. How can you tell the different breeds of hens one from the other? I have a lot and I don't know what breed they are. When you want to kill some ducks for dinner and want to kill the drakes and keep the ducks, how can you tell them apart? I do not think the green feathers at the side are any mark that they are drakes. Pray, dear Mr. Editor, let me know in the next batch of CANADA FARMERS you send me.

Yours truly,

ALMA LEITH.

The Hermitage, Ancaster, August 29, 1866.

NOTE BY EDITOR CANADA FARMER.—Our young friend will not find it all success in poultry-keeping, but with care and attention will accomplish much. In reference to her enquiries we would say: 1. There are various ways of curing hens of a determination to sit. Confinement in a strange pen or dark box for a short time will often do it. We have seen it recommended to shut them up all day in a tub with an inch or two of water on the bottom, putting them on the roost at night. If not cured the first day, repeat the operation. They will soon be glad to stand on their feet. 2. It would be a long story to tell how to distinguish the different breeds of fowls from each other. Probably Miss A. Leith's "lot" are of no particular breed, but of mixed kinds. The Cochins, Brahmas, Dorkings, Spanish, Polands, Hamburgs, &c., have all their distinctive marks. Most of them have been described in back numbers of THE CANADA FARMER. A good poultry-book would tell our young friend all about them. 3. The curling up of the tail-feathers is a sure mark of the drakes.

New Way of Paying Subscriptions.

THE following is an amusing account of the way a farmer was taught how cheaply he could take the paper. The lesson is worth pondering by a good many men "we wot of."

'You have hens at home, of course. Well, I will send you my paper for one year, for the products of a single hen for one season; and the proceeds. It seems trifling, preposterous, to imagine the products of a single hen will pay a subscription; perhaps it won't, but I make the offer.'

'Done,' exclaimed farmer B., 'I agree to it,' and appealed to me as a witness of the affair.

The farmer went off apparently much elated with his conquest; the editor went on his way rejoicing.

Time rolled around, the world revolved on its axis, and the sun moved in its orbit as it formerly did; the farmer received his paper regularly, and regaled himself with the information from it, and said he was surprised at the progress of himself and family in general information.

Some time in the month of September, I happened to be up again in the office, when who should enter but our friend farmer B.

'How do you do, Mr. B?' said the editor, extending his hand, his countenance lit up with a bland smile; 'take a chair and be seated, fine weather we have.'

'Yes sir, quite fine indeed,' he answered, and then a short silence ensued, during which our friend B. hitched his chair backward and forward, twirled his thumbs abstractedly, and spit profusely. Starting up quickly, he said, addressing the editor, 'Mr. D., I have brought you the proceeds of that hen.'

It was amusing to see the peculiar expression of the editor, as he followed the farmer down to the wagon. I could hardly keep my risibles down.

When at the wagon the farmer commenced handing over to the editor the products amounting to eighteen pullets, worth 12½ cents each, and a number of dozens of eggs, making in the aggregate, at the least calculation, one dollar and fifty cents more than the price of the paper.

'No need?' said he, 'of men not taking a family newspaper, and paying for it too. I don't miss this from my roost, yet I have paid for a year's subscription and over. All folly sir; there is no man but what can take a newspaper; it's charity you know commenced at home.'

'But,' resumed the editor, 'I will pay for what is over the subscription, I did not intend this as a means of profit, but rather to convince you. I will pay—'

'Not a bit of it, sir; a bargain is a bargain, and I am already paid sir—doubly paid, sir. And whenever a neighbor makes the complaint I did, I will relate to him the hen story. Good day, gentlemen.'

AVERAGE EGG YIELD.—In a late number of the *Country Gentleman* a poultry raiser said that from 35 to 40 eggs a year, was the best average he had been able to get from about a dozen hens. This slander on Miss Biddy's character brought several champions at once to their feet. One gentleman in Ohio has 30 hens, which in seven months from January 1st, had averaged 71 eggs. Another correspondent had picked up 1,510 eggs, from 10 pullets of the white Leghorn variety, from the first of last September, to the first of July this year, or 151 each in ten months. Still another, from 10 Brahmas, has had 738 eggs, or nearly 74 each, from March 1st, to July 31st, beside raising 60 chickens.

COERCING HENS.—A lady correspondent of the *Mobile Advertiser*, writing from Kansas, relates the following eggstraordinary circumstance:—

After breakfast, I was surprised to see my landlady go out, and catching her hens, tie each one's legs together, and throw them upon the ground, with "there, be good."

"What did you do that for?" I asked.

"To make 'em lay," she answered.

"Make 'em lay, will that do it?" I inquired.

"La, yes," she said, "didn't you ever hear tell of that before?"

I confessed that I had not. In an hour she went out again, and picked up the hens; sure enough, some had laid, those she let go, and they ran off, not even cackling their gratitude. But those hens which seemed disposed to be contrary, she struck on the back, saying—"You'd better lay—you'd better lay, for you won't go until you do," and in a little while they, too, had recompensed their mistress for feeding them so hountfully. She says she does so every morning, and the hens know well enough that "they have got to lay."

Entomology.

The Wheat Midge.

The common Wheat-midge, (*Cecidomyia Tritici*), is an insect which was introduced into this country some twenty or thirty years ago from Europe, and which, according to returns from the different counties of the state of New York, which were thoroughly sifted and footed up by the Secretary of their State Agricultural Society, destroyed in one single year in that single State the enormous amount of *fifteen million dollars' worth of wheat*. In England the largest amount of wheat it was ever known to destroy in one single year was one twentieth of the entire crop. Such a small percentage as that, American farmers would not think worth talking about; but here the Wheat-midge often takes over half the entire crop. The reason is simple. In England there are no less than three parasitic insects preying upon the Wheat-midge; in this country there is not one, because it wisely emigrated here without its parasites. One would think that common sense would indicate to our Government the wise policy, as a matter of dollars and cents, of importing the parasites, particularly as the whole operation need not cost more than a few thousand dollars. But no. Although this plan was long ago recommended by some of the best entomologists in the country, Dr. Fitch, for example, it has never been adopted, and probably never will be. Why? Because our Legislatures think that insects are such very minute objects, that they are unworthy their notice; forgetting that the plague of flies, the plague of lice and the plague of locusts were three of the worst plagues that God in his wrath sent to afflict the rebellious land of Egypt.

The Wheat-midge itself in its perfect or winged form is a small two-winged fly, shaped much like a mosquito, but considerably smaller, and with an orange-colored abdomen. It comes out in June from under the ground, where it has lain all winter, the time varying a little according to the latitude, and lays its eggs upon the ears of wheat when they are in blossom. These quickly hatch out into the orange-coloured little maggots which do all the mischief, sucking out the life-blood of the future kernel so that it shrinks up to nothing. When well-fed they mostly go underground and construct a very filmy cocoon which adheres strongly to the surrounding earth, and inside which they transform next spring into the pupa state. But a few remain in the ear and construct their cocoon there, which fits so closely to their bodies, that it is only visible where it projects a little at each end, the cocoon itself being transparent and finer and more filmy than the most delicate gold-beaters' skin. The practical inference to be drawn therefrom, is that when farmers are cleaning wheat, which is infected or suspected of being infested by the Wheat-midge, they ought always to burn up or otherwise destroy the "tailings." For these "tailings" will doubtless contain many of the larvae that have staid in the ear, which, if not destroyed, might hatch out next season into the perfect fly and propagate the breed.—*Practical Entomologist*.

THE SPARROW V. THE CATERPILLAR.—The *Haddington Courier* says: "A circumstance has come to our notice which forcibly illustrates the utility of our small birds in the economy of creation, and the folly of seeking to extirpate them. A gentleman in the county who has a choice variety of gooseberry bushes, apprehensive of the visits of the sparrow tribe, and of the damage that would ensue to his fruit, took the trouble and expense of getting a stout wire awning thrown across that part of the garden where his cherished plants were located. He anticipated a splendid crop as the result of shielding his fruits from the attacks of Master Sparrow and his companions, but was doomed to disappointment. He had checked the little birds, but in doing so he had given a fair field for the ravages of the caterpillar, and at the maturing season he found, to his no small annoyance, that both leaf and fruit had disappeared. This little incident adds another proof to the many that the small birds are, after all, the best friends that the gardener has. They no doubt help themselves liberally to a share of the best, but, in so doing, give a valuable equivalent in helping to keep down the numbers of one of the most destructive pests the gardener has to contend against."



YORKSHIRE BOAR WANTED.—A correspondent asks:—Can you or any of your readers inform me where I can get a thorough-bred Yorkshire boar, about 2 months old? Address, box 32, Princeton, C.W.

THE YIELD OF A SINGLE GRAIN OF RYE.—John D. Van Sickle, of Jersey Settlement, Ancaster, informs us that he found the produce of a single grain of rye, grown on his farm the present season to be, ninety-seven ears, containing in all no less than 4,640 grains.

FALL EXHIBITION.—“J. B. Aylsworth,” sends the following succinct notices for publication:

Addington County, at the County Show Buildings, Newburgh, on Tuesday, Oct. 16th.

Camden Township at Clark's Mills, on Saturday, Oct. 13th.

Ernesttown branch, at Odessa, on Thursday, Oct. 11th.

PROFITS OF FLAX.—On this subject Mr. J. A. Donaldson writes as follows:—“It is gratifying to know that the flax crop has been remarkably fine this year. The average will be over two tons to the acre with seed on. Mr. Cass, of Bond Head, near Bradford, got pay for three tons and a half to the acre, at \$11 per ton. This will show a yield of \$49 per acre. Over three hundred tons have been taken in at the Bradford new Flax Mills. Very encouraging for the first year. Prices of both fibre and seed are likely to rule high and will pay the mill scutchers as well as the farmers.”

EXTRACTING PINE STUMPS.—“A Subscriber” makes the following enquiry:—“Can you inform me the best and cheapest way of extracting pine stumps? I have heard of boring holes in them, putting in saltpetre, and allowing it five or six months to penetrate through them, then the stumps are set on fire and they burn out. I would like to hear from any person whether this process is effectual or not, and whether the hole should be stopped up or not after putting in the saltpetre. I have heard that coal oil will penetrate through them and have the same results.”

ANS.—Probably some of our readers may have tried the process above described. If so, we would be obliged by their communicating the results of the experiment for the benefit of “A Subscriber” and others who have pine stumps in their land.

POTATO-DIGGING MACHINE.—John Walmsley, of Berlin, writes as follows:—“In your issue of the 16th of July last appeared a letter from E. Hawell, of London, C. W., inquiring if ‘such a thing as a potato digging machine was manufactured in Canada, and if so, where and for what price could one be got.’ In reply, I beg leave to state that I have perfected and patented a machine for the above purpose, which I propose exhibiting at the next Provincial Fair. Being but recently patented, I have had, as yet, but few opportunities for testing it, and, therefore, cannot speak with certainty as to the amount of work which can be done with it in a day. By those who have examined it, it is pronounced admirably adapted for the work which it is designed to do. It is exceedingly simple in its construction, and its price will range from \$12 to \$15.”

FARMING IN ERIN.—Thomas Young writes as follows:—“Noting the encouragement given by you to communications from the various parts of the country, relative to agricultural matters, and not knowing that the township of Erin has to any great extent been represented in the columns of your valuable journal, it may not be amiss in me to write a few remarks on the crop prospects of the present year. The weather during seed time continued cold and wet, so that the seed was not got in in as good condition, nor the growth at first so rapid as could have been desired; but just when the farmers were beginning to “grumble” came warmth, accompanied by refreshing rains, which entirely changed the face of nature, and tended much to raise the hopes of the husbandmen of Erin. Nor have their hopes been disappointed, as they are now harvesting most beautiful crops. Though hay was upon the whole lighter than last year, and fall wheat considerably winter killed, and may not prove very remunerative; still spring crops, of which by far the greatest breadth is sown, are excellent. Spring wheat, barley, oats, and peas, are all raised to a considerable extent, and will this year produce considerably over an average yield. Potatoes and turnips, too, from present appearances, will be fully up to the average. Perhaps a better display of roots,

which is every year made at our Fall Agricultural Show, is not to be met with in the Province. Dairying is not carried on to any great extent, nor are any cheese factories established within the township, nevertheless, we make good cheese, Erin having carried off honors in that class from the Provincial Exhibition.

WOODBURY'S BAG-HOLDER.—“John Mather,” of Gatineau Mills, Ottawa, sends the following note of enquiry:—“I wrote on 27th July last to A. W. Woodbury, London, C. W., and enclosed \$2, requesting him to send me one of the Patent Bag-holders, in terms of notice on p. 315 of your FARMER for last year. There has been no reply from him, and I shall be very much obliged if you will inform me whether Mr. Woodbury is still at London, C. W., and where I can get one of the Bag-holders.”

ANS.—We cannot furnish the desired information, but perhaps the above may meet the eye of some one who can. *Apropos* of bag-holders, the *American Agriculturist* for September, suggests a common flour barrel with the bottom out, and four nails at the top on which the bag is hung, as the simplest method that can be adopted. When the bag is full, the barrel is lifted off, and the operation can be repeated.

SAMPLE OF GRASS.—“A. Kirkwood,” of Ottawa, has sent us a specimen bunch of grass, accompanied by the following letter:

“I send you a sample of the grass known in botanical science as ‘*Muhlenbergia Mexicana*.’ It has such a healthy and vigorous look, when grown on suitable soil, that I have thought of asking you to examine it with a view to urging its cultivation, so far at least as to determine its merits as a forage crop. The specimen now sent was grown on upland sandy loam, retentive of moisture. There is no doubt, however, it will flourish well on deep, rich bottoms that are not too wet. As experimental agriculture frequently leads to useful as well as beautiful results, it is to be hoped some of our farmers will submit it to such treatment on a larger scale than your humble servant.”

NOTE BY ED. C. F.—The sample of grass referred to in the above communication duly arrived, and is a fine bunch, being some four feet in height, nearly a foot taller than this species usually grows. In appearance it somewhat resembles fowl meadow grass. It has an erect stem, and is considerably branched. It is a perennial plant, and flowers in August. Farmers and gardeners often regard it as a troublesome weed, especially on low grounds where it is most apt to be found. It is not easy to eradicate its spreading roots. Cattle eat it readily, and as it flowers late in the season, it must be of some value as a forage plant, of how much we are not sufficiently acquainted with it to determine. Further experiments by our correspondent and others might prove useful.

The Canada Farmer.

TORONTO, UPPER CANADA, SEPT. 15, 1866.

Preparations for the Provincial Show.

The Crystal Palace and other buildings, together with the grounds are undergoing a variety of improvements in view of the approaching exhibition. Besides the necessary repairs, a number of additions are being made to the facilities that previously existed for displaying the agricultural and other products of the country to advantage. A large open shed on the north side of the palace, heretofore used as a shelter for machines, has been enclosed, and fitted up as a hall for agricultural and horticultural produce, other provision being made for the carriages and light machinery. A junction building 60 by 64 feet has been erected between the Crystal Palace and the horticultural hall to be used as a fine arts' gallery. Sheds for poultry; mowing, reaping and threshing machines are also in course of erection. Additional accommodation for sheep and pigs is being provided. A stand for the use of judges and directors has been built in the centre of the main horse-ring. The palace and fine arts' gallery are being handsomely coloured, and it is intended to have the fountain in the palace in good working order and full play during

the exhibition. Proper offices are being fitted up for the Secretary, Treasurer and others. Feed barns for cattle, water pipes and other conveniences have been provided. Exhibitors and visitors will find things in a much more commodious and effective state than has been witnessed on any previous occasion of the sort. The Northern Railway Company are making arrangements for the safe and convenient conveyance of passengers to and from the city. While these preparations are going forward here, we hope that throughout the country, all who can possibly attend will make their calculations and lay their plans in such a manner, as not to fail of being among the patrons of what bids fair to be the best exhibition we have ever had.

Tidiness on the Farm.

By no class of men is the useful maxim, “a place for everything, and everything in its place,” so frequently disregarded as by farmers. You enter a merchant's store, and are struck at once by the evidences of order and method, everything being, of necessity, so arranged that he can lay his hand upon the precise article needed, without the delay of an embarrassing and vexatious search. In the office of the professional man, and in all departments of business, the imperative necessity for order usually secures it. But with the farmer the case is often notoriously different. His farm-yard, his barn, and every part of his premises, are often conspicuous by the entire absence of neat arrangement and general tidiness. The waggon and implements, sometimes even those of an expensive kind, whose cost might be supposed to induce a little extra care, are exposed to all varieties of weather, loaded with dirt, and out of repair. The buggy, appropriated, perhaps, as a convenient roosting place by the poultry, is covered with an unseemly coating of mud and other defilements, which completely hide the original paint and varnish. The smaller articles are scattered all over the premises. The grain-bags, in holes and without strings, have to be hunted up every time they are needed; and each muster presents an unaccountable diminution of numbers.

Now all this is not only offensive to the eye and to good taste, but is thriftless and wasteful. A want of order and method is to farming, as to every other trade, a cause of serious loss. The farmer will tell you, in excuse for the state of things we have indicated, that he has no time to be particular. But, if he judged rightly, he would find that, looking at the matter only in that light, he loses more time by his negligence than it would cost him to attend promptly to needed repairs, to arrange his tools and implements, and keep everything in its proper place. How often in every such farmer's experience is a whole morning or more lost by the neglect, in the first instance, of a little timely repair. Or how often does the clumsily patched up implement give way, and occasion repeated delay, spent in tramping up some inefficient expedient. How often is time lost in a vexatious search for some tool, misplaced when last used. If there were only one man at work, he might possibly remember where, for his temporary convenience, or in his hurry, he threw down the article as soon as its immediate purpose was served; but, as on almost all farms, several hands are employed, the probability is, that when next the thing is wanted, it will be by some other party, who will be totally at a loss where to find it. Depend upon it, the time spent in at once restoring an article, after using it, to its proper place, will, in the end, be time saved, that the delay incurred by a thorough and efficient repair, at the outset, will obviate many subsequent and more serious delays; and that the hours devoted to keeping implements clean, and in good working order, will tend materially to their durability and efficiency, and ultimately prove to be true economy.

The importance of cleanliness, where live stock is concerned, can hardly be exaggerated. The stith

that too often accumulates in hog-pens and stables, is not only unseemly and disgusting to all concerned, but exerts a most injurious influence on the health of the animals. The plea of want of time to attend to the niceties of fancy farming in this particular, only betrays the so-called practical farmer's ignorance of his business; and the neglect of scrupulous cleanliness in regard to his stock will damage his pocket more than his personal refinement. The farm-yard, sheds, and places appropriated to stock, should be kept in such a condition that the owner need not be ashamed to invite a lady to inspect his premises.

The thrifty, careful farmer, whether he be a man of refinement and education, or not, will see to it, on the score of his interest, if for no other reason, that his implements are preserved in good repair, and bestowed in their proper places; that the roofs are weather-tight; that his stacks are neatly finished and thatched; that there is no wasteful scattering of fodder and litter; that his stock are sheltered, and duly cared for in the essential matter of cleanliness; and his farm will present, in a thousand nameless but not unimportant particulars, the indications of a tidy proprietor. A stranger may frequently give a shrewd guess in regard to a farmer's success, from the aspect of his farm-yard; for, a habit of negligence in one department is very apt to extend to others: an untidy premises will generally be evidence of slovenly and unprofitable mode of farming.

Harvest Grumbings.

Some complainings have reached us to the effect that our estimate of the crops in last issue was too sanguine, but they are sustained by references to exceptional cases only, for which full allowance was made by us. We believe that, taking the country as a whole, a most bounteous harvest may be reported. Winter-kill, mildew, and excessive wet have done damage here and there, but we are glad to know that in the aggregate the crops are most abundant. People who cannot grumble about quantity, complain as to the quality of their grain, and those who cannot grumble as to quantity or quality, croak about market prospects. At present, these do not indicate high prices, but it is impossible to judge at the beginning of the grain-buying season, and by the figures then reached, what the market will be bye-and-bye. There is little doubt that at any rate barley will command a better price than it does at present. Unless there be special cause for a contrary effect, abundant crops and moderate markets must be expected to go together. It is proper to remark that our account of the harvest had reference mainly to Canada West. The wet August of 1866, following a cold and rainy season, only broken by the extremely hot weather of July, has been disastrous to the crops in some parts of Lower Canada, particularly in all the region north of Montreal.

Working of the Wool Tariff in the United States.

AMERICAN sheep-men are beginning to find out that the high duties on foreign wools, are working for the benefit of dealers and manufacturers rather than flockmasters. An Illinois wool-grower writes a spicy letter on this subject to the *Ohio Farmer*, from which we extract the following:

"We know that all New England, from Congressmen to old maids, are all daubed with the same manufacturing stick. To those who are willing to see, it is just as plain as the nose on a man's face, that they very much preferred we should not get the duties we wished on foreign wool. To some of our folks who were willing to vouch so strongly for the good intentions and good faith of our allies, it comes hard to acknowledge that we have been sold. What else could we expect from our natural enemies? Can't any man see that it is no use talking, or not least acting, on the assumption that buyers and sellers are natural allies? I suppose they might be were the Millennium arrived, but not so long as human nature remains as it is in the year 1866. What par-

ticular body of men has been taking every advantage of wool growers, and what class is it that we have all had to watch for the last forty years? Every man engaged in wool growing for twenty years past is cognizant not only of their one-sided tariffs but also of their sham wool sales just previous to clipping time, their suborning of the Eastern press as to quotations, and ruses as to the price of wool, etc. They have eternally tried to cheat us out of as much of the worth of our wool as possible. They are pretty men to assist us in laying duties whereby we may get a good price for our wool! Fugh! It makes me sick to think men should so far forget what human nature is as to think the wolf is going to exert himself to find a nice tit-bit of grass for his very particular friend and ally—the lamb."

BOARD OF AGRICULTURE.—This body met in their board room, corner of Yonge and Queen streets, on the 5th instant. They also visited the Exhibition building and grounds to inspect the progress of the improvements being made there. These were found highly satisfactory, the members expressing themselves specially pleased with the addition being made for the picture gallery, which is expected to prove one of the most attractive sights of the coming show. The excellent arrangements made for lighting this portion of the building are particularly noticeable, and cannot fail to give satisfaction to the lovers of a branch of art hitherto but poorly treated from the want of room. A few additional hencoops were ordered for the better accommodation of the representatives of the poultry tribe. The improvements at the Exhibition grounds are under the direction of Mr. James Smith, architect, to whom credit is due for the style and progress of the work going on. The business transacted in the board room was principally of a routine character, the appointment of judges and the like; the principal portion of the other arrangements being already completed. We are happy to learn that the prospects for the success of the coming Exhibition are exceedingly favorable. About six thousand entries have already been made.

Agricultural Intelligence.

Agricultural Tour in Carleton and Russell.

To the Editor of THE CANADA FARMER:

Sir,—Having recently returned from an agricultural tour in the Counties of Carleton and Russell, I send you a few jottings by the way that may be of interest to some of your readers.

I addressed you last from Arnprior, a new and rapidly improving village on the Brockville and Ottawa Railway, in the extreme eastern part of the County of Renfrew. Here no public meeting was called, in consequence of the notice arriving too late; but I had some interesting conversation with the Secretary and several members of the McNab Agricultural Society, which is in a flourishing condition, embracing a large township, containing much good land, and, in some places, well cultivated. Mr. McLachlan has recently erected in this village a large saw-mill, with all the modern improvements, and is doing an immense business. The valley of the Madawaska is celebrated for its large supplies of pine timber, and contains areas of good land, more or less extensive, well adapted to agricultural purposes.

I entered the County of Carleton immediately after leaving Arnprior, and attended a meeting of the members of the Township Society of Fitzroy, at Moore's Corners, in the evening. My usual practice is to introduce several of the more important practical questions in a preliminary address, most of which, and sometimes other matters, elicit questions and discussions that form the most interesting and useful features of the meetings. I went through a fine section of land in this township—the crops are heavy, and the cultivation above an average. Mr. Riddle, Treasurer of the Society, pointed out to me several instances of underdraining on his farm that had been attended with the greatest advantages. Mr. Riddle has one of the best farmer's gardens that I have seen

for many a day, and the flower department is most creditable to the taste and industry of the female portion of his family. How much might be done to adorn our country homes, and promote domestic comfort, if more attention were generally given to these things! Improvement, in some degree, I am happy to believe, is going on in this direction.

I next attended a small meeting in Carp Village, in the Township of Huntly, and must express my obligations to Mr. McBride for the pains he took in showing me the country, and introducing me to farmers, &c. In this way, one enjoys excellent opportunities both of acquiring and imparting information. The next day, Mr. McBride drove me to the adjoining Township of March, where we had a very interesting meeting. I was much gratified by my intercourse with Mr. Monk, and other members of the Society, and regret that my time was necessarily so short in this township. Both Huntly and March contain a considerable amount of first-rate soil, adapted alike for cultivation and pasture; but in places the rock comes near the surface, and sometimes actually forms the surface, rendering cultivation difficult or impracticable. Mr. Monk has for the last two or three years sown carrot seed late in the fall, instead of the spring, with marked advantage to the crop. The seed is sown in drills, and well covered just before the ground becomes permanently frozen, so that germination commences earlier in spring than when sowing is deferred to that season. Certainly, the carrots that I saw were exceedingly vigorous, and the other root crops were promising.

I feel under obligation to Mr. Donald Kennedy, President of the County of Carleton Agricultural Society, for accompanying me to the Township Societies of Nepean, Goulbourn, and North Gower, and the opportunities afforded me of seeing several of the best farms and farmers in the eastern district. At Bell's Corners, ten miles from the City of Ottawa, I met several members of the Nepean Society, and spent two or three hours in very profitable intercourse. I felt particularly gratified with the intelligence and agricultural spirit evinced by several persons at this meeting. It was truly refreshing to meet with an old practical farmer like Mr. John Robertson, of this place, who combines a knowledge of the science along with the art of his profession to a degree one seldom meets with. I much regret that I had not an opportunity of giving Mr. Robertson's farming operations a minute inspection. His farm, comprising some three or four hundred acres, has been thoroughly underdrained, on the most approved modern principles, and the advantages are apparent in the heavy crops and the thrifty live stock which characterize his system of husbandry. Improved implements, the economising, mixing and judicious application of manures, including the *liquid portion*; rotation of crops, and superior dairy products, may each be said to receive at Mr. Robertson's hands due attention. Such instances of farm management must exert a beneficial influence, by way of example, on a whole neighborhood. Pity they are not more numerous. This society organized a Farmers' Club two years since, and I deeply regretted to hear that it has not been successfully followed up. The papers read and the discussions that followed thereupon, by Messrs. Scott, Harman, Robertson and others, at the first two or three meetings, were of the most useful and creditable character; and I yet hope to hear that the few leading promoters of this society, for the sake of their young men, and the advancement of their agriculture, have not finally abandoned so important and praiseworthy an enterprise. It is because I firmly believe that such organizations are among the essentials in improving our agricultural practice, and elevating the status of our farmers, that I make them a prominent subject in my addresses to the people, and it will afford me the greatest satisfaction to learn that my appeals have not been fruitless. The County of Carleton Society now hold their annual show at Bell's Corners, as that place is now more convenient for the county than Ottawa. A commodious Exhibition building has been erected on grounds permanently enclosed, and the experiment, like all others of a similar character that have come to my knowledge, has proved successful.

In proceeding to Richmond we called upon Mr. Byers, an extensive and successful farmer, whom I regret we did not see. Had time allowed, this farm would have well compensated a minute inspection. I met, in the evening, a number of the members of

the Goulburn Society in the village of Richmond, and spent a few hours in an agreeable manner. The drive from Ottawa to here, about 22 miles on a good macadamized road, is very pleasant; the soil exceedingly fertile, but the cultivation, with, of course, some exceptions, is as yet superficial and imperfect.

Next day I met several members of the North Gower Society, and had a favourable opportunity of seeing the greater portion of this part of the country. The crops were universally heavy, and I think that I have never seen better land in any part of Canada, than the best of deep heavy loam that forms a portion of the before mentioned townships. With clean cultivation, and good management, it will yield the various crops of the farm in great abundance.

The townships of Gloucester and Osgoode belong municipally to the county of Russell. I met a small number of the members of the Gloucester Society at Billing's Bridge on the Rideau river, and spent a few hours very agreeably in conversation on subjects relating to agricultural improvement. It was at this spot that the late Mr. Billings landed from a canoe, near half a century ago, when the entire district was a perfect wilderness. It now abounds with well cleared farms, and comfortable homesteads, having an appearance of neatness and finish, and producing a very pleasing effect. Mr. Donald Robertson, President of the Society, has a well cleared farm gently rising from the banks of the river, commanding from the higher ground beautiful views of Ottawa City, the Parliament buildings, and the range of hills in the distance, situated in Lower Canada. Mr. Robertson being a good practical horticulturist has surrounded his pleasant residence with a garden and ornamental planting, arranged with much taste. Fruit trees, however, except those of the harder kinds, do not succeed well, as a general thing, in this district. The very severe weather in winter and spring, which occasionally occurs in these parts, has a most injurious effect on fruit trees generally. This no doubt arises in part from too extensive clearing away of the natural forest, portions of which ought to be left in certain situations if only for the purpose of shelter. With this view it would be worth trying artificial plantations of deciduous and evergreen trees around the more exposed portions of orchards and gardens, which would doubtless greatly modify the local climate, and prevent, or at least diminish, the destructive effects now so generally complained of.

I next visited the township of Cumberland, and met several of the officers and members of the society at Osborne, a pleasant and improving village on the banks of the Ottawa. There is some good land along the front, and the cultivation is better than many places in the interior. On the opposite side of the river, in the township of Buckingham, plumbago and lead mines are being successfully worked, and promise to be highly advantageous to this part of the country. Mr. Johnson, President of the Cumberland Society, drove me next day to Duncanville, in the township of Russell, where I met some of the officers and members of that society. A wide belt of swamp has to be crossed in reaching this place, where there are yet but few settlements. There is much swamp in this county, but here as elsewhere such land when cleared and drained forms excellent pasturage, and in the higher and drier portions may be profitably put under the ordinary system of cultivation. The whole of this section of country appears to be well watered, abounding in streams of varying dimensions, tributaries of the magnificent Ottawa. Duncanville is a new and thriving village, with considerable water power already made available. I was met here by Mr. Kennedy of Osgoode, President of the county of Russell Society, who drove me to Medcalf, where I spent two very agreeable days. This is a new and rather extensive village, very pleasantly situated, but possesses no water privilege. Mr. Kennedy afforded me an opportunity of seeing a large part of this large township, the southern portion of which has an excellent soil, and the state of cultivation appeared to be above the average. The northern portion has considerable rock and swamp, with intervening acres of good, available land. We had a meeting, comprising about forty persons, in this township. In the midst of harvest and critical weather it is not practicable to get up large meetings, but I had good opportunities of having much personal intercourse with the farmers at their homes, and of forming a correct estimate of the state and wants of agriculture. This section of country possesses great capabilities, and offers many inducements to settlers of small means and industrious habits. The settlements in most parts of this county are only recent, and as the lumbering business diminishes its agriculture must advance; a remark that will also apply to the two other counties through which I have passed. I regret that the able Secretary of the county of Russell Society was from home, and feel grateful to Mr. Woodburn, the obliging Secretary of the Carleton Society, for his friendly

attentions. I must leave for a future communication the consideration of some practical matters that have come under observation in the course of my perambulations.

I will only add that the crops generally throughout my journeys were abundant; hay, in some instances, had been injured by the wet; grain, where very heavy, was more or less beaten down, and consequently somewhat deteriorated; barley, in some cases, has been injured in colour and quality for malting purposes; but on the whole, I trust, no serious and extensive injury has been produced by the unsettled state of the weather. On my return I spent a few days in the county of Prince Edward, where hops are cultivated to a considerable extent. The severe blight of last season, and the equally severe cold of last winter, without a sufficient protection of snow, destroyed a large number of hills, but what survived appear in a healthy, if not a luxuriant state, fast coming into hop, with the prospect of a moderate crop of good quality.

Wherever I go the CANADA FARMER is more or less circulated, and the people appear to appreciate your efforts to supply them with a cheap and first-class agricultural paper.

Yours, &c.,

GEO. BUCKLAND.

Toronto, August 25th, 1866.

The Largest Farm in the World.

I observe a note in your issue of an 8,000 acre farm in Bureau Co., Ill., and of Mr. J. S. Alexander's farm in Morgan Co., Ill., both of which will pass for fair-sized Illinois farms. But the farm which is no doubt the largest cultivated farm in the world, and, I believe the best, is owned and cultivated by M. L. Sullivan, Esq., formerly from the vicinity of Columbus, Ohio, now of Champaign Co., Ill. He owns and presides over 70,000 acres of the best land on this hemisphere, 23,000 acres of which is under fence, and in actual improvement and cultivation; the balance is used in herding.

I will venture the opinion that there cannot be found 5 acres of unserviceable land on Mr. S.'s entire 70,000 acres. Their productiveness is unsurpassed. Almost all of Mr. S.'s farming is conducted by labor-saving machinery, so that it is estimated that, throughout, one man will perform the average labor of four or five as conducted on small farms. He drives his posts by horse-power; breaks his ground with Comstock's "spades;" mows, rakes, loads, unloads and stacks his hay by horse-power; cultivates his corn by improved machinery; ditches any low ground by machinery; sows and plants by machinery, so that all his laborers can ride and perform their tasks as easy as riding in a buggy.

I had the pleasure of being present when he harvested a thousand acres of his wheat; this was done with —'s "Header's"—about eight or ten men and twenty horses cut and safely stacked away about 200 acres a day, and performed the work better than I ever saw it by the old modes. To give all the improved modes of farming employed by this king of agriculture, would require more space than you would like to spare. Notwithstanding all this labor-saving machinery, Mr. S. employs from 100 to 200 laborers, some 200 horses and mules, and a large herd of working oxen.

Not having the exact data before me, I will not venture to give the enormous returns in bushels or tons, of the products of this great farm. Some estimate may be made from the magnitude of the farm, taken in connection with the fact that the quality of the soil is unequaled by the very best Scioto bottoms. *Cor. Cin. Enquirer.*

It is proposed to hold an Exhibition of Merino wool in London, in August, 1867. Competition to be invited from all parts of the world.

A Massachusetts farmer has a cow that gave milk for three years and two months, giving nearly twelve quarts per day.

A New Hampshire man tells the rather large story that he has raised pigs which weighed 400 pounds at eight months old.

The number of reaping and mowing machines manufactured in the United States, in 1864, is said to have been 84,000.

A merchant in Chatham, C. W., has shipped seven and one-half tons of butter direct to Liverpool, Eng., this year.

There were shipped from the depot at Herkimer, N. Y., August 7th, 1,589 boxes of cheese. The average price was about 16½ cents.

An interprising Californian has started for the East with a drove of some five hundred horses of the Pacific slope, said to be very tough and hardy.

The accounts of the harvest in France are not favourable; corn has risen nearly 25 per cent. during the last four months. France will most likely buy largely from Russia.

Dr. Randall thinks corn is much to be preferred to oats for fattening sheep in winter, and says they should have a pound each per day, if they have straw and no hay.

An Enfield, N. H., farmer sold 2,600 pounds of wool for 60 cents per pound, a few days since, for which he refused \$1.05 a year ago, losing over \$1,000 by the operation.

Peter Criner, while driving a reaper in Alhambra, Ill., fell from the horse he was riding, when the reaper gathered him in its awful embrace, cutting him to pieces.

Dr. Smallwood says that the amount of rain which fell at the Observatory in the month of August was 5,217 inches. Rain fell on 20 days, it was raining 74 hours 45 minutes.

From recent reports in English papers, farmers have reason to hope that steam, which has proved itself so efficient and economical an agent in other branches of industry, will eventually be made to work satisfactorily in the cultivation of the soil.

At a recent sale of Shropshire sheep in England, individual rams were sold as high as \$400. One lot of 35 averaged \$96, and one of 13 averaged \$65. Ewes, in lots, averaged \$21, \$32.50, \$35, \$37.50.

Hon. S. Campbell, residing near Utica, N. Y. has a herd of about fifty Ayrshires, and nearly as many Short-horns, and claims that the Ayrshires generally give the most milk, although the Short-horn are larger and consume more food.

Mr. Luke Baker, of Putney, Vt., has a cow from which he sold, from the first of May last year to the first of May this year, over \$200 worth of butter, he sides using what milk was wanted for the family during the same time.

The Agricultural Society of Compiègne has invited all the other French agricultural societies to subscribe for a prize of 100,000fr., to be awarded to the inventor of the best system of land cultivation by mechanical means. Nearly the whole of the required sum has already been subscribed, and the competition is to take place in the year 1868.

TRUDGING TO MARKET.—A Californian paper mentions a drove of 200 turkeys being en route for San Francisco on foot. They had already got over 100 miles.

A CONFESSION.—The Rochester *Evening Express* says: "With cheap farms and no war burdens to shoulder, the producer in Canada has a great advantage" over the people of the United States.

MR. DEAN'S LITTLE WRINKLY.—F. H. Dean, West Cornwall, Vt., writes the *R. N. Yorker*, that his stock ram Little Wrinkly was sheared May 9th, his fleece then being one year and five days old. Fleece, 26 lbs. Weight of carcass, three hours after shearing, 96 lbs.

E. R. Page, Edgar Co., Ill., says in the *Prairie Farmer*, that he brook-washes his sheep till the water runs perfectly clear from the fleece, and that his wool nets him in the Albany market from six to eight cents per lb. more than the imperfectly washed wools of his neighbours.

A YOUNG COUPLE.—Mr. Donald Fraser, of Ernestown, owns a heifer only twenty months old, that a few days since became the dam of a fine, healthy calf. The sire of the calf is three days younger than the dam. Both the bull and heifer won the first prize in the yearling class at the township and county shows last fall.

A VILLAGE DAIRY.—The Bath, Steuben Co., *Maine Courier* states that a Mr. Crane of that village, milks forty-two cows, which, up to the middle of July, had averaged one hundred pounds of butter to the cow, besides what was used in the family. At this rate the cows will about pay for themselves the present season.

THE CALIFORNIA WHEAT YIELD.—The *California Farmer* professes to be able to show fields of wheat of 40, 70 and even 60 bushels per acre. California, which in 1857 imported about 50,000 bbls. of flour, can export this year, according to the estimate of the paper just named something like two and a half millions of barrels.

VALUABLE PAIR OF DURHAM OXEN.—We learn from the *Boston Cultivator* that Daniel G. Wood, of Rowley, Mass., has a pair of Durham oxen for which he has refused \$2,200. They weigh 4,900 lbs., are 5 years old; 5 ft. 8 in. high; girth 8 ft. 4 in.; colour red with a few white spots; remarkably well matched, and were raised in New Market, N. H.

A VALUABLE INVENTION.—Several who were present at the recent trial of Implements at Auburn, after we had left, have mentioned to us in terms of high praise, the manner in which one of the novelties of the occasion acquitted itself on trial—we refer to the *Hay Knife and Fork* combined, shown by Mr. SPROTT, of Muncy, Pa. A friend, who had the opportunity of examining it in operation quite thoroughly, and who is not likely to be led away by appearances, writes us:

"I was much pleased with the implement in reference to its utility. It worked as well in hay as a fork. The exhibitor threw off with it a load of upwards of 2,300 pounds in two minutes, at six forkfuls. He threw over the beam upwards of a ton in three minutes. It evidently would not, however, work as well in grain—oats and barley—as some of the many tined forks. The inventor did not claim that it would. In this respect it was not like other forks of the harpoon type, to which this belongs, though differing essentially from any other."—*Country Gentleman*.

AGED TREES.—The *N. B. Agriculturist* supplies the following:—"In 1810, a noted tree, the Golyos oak, was felled near Newport, Monmouthshire. It was 284 feet in circumference, its bark sold for £200, its timber for £670; the rings (409) encircling its trunk indicated that it had continued growing 400 years. A far famed red oak of Mount Etna was of precisely the same age. Four hundred years appears a venerable age even for a tree. Still there were many the longevity of which was greatly in excess of it among the most celebrated, of which were the following: Fig tree in Damascus, 618 years; the Pescian olive tree, 700; olive tree in Palestine, 719; olive tree in Asia Minor, 850; the Louisianian oak (small tree), 1200; yew trees of Fountain Abbey, 1200; yew trees of Cowhurst, Yorkshire, 1400; sycamore of Heliopolis, 1805; cedar of Mount Lebanon, 2112; yew of Locherinyay, Scotland, 2500; yew of Braburn, Kent, 3300; sycamore of the Bosphorus, 1000. The cypress of Taxodime, in Mexico, is said to be more than 5000 years old. Its circumference was 117 ft. 10 in."

THE HARVEST OF 1866 IN IRELAND.—The harvest of the present year (says the *Leinster Express* of the 18th instant) is now sufficiently advanced to enable any casual observer to form a tolerably correct estimate of the acreable yield of produce likely to be obtained. The great bulk of the hay crop is now thoroughly secured, and the quality of the large supplies sent to market bears the most unmistakable evidence of the care bestowed on its harvesting. Touching the potato crop—the staple element of the country—much cannot, as a general rule, be said to its favour. The tubers are, no doubt, heavy and palatable, but farmers possessing choice arable land, in the highest state of cultivation, complain of a few points in the produce. The supplies in our markets are very considerable, and the prices, as a whole, remunerative. Advances from many quarters give the unpleasant tidings of the appearance of that periodical unwelcome visitor—the blight. The crop, however, being now so very forward, the ravages of the disease will be less severely felt. Cereals exhibit rather a hopeful appearance, both in straw and grain. The oat crop is particularly good, and in favoured localities unusually heavy. Its cutting is very general, but a difficulty stands in the way of the harvesting of the crop, owing to the paucity of reapers. At no period within our recollection has such difficulty been experienced in procuring sufficient farm workmen, and this drawback will be the more keenly felt in the reaping of the grain this year owing to the crop being so prostrate by reason of the recent rains. Reapers in the county of Dublin receive 3s. 6d. per day, yet the supply is far from meeting the demand. Wheat and barley will maintain a full average yield, whilst the quality of the grain ought to bear favourable comparison with preceding supplies. Of the flax crop much cannot be said in this province. Two causes operate against its success—the low price at convenient markets, and the apathy shown towards extending its growth. In course of time these impediments may disappear; but in the face of their present existence a difficulty must be experienced in inducing our farmers to cultivate this remunerative crop.

British Cleanings.

FUNCTIONS OF THE WIND.—Herbert Spencer, a writer of note in England, thinks the wind has much to do in producing the upward rise of sap in both tree and shrub, by its influence on the boughs and twigs of the plant. And experienced gardeners, who train fruit trees upon walls, &c., find it necessary to loosen them occasionally and let them blow about a little for exercise.

HALLEY'S PEDIGREE WHEAT.—The *Farmer* (Scottish) says: Yesterday week Mr. Biggar, Maryholm, commenced the cutting of a field of wheat of Halley's 'pedigree' variety. The field is about 3 imperial acres in extent, and was sown with 4 bushels of seed, costing £3. The seed was put in with a drill sowing machine. The ears are of large and uniform size, and the whole appearance of the crop is very fine. The yield, it is estimated, will be about 50 bushels per acre.

WATER PURIFIER.—The *Medical Times and Gazette* says:—"We wonder that travellers do not carry with them a little bottle of solution of permanganate of potass, a few drops of which would speedily purify any water. A friend of ours who has just returned from India tells us he has derived the greatest benefit from its employment. At stations where the water was turbid and tasted and smelt of decayed organic matter, he found that the addition of a few drops of the solution of the permanganate made it, in a few minutes, as clear and sweet as spring water.

SCOTCH BILLS.—The *Edinburgh Courier* is responsible for the following: Two operatives were conversing the other day about a fine cemetery recently made in one of the most flourishing of our border towns. One of them, with whom the "new-fangled graveyard" was evidently no favourite, boldly, but amusingly, expressed his aversion to it in the remark, "I'll rather dee than be buried in sic a place!" With equal disregard of the logic of facts, his companion, who held an exactly opposite opinion of the cemetery, retorted, "Weel, if I'm spared in life an' health, I'll gang naewhere else!"

LONG DISTANCE FOR WATER.—Though fresh air and pure water are among the commonest of God's gifts, the people of large cities often find it a serious matter to secure a full supply. The city of London is now greatly agitated by the question, how to obtain an adequate amount of pure water. The water from the river Thames is very impure, and the water-level in the wells is constantly sinking. A very experienced engineer proposes, as the best plan, that water should be brought from the head waters of the river Severn, in the mountain ranges of North Wales, and collected in lakes, one of which would be larger than Loch Katrine. The entire length of the aqueduct would be 183 miles, and the first cost for a supply of 130,000,000 gallons a day is estimated at \$43,000,000.

PIG PROTECTION SOCIETY.—The *Farmer* (Scottish) says:—"The last novelty in protection societies is the Pig Protection Society of Holbeck. They met on Thursday in the People's Hall, which was densely crowded, and passed resolutions supporting pigs, and condemning the attempts of the nuisance inspector to remove those interesting animals and their sties from the borough. The chairman maintained the position, that if they were deprived of their pigs, 'a great portion of the community would have to be content with a less quantity of meat, or pay considerably more for it.' We happen to know a case where a nuisance inspector condemned nearly all the pig sties in a considerable Scotch village, although at the same time he had no less than seven large swine feeding in his own back yard."

STRANGE PLACE FOR A BEE SWARM.—We clip the following from a British exchange.—"Upon one of the gas-holders belonging to the Doncaster Gas Company is fixed a model mill, the sails of which never cease during the slightest breeze. Upon these sails a swarm of bees had determined to alight, and for some considerable time were frustrated by their constant whirling, until a sufficient quantity of bees had accumulated to stop the velocity of the mill, and eventually the swarm succeeded in knitting round the whole machine. The swarm proceeded from one of the several hives which are kept upon the premises. And now came the difficulty of capturing or hiring the swarm in this singular position. The scaling of the gasometers and hiring the new-fledged brood was an arduous undertaking, fraught with difficulty and no little danger, from the peculiar circumstances under which they were placed. However, it was effectually accomplished by one of the workmen, but not without suffering for his intrusion."

Eggs.—The following is from *Cassell's Illustrated Family Paper*: It is usual to estimate the fecundity of the hen by the number of eggs it lays in a year, but this is an error. It is not the total number, but the gross weight that is most deserving consideration; every means should therefore be adopted to increase their weight. There is no doubt that this result may be brought about by the exercise of proper judgment. We have stated that the average weight of the eggs laid by the domestic hen is two ounces (875 grains), but this weight is attained only when the hens are well supplied with proper food—under ordinary circumstances the average weight will not exceed 750 grains. The eggs of the Spanish and the Creve-coeur breeds weigh 1200 grains. The following calculation will show the relative advantages of weight and number. Suppose the ill-fed hen lays 100 eggs during the same space of time that the Spanish hen lays 70, which will be the most productive as regards quantity? 100 eggs, weighing each 750 grains, gives 75,000 grains, or 10 5/7 lb. 70 eggs, weighing each 1200 grains gives 84,000 grains, or 12 lb. This is a striking difference, and fully contradicts the common belief, showing that the best layer is not the hen that lays the greater number of eggs, but the hen that lays the heaviest. It therefore becomes important to take this fact into consideration in selecting laying hens. We know that the first eggs laid by a hen are neither so large nor so heavy as those laid after she has become a year older; and it is the same with the hen after she has passed her fourth or fifth year.

THE POTATO CROP.—The *London Times*, of Aug. 6, gives prominence to the following from the *Gardeners' Magazine*:—"As respects potatoes, there can be no doubt that a sudden cooling of the earth at the critical period of their ripening is the main cause of the murrain which so frequently spreads alarm throughout the country. We have demonstrated, both in these pages and elsewhere, not only of late but in years gone by, that if the visitation of heavy rains, accompanied with an extraordinary low temperature, occurs when the haulm has nearly done its work, and the tubers have ceased to increase in size, disease is almost sure to break out, and that there is not a variety of potato known that is thoroughly proof against it. But if the plant is still growing vigorously, or if the haulm has perished and the tubers are full ripe, these peculiar conditions of atmosphere do not in any way affect them. When potatoes are thoroughly ripe they cannot be infected with disease. They may be infected while ripening, and the scarcely visible germs may spread and devastate the store. Even then, the sound tubers may be picked out from the mass of rotteness, and will be found unharmed. So of potatoes in full vigour of growth; they may be affected with diseases as all plants are at times, but the particular form of fungoid consumption known as "potato disease," *par excellence*, never touches potatoes that are increasing in size, and in the hey-day of their growing. Cold, however, may check their growth and bring on premature ripening, and in the end the premature ripening may be attended with an outbreak of disease. We enter upon these details solely with a view of putting our readers on their guard, that as large a breadth of potatoes may be secured as the season will permit. The weather of late has been eminently favourable to the development of the murrain; where the plant is full of vigour it may tide through this dreary time, and reap the full benefit of the sunshine we are expecting, and of which there is very much due for the completion of the summer's work. But where the growth is about to cease, and the first indications of decay are presented by the haulm, the crop is in danger. There is but one way to save it, and that is to take it up. When once the disease begins its ravages, it spreads with fearful rapidity, but the removal of the tubers from the soil may prevent an outbreak, or, if it has made a beginning, may prevent it making an end. The act of removal operates beneficially in two ways; it causes, first the removal of the haulm, by means of which the disease is conveyed to the tubers, and it hastens the maturation of the tubers, and so places them out of the reach of the plague, which never touches them if they are quite ripe before the disease begins. The tubers should be spread out in a dry place, with a thin covering of dry sweet straw or other rough clean litter over them. Exposure to light any length of time is an injury, but they will be greatly benefited by a free circulation of air, which a light spread of litter over them will allow. In many places the first early kinds have been harvested full ripe at least a fortnight, and the quality, generally speaking, is of the very best."

The Household.

Homedale Farm.

GARDEN AND ORCHARD PRODUCTS.

ALL through the summer-time, fresh home-grown fruits and vegetables repaid the expense and trouble bestowed on the garden. With the thorough culture and assiduous attention they received, the yield was bountiful beyond all expectation. The strawberries carefully planted, well tended, and sometimes watered, bore a moderate crop, and the rhubarb, thanks to the liberal manuring it got when set out, made an astonishing growth, and bore pulling remarkably for the first season. Beginning with early spinach, there was no lack of vegetables. So plentiful were they that by midsummer there might have been "bacon and greens" on the table daily without exhausting the supply. The currants and gooseberries thrived well, and while some of the currants bore a bunch or two, nearly all the little Houghton gooseberry bushes had a handful or more of fruit on them. "Young ducks and green peas" might have been a frequent dish, but the ducks were a luxury reserved for next season. Radishes, lettuce, cress, onions, beets, carrots, parsnips, and all the commoner sorts of "garden sauce," were in profusion. It was a frequent remark at table that everything tasted much nicer than it did in Hamilton. Mr. Perley told the young folks that there were three reasons for this. First. What you gather in your own garden is fresher, and in better preservation, because it is not handled and knocked about in a market waggon. Secondly. There is a special interest felt by us in what we have bestowed labour on, and watched while growing. Thirdly. People who live in the country and work out-of-doors, have a keener appetite, and eat everything with a greater relish than city folks who get but little fresh air and exercise. These points led to conversations that branched off somewhat from the original theme. Mr. and Mrs. Perley, ever anxious to convey useful instruction and to impress a moral, took occasion to tell the children that everything we do for ourselves has a peculiar satisfaction connected with it, that independence and energy bring their own reward, and that just as the vegetables you have raised with your own hands have a relish all their own, so it is with all the fruits of personal toil and patient effort. They did not fail also to point out the many causes for thankfulness presented by their daily experience of the bounty of Providence in making the earth yield her increase.

Miss Lucy had watched the melon beds very eagerly, and longed for the time of their ripening. When at length the musk melons began to turn yellow, she grew very impatient to pull them, and was with difficulty persuaded to let them get fully ripe. One day as the young folks were looking at the melon beds very wistfully, the thought occurred to Lucy that as the water-melons do not change colour, it would not be possible to tell whether they were ripe or not; so she asked Charles if they must guess at it in their case. "No," said her brother, "you can tell when a water-melon is ripe well enough." "How?" enquired Lucy. "In two ways," replied Charles. "Either by the stalk withering pretty close to the melon, or by pressing the melon to see if it makes a cracking sound or not." "How do you know?" asked Lucy. "I read it either in some book about gardening or in THE CANADA FARMER," said Charles. In due time both musk and water-melons became ripe, and many a delicious feast they furnished the impatient little gardeners. Great was the joy of the young folks too, when they discovered in the much-neglected orchard a couple of trees of harvest apples, which, ripening in August, afforded many a nice treat. As the summer glided into fall, apples of other kinds ripened,—so did the tomatoes. A few trees of the common blue plum bore a moderate crop. The

onions matured, green corn was abundant, potatoes, beets, turnips and other vegetables successively demanded gathering and housing, and at the end of the season there was a plentiful "stock and store" of good things on hand for the winter supply. The produce of garden and orchard was a considerable item of provision for household consumption, and both the pleasure and profit thus yielded, were a source of encouragement for the future. If the first season brought such excellent returns, much ampler ones might be looked for in the future, especially in the line of fruit. The whole family were agreed in thinking it would be hard to do without a garden in all time to come, and should any turn of fortune or dictate of fate consign them to the city again, they were determined to live in the suburbs, that they might enjoy the luxury of having a garden of their own.

Housekeeping.

PROMPTNESS, order, cleanliness, are a sisterhood of household virtues, which contribute so largely to the comfort and happiness of the home, that their office deserves to be magnified. The discomfort and misery of an irregular, disorderly, slatternly household—the general lack of ease and efficiency in all the minor details of domestic life are too suggestive of evil in themselves to make it necessary for my pen or your thought to linger on it.

But there is an opposite view of this matter, which is prolific of mischief; and yet those who sin in the latter direction are usually the very last people to suspect it—nay, they are apt to entrench themselves in and make the highest virtue of what in reality is a fault of vast proportions.

I speak now of those nervously prompt, those inveterately neat, those terribly energetic women, who make housekeeping the "ultima thule" of their lives, and who never seem to reflect that it is subservient to vastly nobler and higher uses, intellectual and spiritual, but who regard promptness, order, cleanliness, as the very end for which life was created.

Such women have I known—so have you—immaculate, inflexible, with an awfully persistent activity in one direction, that absorbed and exhausted them for all others. Now, nice housekeeping is a good thing and to be desired; but it is not to be worshipped; it is not the supreme end of existence, and where it is made so, the spirit of the home is inevitably hard, and dreary, and barren, vastly worse than an easy-going, let-things-take-care-of-themselves style of living, combined with geniality and heartiness of soul.

And then, after all, what a mean and narrow idea of life that is that goes no higher than its physical needs—that makes it only a fine animal existence, and that does not regard order and cleanliness as only ministrations to higher necessities.

It is pleasant, a delightful thing to sit at a well ordered table with snowy napkin and spotless china, to lie down at night betwixt fragrant sheets in a chamber whose every appointment betrays taste and care; but while one fully appreciates all these things, it is painful enough to find the mistress of such a home closed up to everything outside of itself. All the glory and wonder of art, all the sweetness and joy of poetry, all forms of æsthetic cultivation, all improvement of one's intellectual faculties, buried up and lost in one bustling round of household duties, that leave to the day and the night no sentiment, no time for nurture or cultivation of one's best and noblest self.—"These things ought ye to have done, and not to leave the other undone." And how sad it is to see a woman of this sort growing narrow and contracted as the years gather upon her, all the juices and sympathies of her better nature slowly parched up, and her whole being devoted to one idea, and that neither lofty nor ennobling.—Virginia E. Townsend.

TOMATO PICKLES.—To one peck of green tomatoes, add eight onions and six peppers. Cut them in slices, sprinkle thoroughly with salt, and let them remain over night. In the morning drain off the juice, cover with vinegar and boil five minutes. Again drain off the liquid, thus preventing fermentation. Place in a stone jar and cover with cold vinegar. To all lovers of high seasoned condiments, this will prove desirable.—Western Rural.



The Grape Crop in Northern Ohio.

We learn from the *Ohio Farmer* that in the northern part of that State, both on the islands and the main land, the grape yield is deficient the present season. It is thought that it will be only one-half or one-third the usual crop. The grape culturists of the State are naturally very much exercised at this partial failure of the vineyards, and are earnestly enquiring into the cause of it. At a recent meeting of the Lake Shore Grape Growers' Association at Sandusky, after a visit to the islands, this topic came up for discussion. We abridge and condense some of the remarks made by the Grape Growers present.

Judge Summers, of Vermillion, expressed the opinion that overbearing of the vines the past year was the main cause of the deficient crop the present season, weakening the vines and exposing them to injury by the winter, and by disease. But the unusual severity of the past winter was another cause, killing many of the buds in most vineyards; and the severe storm of rain and wind in June destroyed many of the blossoms.

Addison Kelly, of Kelly's Island, attributed the failure mainly to the storm in June, beating off the blossoms, and a kind of mildew which appeared soon after, destroying much of the young fruit as soon as it was set.

Mr. Scudder, of Sandusky, said his older vineyard bore a large crop the last year and was summer pruned; the wood did not ripen well in the fall, and it blossomed sparsely this spring, and the big storm destroyed most of the blossoms; but a younger vineyard bore a light crop the past year, was not summer pruned, ripened its wood better last fall, and blossomed earlier this spring, so that the fruit was set when the storm came, and a fair crop remains.

J. E. Mottier, of North East, Pa., spoke emphatically of the bad effects of allowing vines to overbear, as the results of many years' observation at Cincinnati, before his removal to the Lake Shore.

Mr. Griffith, of North East, spoke of the extreme injury done by the storm in June, destroying the fertilizing pollen of the blossoms, and especially of the ill effects of severe summer pruning, both on the fruit and the vine, robbing both of their chief supply of nutriment, which is derived from the air by the leaves.

Dr. Dunham, of Collamer, was also opposed to much summer pruning, he had lessened the amount of pruning in his vineyard, each summer for a number of years past, and his crops of fruit had increased from two tons to six tons per acre. He thought the latter amount might be considered overbearing, but he was uncertain as to what is the bearing capacity of full grown, healthy vines, or when we might say they were overbearing. He had suffered but little from mildew or rot.

Mr. Weaver, of Cincinnati, said he would say vines were overbearing when the fruit colours faintly instead of deeply, and when the ends of the canes cease to grow before the usual time. He also deprecated the removal of much summer foliage by summer pruning.

Other speakers were of the opinion that the unusually warm weather and rains of last September produced too late a growth of the vines, so that the wood did not ripen well enough to withstand the severe winter; hence most of the buds were killed and the new growth had to come from secondary buds, which produced few blossoms.

SOMETHING LIKE AN ONION.—The *Grahamstown Journal* (Cape of Good Hope) describes a specimen of the onion, grown on the farm of Lausanne, in the Queenstown district, as measuring 20 inches in circumference, and weighing over 20 lb. Ten "muids" of these onions had been forwarded to Grahamstown. The occupier of the farm transplanted over 60,000 plants.

Snow Drops on Grass Lawns.

In the *Gardeners' Chronicle* for August 11th, reference is made to a suggestion from Mr. McNab, of Edinburgh, for the cultivation of snow-drops on grass lawns. As this bulb will survive even the severe cold of a Canadian climate, it would be well to give the plan a trial in some of our gardens. It not unfrequently happens with us that after the first year or two this favorite flower does not make its appearance, the cause of the failure being probably the rotting of the bulbs, or their being eaten by mice—or having been inadvertently dug and disturbed in the spring and fall. Mr. McNab's remedy for this is the simple one alluded to. He says:

"In order to grow the Snowdrop successfully, so as to enable it to retain its place undisturbed for a long series of years, insert the roots into grass lawns. By this method they are completely out of the way of receiving injury—and in no other situation could they be put with more telling effect while in bloom—the roots better cared for, and less liable to rot during their nine months of apparently dormant condition. If this system were more generally adopted the flowers might be enjoyed for seven or eight weeks, according to the weather and the distance the roots were inserted into the earth. The method of procedure is to dibble holes into the grass, from 12 to 18 or 20 inches apart, according to the extent of the lawn to be planted, and at depths varying from 4 to 6 inches, and to drop one or sometimes two roots into each hole, the small plots in front of villa residences looking best when they are placed at the lesser distance apart."

Grape Hints.

GRAPES coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine. "Just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness, are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch, stuck in for support, than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes are desired, pinch back the shoot bearing it about four or five inches above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for the next season. These hints are for amateurs, who have a few vines on trellises; for large vineyard culture, though the same principles hold good, so far as they go, they will vary in their application.—*Gardeners' Monthly*.

Iron as an Invigorator.

A correspondent of the *American Farmer* writes enthusiastically of the virtues of old iron as a tonic for the vegetable system. He says:

Our first satisfactory experiments with iron, agriculturally, were upon peach trees. We had a few favourite trees which took on early consumptive habits, blooming full and freshly, but casting their fruit at half growth, and their foliage at a period four or five weeks too early. The trees were undoubtedly in a decline. Arguing in a common sense manner, we decided that our trees had exhausted some element essential to their health and longevity. A chemical analysis of the soil discovered to us a want of iron; and knowing the peach tree to be a great lover of, and rather a greedy feeder upon that mineral, we supplied the deficiency by digging all in among the roots of the ailing trees, all the old rusty nails, hoops, and every scrap of old iron we could lay hands on. The iron dose was applied in October, and the following season our consumptives had recovered, and afforded us a full crop of better peaches than they had ever borne before.

The editor of the *Farmer* adds:

A gentleman near this city who grows several varieties of pear trees, some years since got a lot of horse shoe filings and placed them round the roots of one of his dwarf trees, and he states that it is the most thrifty tree he has in his lot, and assigns the only reason to the fact of placing this refuse iron at the foot of the tree.

Apropos of the same, the subject of iron for fruit trees came up incidentally at a recent meeting of the Cincinnati Horticultural Society, when several interesting facts were elicited. A member stated that one tree of an orchard of pear trees, with which he was acquainted, happened to be so situated as to receive the waste dye-wash containing copperas, from a hat shop. The tree bore profusely every year, and continued to live and produce its annual crop long after the remaining trees of the orchard had perished and were almost forgotten. For aught he knew it was bearing yet. Other members gave facts illustrating the beneficial results of watering fruit orchards with a solution of copperas—sulphate of iron—this being regarded as the most direct and convenient way of applying the iron to the soil.

It is said that if the ground under one half of an apple or pear tree be watered with a solution of copperas, the foliage upon that side will, within two or three weeks, display a thrift and vigor rendering it easily distinguishable from the other side of the tree. Five or ten cents worth of copperas would be enough to make an experiment with. Try it.—*Sorgo Journal*.

LA CONSTANCE STRAWBERRY.—We think this variety fully sustains the character we gave it when first received from M. De Jonghe, six or eight years ago, and quite justifies all that he said in its favour. M. De Jonghe said that there were not four varieties which eclipsed, in all respects, *La Constance*; and this has proved more than true, for, so far as our experience goes, it has few or no superiors. This rather unfavourable year, it has been fine, when many others have failed. We again commend it as far superior to any foreign strawberry yet introduced; always reliable, and always beautiful.—*Magazine of Horticulture*.

NEWLY PLANTED GRAPEVINES.—WINTER PROTECTION.—Last fall I asked the *Country Gentleman* if it would answer to cover newly set grapevines by putting, say half a bushel of rich garden earth in a mound over each vine. The answer was not positive, but I tried it. I had planted one vine each of Adirondac, Iona, Israella, and Allen's Hybrid. They had cost me from one to three dollars each, and being very small and frail looking, I was anxious to give them the best care. I adopted the plan I had suggested, and made a mound of earth about two feet in diameter at the base and fifteen or eighteen inches deep over each vine. Upon uncovering them this spring, I found them in fine condition, and now each one is growing finely.—H. C. K. in *Co. Genl.*

RASPBERRIES.—TYING AND PRUNING.—Many persons allow the raspberries to grow at will, until the fruit begins to weigh the canes to the ground. Then they are tied up. This is all wrong. The new shoots or fruit-spurs have put out with reference to this free and easy growth, and when crowded together, as is necessary in tying, many of them are either broken or entirely forced out of a growing position. It is always better to tie them up as soon as uncovered in Spring, so that all the growth may be with reference to their permanent position, but if neglected until now, leave them no longer. A few of the strong growing kinds may do without staking, but the majority should be tied up. Of course the pruning-shears have been among them, cutting out all dead and unsightly branches.—N. Y. *Tribune*.

SEMI-PROFESSOR GARDENERS.—We hear frequent complaints from correspondents relative to the blundering and unskillfulness of their so-called gardeners. We say so-called gardeners, because we know there are a great many really intelligent men in the class of gardeners who decry these pretenders as much as we can. As a class, we do not believe there are a greater proportion of pretenders among gardeners than among lawyers or doctors, &c.; and we do know that there is in gardening a constant incentive to attain more and more knowledge, by him who has studied even to the point of a passable cultivator. As the gardener rises in knowledge and position, horticultural science multiplies its inventions, and demands from him more and more study and observation. Changes and improvements constantly press downward upon the gardener wanting in a love of knowledge, while they assist and heave upward the student. That there are too many unskilled men who pass themselves off upon the un instructed amateurs we acknowledge; but, as the amateurs become more and more conversant themselves, these pretenders will be reduced in numbers. We must not decry the profession, for it is a noble one; but we, and all true gardeners, must discountenance all and every unskilled pretender, until they assume their proper places, and seek, by study and practice, to acquire a knowledge fitting them to enjoy in reality their present assumption.—*Horticulturalist*.

CONS., VEGETARIAN, ARBOREOUS, AND FLORICULTURAL.—What tree most requires consolation? The weeping-willow. What plant requires a styptic remedy?—Love lies bleeding. What fruit should be sent to a reformatory? The black-heart cherry. What vegetable produces asphyxia?—The artichoke. What flower does a pretty Quakeress resemble?—The primrose. What flower is esteemed by a gentleman's servant?—The lily of the valley. For what flower is the desire apt to make you lazy?—When you feel lack-a-daisy-call. What flower does one of the Nathans resemble?—The little Columbine. What is the flower for a doctor's button-hole?—Croak us. What is the flower for a teacher?—Verbena. What is the flower for the poor?—Any money. What is the flower for a Chinese woman?—Pick her tea. What is the flower for a marine painter?—Art seas.—*Melbourne Punch*.

A HINT TO LOVERS OF FLOWERS.—A most beautiful and easily attained show of evergreens may be had by a very simple plan, which has been found to answer remarkably well on a small scale. If geranium branches, taken from luxuriant and healthy trees, just before the winter sets in, be cut as for slips, and immersed in soap water, they will, after drooping for a few days, shed their leaves, put forth fresh ones, and continue in the finest vigour all winter. By placing a number of bottles thus filled in a flower basket, with moss to conceal the bottles, a show of evergreen is easily secured for the winter. All the different varieties of the plant being used, the various shapes and colour of the leaves blend into a beautiful effect. They require no fresh water. So says a lady who has tried it and handed us the above slip for publication.—*German Town Telegraph*.

TRAINING TREES.—While we do not advise the commercial fruit grower to expend time in giving variety of form to his fruit trees by other than the best practical use of the knife, yet we do like occasionally to see diversity of form produced by artificial methods, exhibiting skill and control of plant life in grounds of amateurs. Trees in fan shape bordering walks, with spreading flat tops, almost umbrella forms, on lawns, or some points or places where space is a part of the scenery, and elevation not admissible. This month is a good time to train and tie the branches, just before or about the time of forming the terminal buds. Many sorts of trees, those especially of a straggling habit of growth, can be not only improved in form, but their bearing surfaces often enlarged and increased or improved in character. Gardeners and amateurs can often, with a little labour and care, give additional interest and diversity to small extent of grounds by attention to this item of fancy form in training trees.—*Horticulturalist*.

THE ARRANGEMENT OF FLOWERS.—The first thing to be considered in the arrangement of flowers is the gratification of the eye both as regards form and colour. The consideration of form must include weight and substance, so far as that solid and massive flowers should be placed low down in the group, while the tapering or shading off on every side should be made up of flowers of spiral, light, and feathery forms, especially those which stretch up from the centre, and reach the highest. Such fringing or feathery sprays may be made to relieve the massiveness of the group, as well as to heighten the colour of individual flowers by being composed of delicate foliage, such as sprigs of rose leaves or ferns. The general form of a simple group of flowers, placed in a vase, should be that of a half circle or globe, admitting of course the agreeable variety of drooping edges, and sometimes even trailing branches may be added with good effect. But whatever the receptacle may be in which flowers are placed for ornament, the form of the group should never have the appearance of being depressed in the middle and raised at the sides, nor should the general form be interrupted by cavities, or stretched out into disproportionate projections. Indeed, the simple proportion is the safe rule to abide by, and of this almost all women, by a little reflection, are able to judge for themselves. But there is proportion in colour as well as in form; and here we must go back to the primary rule—red, blue, and yellow, with their complimentary opposites—green, orange, and purple. As flowers are never gray, these decided colours may be relieved by the intervention of pure white, or by so close and even a mixture of the primitive colours, with their different gradations, that the eye is not compelled to fix upon one more than another, and consequently is perfectly satisfied. This is generally called balance of colour, in producing which nothing can be more accommodating than flowers.—"*The Beautiful in Nature and Art*," by Mrs. Ellis.

Miscellaneous.

Preservation of Meat by Paraffin.

A process of preserving meat by paraffin has been invented by Professor Redwood; and, from the success which has attended its operation, is likely to acquire for it considerable popularity. A circular, which we have received on the subject, says:—"The process consists in the immersion of fresh meat in melted paraffin, at a temperature of 210° Fahr. (110 centigrade), for a sufficient time to effect a concentration of the juices of the meat and the complete expulsion of air; after which, the meat in its condensed state is covered with an external coating of paraffin, by which air is excluded and decomposition prevented. The concentration of the juices may thus be carried to any required extent. If the meat is to be kept in hot climates its weight should be reduced by evaporation to about one-half, in which state it will contain all the nutriment of twice its weight of fresh meat, the portion driven off by evaporation consisting only of water. Thus prepared it will be fully cooked (by the heat applied in the process), and it may be eaten without further preparation, but it will also be applicable for the preparation of a variety of made dishes, including stews, hashes, soups, gravies, &c. For cold climates, a less amount of heating and concentration will suffice, so that the meat may retain its original juicy condition, and when further cooked present the appearance and possess all the characters of fresh unprepared meat. The paraffin used in the process is a perfectly innocuous substance; it is entirely free from taste and smell, and is not subject to change from keeping. It may be removed from the surface of the meat by putting the latter into a vessel containing boiling water, when the paraffin as it melts will rise to the surface of the water, and may be taken off in a solid cake when cold, while, at the same time, the meat will become softened and prepared for cooking in any suitable way. Among the advantages of the process may be mentioned its great simplicity, the facility with which it can be performed by unskilled workmen, and its inexpensive character, as the same paraffin can be used for an indefinite number of times, and the quantity required for cooking the meat is very small. When the meat is concentrated as described for hot climates, it is rendered very portable, and no special care is required in packing it."

Nails, Nuts, Screws and Bolts.

One of the most component parts of a good farmer is mechanical ingenuity. Some lose half a day's time, for want of knowing how to repair a breakage, which an ingenious person could do in five minutes. A team and two or three men are sometimes stopped a whole day, at a critical season, for want of a little mechanical skill.

It is well for every farmer to have at hand the facilities for repairing. In addition to the more common tools, he should keep a supply of nails of different sizes, screws, bolts, and nuts. Common cut nails are too brittle for repairing implements, or for other similar purposes. Buy only the very best and anneal them, and they will answer all the ordinary purposes of the best wrought nails. To anneal, all that is necessary is to heat them red hot in a common fire, and cool gradually. Let them cool, for instance, by remaining in the fire while it burns down and goes out. One such nail, well clinched, will be worth half a dozen unannealed.

Nothing is more common than for a farmer to visit the blacksmith shop to get a broken or lost bolt or rivet inserted, and often a single nut on a bolt. This must be paid for, and much time is lost. By providing a supply of bolts, nuts and rivets, much trouble may be saved. They may be purchased wholesale at a low rate.

These should all be kept in shallow boxes, with compartments made for the purpose, furnished with a bow-handle for convenience in carrying them. One box, with half a dozen divisions, may be appropriated to nails of different sizes; and another, with as many compartments, to screws, bolts, rivets, etc.

Every farmer should keep on hand a supply of copper wire, and small pieces of sheet copper or copper straps. Copper wire is better than annealed iron wire; it is almost as flexible as twine, and may be bent and twisted as desired; and it will not rust. Copper straps nailed across or around a fracture or split in any wooden article, will strengthen it in a thorough manner.—S. E. Todd.

Agriculture in our Common Schools.

This is a matter of some importance in view of the future of agriculture in our country. Some years ago the plan of instructing the children of the rural population in the elements of agricultural science, while attending the district school was introduced. A text book explaining in a concise and lucid manner the nature of the plants the farmer cultivates, the animals he raises, the character of the soil he cultivates, the process by which its fertility can be maintained, the action of light, heat, etc., upon both animal and vegetable life, and intending by its study to lay the foundation for a higher agricultural knowledge as the pupil advanced in age and his circumstances would allow its prosecution, was prepared under the auspices of the Massachusetts State Board of Agriculture. We do not know with what success the attempt has been attended, but are satisfied that the principle is a right one, and one that may be adopted with profit to the rising and future generations. It is not of one half the importance for the farmer's boy to know the capitals of all the Empires, Kingdoms, Confederations or States, of the world, to have at his tongue's end the names of all the rivers, where they take their rise, and where they empty, as it is to know the way to make a barren soil productive, or to be able to prevent the failure of a crop, to save a valuable fruit from blight or insects, or know how much seed is needed per acre, and when and how to plant it. A preparatory to entering the agricultural colleges, the influence of such a primary education would also be invaluable. The seeds thus sown in the district schools might lead to greater prominence and usefulness in the recipient. As the management of these schools is principally in the hands of farmers, it will be an easy matter for them to make the trial of introducing some text book, of the kind we indicate into them the coming winter term.—*Prairie Farmer.*

Marriage.

Look at the great mass of marriages that take place all over the world—what poor, contemptible, common place things they are! A few soft looks, a dance, a squeeze of the hand, a popping of the question, a purchasing of a quantity of muslin, a clergyman, a short journey, and the whole matter is over. For five or six weeks two sheepish looking persons are seen dangling about on each other's arms looking at water-falls, or making calls, and guzzling wine and cake; then everything falls into the most monotonous routine; the wife sits on one side of the hearth, the husband on the other, and little pleasures, little cares, and little children gather round them. This is what ninety-nine out of a hundred find to be the delights of love and matrimony. Pity 'tis, 'tis true. But why so? For these reasons, mainly, we opine:

- 1st. Marriages are founded too much on pecuniary considerations and those of convenience, and too little on mutual affection and congeniality.
- 2d. The married parties, instead of becoming wiser and better, usually become selfish, ill-tempered and mentally inert.

Slothful Farming.

FROM AN OLD AGRICULTURAL BOOK.

I went by the field of the slothful,
And by the vineyard of the man void of understanding;
And lo, it was all grown over with thorns,
And nettles had covered the face thereof,
And the stonewall thereof was broken down.
Then I saw and considered it well:
I looked upon it and received instruction.
Yet a little sleep, a little slumber,
A little folding of the hands to sleep,
So shall thy poverty come as one that travelleth,
And thy want as an armed man.
—Prov. xxiv, 30, 31.

A REMARKABLE BULLETIN.—In Fredonia, New York, the Health Board, in order to stir the people to action with regard to cleaning up, have posted the following notice:—"The cholera is coming! By order of the committee."

THE SCHOOLMASTER'S TOAST.—The fair daughters of Canada: May they add virtue to beauty, subtract envy from friendship, multiply amiable accomplishments by sweetness of temper, divide time by sociality and economy, and reduce scandal to its lowest denomination by a modest Christian department.

A country school master preparing for an exhibition of his school, selected a class of pupils and wrote down the questions which he would put to them on examination day.—The day arrived, and so did the hopefuls, all but one. The pupils took their places, as had been arranged, and all went on glibly until the question of the absentee came, and the teacher asked, In whom do you believe?—In Napoleon Bonaparte! was the answer quickly returned, You believe in the Holy Catholic Church do you not? No, said the youngster, amid roars of laughter, the boy that believes in that church hasn't come to school today.

SIFTED WHEAT.—Gotthold one day looked on while a farmer's wheat was being threshed, and observed that the men not only stoutly beat it, but trod upon it with their feet; and finally, by various expedients, separated the good grain from the chaff, dust, and other impurities. How comes it, he asked, that whatever is of a useful nature, and intended to be profitable to the world, must suffer much, and be subject to every kind of ill-treatment; but that man, who himself does with other things as he lists, is unwilling to suffer, or to permit God to deal as He lists with him? Wheat, which is the noblest of all the products of the earth, is here threshed, trod upon, swept to and fro, tossed into the air, sifted, shaken and shoveled, and afterwards ground, re-sifted and baked, and so at last arrives upon the tables of princes and kings. What, then, do I mean in being displeased with God, because He does not strew my path with roses or translate me to Heaven in an easy chair? By what other process could the wheat be cleansed? and how could I be sanctified or saved, were I to remain a stranger to the cross and to affliction?

Poetry.

Our Mother's Grave.

BY RICHARD HOWITT.

Strew flowers upon the honoured grave
Where our lamented mother lies,
But let no gloomy cypress wave
Beside it and bright summer skies;
Let freshest verdure o'er it spread,
Let purest light upon it fall,
For these resemble most the dead,
In life, in death, beloved by all.

Keep these memorial works away,
Obstruct not Time's eternal grace:
The Seasons there will tribute pay,
And nature sanctify the place.
In solemn autumn, glad some spring,
Mute things to her will reverence show,
And there the birds she loved will sing,
And there her favourite flowers will grow.

The sun from out the amber west
Will touch that spot with lingering rays;
The moon upon her place of rest
Will seem more tranquilly to gaze;
The wind that through the welkin stags,
Gently as dies a summer wave,
Will thither come and fold its wings
To downy slumbers on that grave.

Whate'er is in its nature fair,
Whate'er is in its spirit good,
Around, diffused through breath or air,
Or undiscerned or understood;
With whatso'er she loved to tend,
On which she living love bestowed,
Will flock to their departed friend,
And cheer and grace her last abode.

Let there no painful tears be shed:
A cheerful faith was hers, is ours,
Of truth diving through all things spread;
Of love divine in simplest flowers,
Of goodness, like a sun above,
Diffusing light and gladness far;
The boundless confidence of love;
And knowledge like a guiding star.

The "Life in Life" she made her own,
By thought and word a virtuous deed,
Lived not nor died with her alone,
But will through future years proceed
Whilst what she was on us impressed,
Is more to us than wealth and fame,
Will more conduce to make us blest,
And cause us most to bless her name.

