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The Field.

Tile Draining—Cost per Acre.

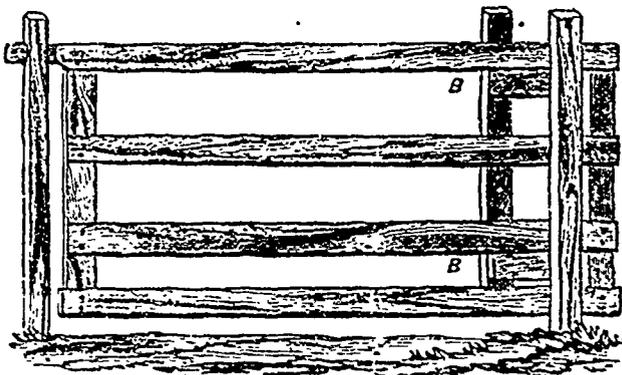
In England the cost of tile draining is from \$25 to \$50 an acre. The average cost is calculated at \$35, and it is thought to be the best expenditure that a farmer can make upon land. The same estimate cannot be made here, because the cost of labour is so much higher, but a calculation can be made from the following statement of the amount of ditching and the number of tiles required. It is from an English paper, and says:—

“An acre of land drained at four yards apart requires 3,000 tiles of 12 to 15 inches in length; at six yards distance, the number required is nearly 2,000; and at eight yards distance an acre will require between 1,400 and 1,500 tiles. A cubic yard of stones, of the size of road metal, will fill to the depth of twelve inches above two rods or perches of drain in the width of six to twelve inches, which constitutes in point of carriage an advantage of nearly six to one in favour of tiles against stones, as a cart-load of the former will lay about 100 yards of drain, and as carriage is the most laborious part of draining, it is a most important particular for consideration in undertaking a drainage of wet lands. The future saving of labour in working the land may be fairly estimated against the expense of carriage that is incurred by the first performance.

“In an acre of land drained at four yards distance, there will be 200 rods of excavated cavities; at six yards apart the number of rods will be 150; and at eight yards distance there will be 100 rods in the drained acre. The average cost of digging drains two and a half feet deep, and two feet wide at the top, and six inches at bottom, by the rod of six or seven yards in length, is 5d or 6d., as the soil may be soft or hard, and the average expense of cutting and filling the drains is 1s or 1s 2d., by the same rod of length. This last estimate includes every material and all the expense that is incurred. The number of rods in an acre being multiplied by the cost, gives the amount of the general expense.”

SAW-DUST FOR GRASS.—Mr. A. Lewis stated at a late meeting of the Little Falls Farmers' Club, N. Y., that on 25 acres he cuts grass enough to feed fifty head of cattle. This is the result of underdraining and top-dressing, with saw-dust used to absorb the liquid excrements of his stock. He regards the liquids as more valuable than the solids. The conclusion had been arrived at by experiments. Stakes had been set in pastures and meadows to note the effects of

liquid and solid manures, and the growth of grass is in favour of liquid manures. Some few years since he commenced using saw-dust for the absorption of liquid manures, and spreading the compost on his grass lands, the soil responding in a remarkable manner. Latterly he had used the dust at the rate of sixty bushels per week. The manure is hauled upon the land and spread out as evenly as possible with a shovel or fork; it is then brushed and completely broken up and distributed. This division and fineness of the manure is regarded as of peculiar advantage, since the plants readily appropriate their food, and it reaches a greater number. About half the meadow is underdrained with horse-hoe tile, the drains being sunk 39 inches. On this part of the meadow grows the largest grass.



A New Gate Plan—Worth Trying.

G. W. TAYLOR, of Ogle Co., Ill., sends to the *American Agriculturist* the above sketch, of which he says:—“It is a very handy gate. Any farmer can make it, and I find it cheaper for a field gate, and handier than any other I am acquainted with.” The frame is simple, one end hangs between two posts (A. A.) set a foot apart and enough out of line to admit the pieces of hardwood plank (B. B.), which support the gate so that it will slide upon them. To open the gate, it is shoved from left to right till it nearly balances, and then swung round like any other gate. Hoop iron on the rails will lessen friction.

Flax Culture.

On Wednesday evening, the 28th ult., an interesting lecture on the importance and value of the culture of flax in Canada, was delivered in the Mechanics' Institute, in this city, by Mr. B. Walker, under the auspices of the Boards of Trade and Agriculture.

T. D. HARRIS, Esq., President of the Board of Trade, was called to the chair, and, after a few remarks on the importance to Canada of the subject to be brought forward, introduced the lecturer to the meeting.

Mr. WALKER proceeded to deliver a lecture abounding in practical information, and conveying many valuable hints to both farmers and manufacturers, with reference to the growth and subsequent treatment of the flax crop. He urged that the growth of flax, and the manufacture of it into the state when it was ready for the spinner, should be kept distinct as two separate branches of business, they were, however, mutually dependent on each other, and there ought to be an understanding or engagement between the farmer on the one hand and the flax buyer on the other—the farmer to grow the flax, and the latter to purchase it and prepare it for the flax spinner. He showed that in consequence of the scarcity of cotton, the products of flax had come into great request of late, while at all times linens were admitted to be

intrinsically superior to cotton goods for most purposes, more especially as regarded heavy goods. Now, he believed, was the opportunity for Canada. The Americans were alive to the importance of the subject, and were straining every nerve to make up for the deficiency of cotton by having recourse to the production of flax. We had in Canada, the lecturer said, for the growth of flax, a soil and climate equal to any in the world, and perhaps there was no crop which, judiciously managed, required so little skill and attention, or furnished so large a return for a small outlay. After stating a variety of particulars with regard to the properties of the plant, the lecturer proceeded to speak of what belonged to the farmer's share in the production of flax. One point of prominent importance was the selection of the seed. It should be plump, shiny, and heavy, and above all free from the mixture of the seed of weeds. He knew it was of no use to recommend our farmers to weed their flax, as was done in Belgium, Russia, and Ireland. They would as soon think of weeding their wheat fields. However, by sifting the seed carefully, and having the land well cleaned, the danger of having the flax straw mixed with weeds would be obviated. The quantity of seed to be sown was 1½ to 2 bushels per acre. It was better to sow it too thick than too thin. Flax would thrive in a great variety of soils. Sandy loams, light and heavy clays, peat and reclaimed marsh lands, were all found, under ordinary circumstances, to produce a good crop. The wheat lands of Canada were all well adapted for the growth of good flax. In harvesting the crop, it was necessary that it should be pulled up by the roots. As regarded the profits, he made the following estimate. The yield of an acre, sown with 1½ or 2 bushels of seed, should be two tons of straw divested of the seed, for which the grower should get \$10 a ton. That was what had been paid, he believed, at Norval, near Georgetown, where there was a flax

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mill. The straw would thus yield \$3.0. Then the value of the seed—say 12 bushels at \$1.25 per bushel—would be \$15; making in all \$35 per acre. Or, if the farmer carried the straw to the mill, not divested of the seed, he ought to get \$11 or \$15 per ton, which, with a yield of three tons per acre, would give about \$45. The cost of pulling would be \$3 or \$1 per acre. The lecturer detailed several instances in which the growers had netted from \$28 to \$32 and upwards per acre, after allowing for the return of seed and all other expenses. The seed, he remarked, should be sown, under ordinary circumstances, about the last week of April, and if so, it might be harvested about the end of July or the beginning of August. He then proceeded to show what were the profits to be derived by the flax-buyer. The capital to establish a rotary or scutching mill need not be of a very extravagant amount. Where there was a good water-power, an outlay of \$600 or \$800 would provide everything. The principal expense would be for labour, but the returns would come in quickly. For a mill, which took in the produce of 500 acres, he estimated the returns as follows.—At 2 tons per acre, the produce would be 1000 tons of straw. In steeping and drying, it lost about one third, which would reduce the weight to 667 tons of rotted straw. This, at 300 lbs. per ton, would yield 200,000 lbs. of flax, which, at 15 cents per lb., would sell for \$30,000. Deduct from this cost of material, 5 cents per lb., cost of rotting and scutching 3 cents, other expenses, 2 cents, and there would be left 5 cents a pound, or \$10,000 to the manufacturer as a margin of profit for his industry and enterprise. The lecturer went on to show the various advantages which would result to Canada from the extension of the growth and manufacture of flax, and concluded with a brief history of flax culture from the earliest ages of the world. Before sitting down he exhibited samples of flax in the raw, scutched, and manufactured state, and also some of the oil-cake manufactured by the Toronto Linsed Oil Company, which, he said, was sold at \$30 a ton, and was invaluable to the cattle-raiser for feeding purposes. The raw flax shown was a fine sample, for which the lecturer was indebted to Mr. J. A. Donaldson, and which was grown at St. Mary's, in the county of Perth.

After some enquiries had been put, and remarks made by several of the gentlemen present, a vote of thanks to the lecturer was passed, and the meeting dispersed.

Peas as a Field Crop, Cultivation, &c.

It is a reproach upon American farmers that (excepting clover) we have so neglected the *Leguminous* plants, as field crops. True, we raise white beans where we think nothing else will grow—when we are belated about getting in spring grain, or where crops fail in spots; but peas, lupins, lentiles, vetches, and to these may be added crimson clover, lucerne, sanfoin, melilotus, &c.—are almost unknown to American agriculturists. This ought not so to be. Of them all, peas offer the most attractions perhaps. They will thrive upon any good corn or wheat soil, delighting most in clayey loams, but doing well on calcareous soils, if used for seeding.

This is an excellent crop to put upon a fresh turned sod, free from bad weeds. If the sod be heavy it need not be manured—otherwise apply a reasonable dressing of manure. Sow the peas as early as the ground can be worked, after pouring scalding water upon them, in quantities not exceeding six quarts of seed together, little more than covering them with water, letting them soak eight to twelve hours, and drying them with plaster. This scalding operation kills the "pea bug" a weevil which lays its eggs just after the blossoms have fallen. The grubs penetrate the pods and locate each in an embryo pea. If they mature and remain till sown with the peas, when they appear and make their attacks at the proper time. Though unnoticeable at first (and not injuring green peas), they detract much from the value of the crop. Peas for seed should be sowed late—after June 12th—and will thus escape injury almost if not wholly.

The common Yellow Field Pea is usually cultivated, and the Marrowfat is also recommended. Those which make a very rank growth of straw are undesirable. Sow two to three bushels to the acre broadcast, and plough the seed under about three inches deep. After ploughing, it is well to roll the land, but if the ground is likely to bake, it may be "dragged" with a harrow turned over. The haulm of the peas is so branching and tangled, and the roots are drawn from the soil so easily that, when the crop is mature, a revolving hay rake will easily throw it into winrows. It is best to leave the hay in heaps which may be protected from rain by hay caps. The crop is fed to hogs or cattle without curing, when the peas are nearly ripe; ripe and threshed, the grain is

excellent fattening feed for cattle, horses, sheep, or hogs, and the straw, well cured, is similar to clover in feeding properties, and is a favourite fodder for sheep.

Peas are off the ground early enough to prepare the land for wheat, which follows very well, and this will be found a very excellent crop to introduce into a rotation, either before or after wheat. Thin sowed peas lodge badly, but when sowed thick they stand by holding on upon one another by their tendrils. The use of lime and gypsum, though advantageous to the crop, make the peas hard when boiled—the same is partly true of peas raised on lime soils.—*Am. Ag.*

How to Save Manure.

In Franklin Co., Mass., the place of my nativity, most of the tillage land has increased in value probably 100 per cent. within the last 25 years, by means of the careful husbandry and application of manures. Most of the barns are constructed with three stories, with a view to this object, a part of the middle story being devoted to stabling, with tight floors, so that the droppings, with the urine, may be precipitated below through convenient trap-doors. The lower story, or cellar, opens generally to the east or south, convenient for driving in a team loaded with alluvium, gathered from shallow holes or basins made on the lower sides of the roads at the opening of cross-bars, which are so necessary in the hilly country to prevent the water running in the road—or with muck, or with dirt of some kind, or any kind, to be mixed with the droppings, and absorb the urine and escaping gases. Sometimes old brine and refuse salt are thrown into the heap; sometimes suds from the wash-room; sometimes clear water, to prevent mould or fire-fang. I believe those who understand something of chemistry never add either ashes or lime to the manure heap, as this would set free the ammonia; and as to profit, would be something like burning bank bills to get the ashes.

But how shall we who have none, or only a part of these conveniences, save manure? Answer: Have a small yard for the cows, with a shed on one side, if convenient, with plenty of bedding of straw, or muck, or alluvium, or dirt from the woods, or any other place where it can be spared; throw the droppings into heaps, under cover if possible, and add as much dirt or more every day. On this heap throw everything that can be raked or scraped; old leaves, chip manure, horse droppings, suds, salt, old or new, old brine, &c. Every farmer can do this, and make acres rich every year which otherwise might have to grow poor.—T. P. B., in *Moore's Rural New Yorker*.

Use of Manures at the West.

THE *New York World* has the following:—

"A subscriber to the *Country Gentleman* concludes to stop his paper because too much space is taken up with the 'subject of manure and compost,' alleging that where he lives (Springfield, Ill.,) they 'use these articles for filling up holes in lots and streets.' Springfield has produced some remarkable men, but this indignant gentleman, who considers the attention given to the subject of manures by our agricultural journals a proper subject for complaint, must be an anomaly even in Springfield, Ill."

The last *Moore Farmer* puts a very pertinent query—suggested by this incident.

"An Illinois subscriber to the *Country Gentleman*, writes to that paper to have it discontinued, as he wishes to take an agricultural journal more suited to his region of country. He says, 'You take up a large part of your paper with the subject of manure and compost, when we use these articles for filling up holes in our lots and streets.' We are inclined to believe there is a great deal of truth in this statement, and if so it is a most startling announcement. Are the western people—who have chiefly emigrated from the older States—so regardless of the future interests of the country and their own posterity, as to deliberately practice a system of husbandry which will in a short time render their lands as unproductive as our own—by practising the same system which has rendered our own soil so barren, and compelled them to emigrate to the West in order to raise great crops? Years ago, when our country was first settled, those who located on river farms were considered fortunate in their situation as they would have but a short distance to cart their farm dressing to get it out of their way. To-day we are dependent upon the West for our bread: Europe is also dependent upon the West to a great extent. What shall we do, when the farms of the West, by the system of depletion now going on there are rendered as unproductive as our own?"

Flax-Wool.

We have received from the manufacturers in Dayton, Ohio, some specimens of a substance which they call *er-o-lin*, or wool-flax, and which we are assured can be used by spinners of wool in the proportion twenty-five or thirty per cent. without alteration of the machinery now in use, and without perceptible or material alteration in the quality of the goods.

The inventors of the process by which flax is thus prepared to take the place of cotton in the important and extensive manufacture of "mixed goods"—Messrs. George C. & James C. Davies, of Dayton—have been experimenting for several years, and a year and a-half ago succeeded in perfecting their product and the machinery necessary to prepare it, so that they have since then furnished wool manufactures with such quantities of their wool-flax as their limited machinery enabled them to produce. Thus this substance has been in practical use for more than a year; and it is said to have given satisfaction, and now finds a ready market among that class of manufacturers in the West. It can take the place of cotton in all mixed fabrics in which cotton and wool form the component parts, and has the remarkable property of being worked in any proportions with and exactly like wool—an advantage that no other vegetable fibre possesses in any very great degree. The machinery now set up in Dayton works up several tons of the raw material per day into flax-wool.

In use, spinners treat it precisely as they do sheep's wool, and twenty-five to thirty per cent. can be added without interfering with the fulling or felting of the cloth, while its presence in the fabric can only be detected by experts. It gives strength and firmness to the cloth, and it is supposed will add to its wearing qualities. It has not yet, so far as we know, been spun by itself; but it will require only a slight modification of the railway heads and draw-frames of the cotton-spinners to produce a yarn of ordinary fineness. It would seem, then, that stuff made from this prepared flax should become common in the market.

The operation of preparing the flax is very simple. The rotted straw is spread out on a creeping apron of the first machine or *breaker*, which delivers it at the end, without the intervention of hands, in the form of the best quality of rather short-staple tow, quite free from shives and the greater part of the seed stems. This tow is fed into another or finishing machine of larger extent, where it is freed from the remaining seed-ends, and reduced to a uniform staple of about two-and-a-half inches, ready to be packed into bales of 350 lbs. each, for shipment to the wool-spinner.

We have received some specimens of the flax-wool from the Ohio company's works, which can be examined by those interested in the progress of this most important branch of industry. Farmers should save their flax-straw, which will be in demand if the manufacture of this substance proves as successful as its inventors and those who have used it expect.—*N. Y. Evening Post*.

Swing Gate for Water Gaps.

A CORRESPONDENT of the *Genesee Farmer* contributes the following directions for making a gate that will swing with the current, when the stream over which it is placed is raised by freshets.—

"1st. The abutments should be made of sound logs. The size should be from six to ten feet square, according to the size of the stream, &c. These should be filled half way up with stone; then lay plank or poles across, resting on the logs, after which fill up the rest of the way with stone. In this way the abutments are held firmly in their place, and will stand against hard freshets.

"2nd. The gate can be made of common fence boards, hung by heavy wire, which will turn on the pole easier than standards put through turning the pole.

"Put up in this way, you have a permanent water gap, one that will last for years without repairing."

THE SORGHUM CROP.—Notwithstanding the unfavourable season of drouth and chinch bug, the aggregate crop of sorghum in Illinois is large, and the quality of syrup better than usual. The large establishments are doing a good business, and will make up for the failure of last year. The mill at Bulkley will turn out 700 to 800 barrels, that at Loda about 300 barrels, and many others in like proportion. The product is selling very readily at the smaller mills in the State at \$1 per gallon and upwards. That from the larger establishments will be refined and then put into market.—*Prairie Farmer*.

The Breeder and Grazier.

Horses--Directions to Purchasers.

Of course every man wishes for a sound horse, without defect in wind, limb, or sight. The various imperfections which occur in each of these are here enumerated:

THE EYES.—When the animal about to be purchased is at the stable door, before he is brought out, examine his eyes; the light coming upon them in that situation, will enable you to discover any defect that may exist. Remember that both eyes must be in an equal degree of light, and, regarding this, observe that there is no difference in the eyes, for if they be not alike one must be diseased. If both eyes be clear, and hazel round the pupil, and the pupil itself be blue, and free from any white specks—if it contract in the light and dilate when in the shade, you may conclude the eyes are good. If the eyes be blue round the pupil, or the pupil itself be in the least degree affected with external specks, or deep-seated pearly whiteness, termed contract; if it do not diminish or enlarge, as the light is more or less upon it—in all these cases it is a defective eye. All weeping, cloudy, dull-looking eyes are unsound; and if there be the least appearance in any way of disease in this very important organ, reject the animal. Imperfect vision is often the primary cause of shying.

THE AGE.—Next examine the mouth to ascertain the age.

Yearlings and two-year-olds are alike in mouth, and must be judged by general appearance. At three years old the horse has four *horse-teeth*, two above and two below, in front of the mouth, which supply the place of the sucking-teeth. At four he has eight horse teeth, four above and four below, the corner being only sucking teeth. At five years old, these are gone, and the *mouth is up*, at least with the exception of the inside of the backmost, which, especially in mares, sometimes do not rise until the sixth year; that is, all the teeth are horse-teeth, and the tusk is up on each side of the mouth. A dark mark, or hollow is generally observable in all the teeth of the bottom jaw at five years old; and the tusks are concave in their inner surface. At six, the two middle teeth have quite lost their mark, and the tusk is higher up, and longer, and not so concave. At seven the next two teeth have lost it, and the corner teeth only have the mark left in them. At eight it has grown out of these, and no mark is left at all. The tusks also become longer, and instead of being concave in their inner surface, become convex; the horse is then termed aged. There is, however, a great deal of difference in the mouths; some have lost their mark in all except the corner teeth, even as early as five years old; others have their front teeth in the top jaw projecting over their bottom teeth at the same age. You may form some idea of the age from the appearance of the mouth in general, when the marks are no longer visible. If the corner teeth do not appear long and running forward, as it were, to the front of the mouth; if they retain their square shape, and shut well together; if the tusks are blunt, and have the least concavity on the inner surface, you may conclude that the horse is not very old, particularly if his head be not gray, and not very hollow above the eyes; though this latter shape sometimes exists in young horses. A concave tusk is the most certain criterion of youth; and as mares have no tusks at all, they must be judged by what I have said about the corner teeth, except in some cases of what are called "shell teeth," from their resemblance to the plate-like cakes of shells, and horses with these preserve the appearance of youth till ten or twelve years old.

THE POSTURE.—When the horse is brought out allow him to be placed with his fore legs up hill—because if his joints be at all bent over, or his legs shaken, you will best discover it in such a position.

KNEES.—As the horse stands examine his knees, and ascertain that no marks exist in front of them. These marks are generally the symptoms of having been down, and even were they occasioned by other means than falling, the blemish is the same, and almost equally detracts from his value. Next look inside of the leg just under the knee, and if any scars be visible, or the hair sticks up, you may conclude that he cuts in his speedy or fast paces. Mark well that a similar scar does not exist at the ankle, or hair appear brushed; for such marks are solely produced by the act of cutting, which, as before observed, is generally a natural and therefore incurable defect in action.

THE LEGS.—Take notice that the legs be not tottering, and inclining forward, either at the knee or

at the ankle; and that the ankle joints be large in front. The back sinews, also, should not appear bowed out behind, nor feel thick—the symptoms of their having sustained some injury. The legs should be flat, and not round; neither should they be soft and puffy, but wiry and hard. Both legs should be alike, for if one be larger than the other, it is an injured leg. Never buy a horse for a sound one with a big leg, even though he be warranted. You need not mind a splent, or a bony excrescence on the shank, unless it be so situated as to interfere with the suspensory ligament, or project so much as to hit the other leg in going. Ringbones, or enlargement on the pasterns and coronet, are easily perceived from a difference in the two legs; as it rarely occurs, even when both legs are affected, that they are affected equally. Incipient ringbones will sometimes produce lameness, even before they are observable.

THE FEET.—Be particularly attentive to the feet; for, according to the old saying—no foot, no horse. First of all, observe that one foot should not be less than the other; and that they should not be indented, or hollow around the crust. The crust itself should not be brittle, and broken where the nails have been driven; nor should there exist in it any circular cracks, nor longitudinal fissures from the coronet downward, which last are termed sand cracks. The heels should not be drawn together and contracted; nor should the frog be small and ragged, nor discharge fetid matter, which is a disease called a thrush. The horn at the heel should be as high as the frog; for, if lower, the heels will be liable to corns; and the sole should neither be flat nor convex. It is obvious no horse can continue sound with these imperfections in the feet; and it frequently happens that horses with very finely formed feet, are very lame from a hidden cause within the hoof. Some veterinary surgeons consider such description of foot lameness hereditary. Lameness in the feet (often erroneously taken for and called lameness in the shoulder) frequently proceeds from a slight strain in the back tendon, which, on inflammation falling down to the sensible sole, produces navicular disease, only curable by an operation, and which fortunately is a simple one, in really scientific hands, seldom failing to give relief. If the legs and feet be smooth, you may imagine that all is right in the fore part of the horse.

THE HOCKS.—Next examine the hocks; observe that as you stand on either side of them, there be no projection at the back of the joint, called a curb; and, as you stand behind them, that the inside of the joint down below be free from little knots, or bony excrescences, which are called bone spavins; and on looking at them in a slanting direction, that there be no tumor above, or blood-spavin. Look down between the horse's fore legs for these defects, as it frequently happens that they are better seen from that view. An enlargement of the cap of the hock does not often cause lameness, though it is a blemish; but enlargements on each side of it, which upon pressure fluctuate from the inside of the joint to the outside, are termed thorough pins, which are in fact wind-galls, and often cause very obstinate lameness.

THE HIPS.—Look that both hips be of the same height, as horses are met with having the defect termed down of a hip.

SHOWING.—Having thus examined the horse as he stands, let him run down slowly on a rough or stony declivity, at the end of a halter, without any support to his head, or any whip near him. If he go boldly with his knees bent, and his foot flat and firm to the ground, without dropping his head, you may conclude that he is sound before, and if on running him up hill, he go with his hocks regularly together, and not dragging the toe, nor drooping from the hip, you may buy him as free from lameness. If he go pattering on the toe, and feeling, let him not be bought for a sound one.

LAMENESS—How discovered.—Take notice that in examining a horse for lameness, you may often detect it by looking at his ears; for all horses that are lame before drop their heads when they throw their weight on to the sound leg; and those that are lame behind throw their heads up when the sound leg comes to the ground.

FENCING.—Whenever a horse stands in the stable fencing, that is with a foot under the manger, it is a sign that something exists uneasy to him, and may give you a just reason to suspect unsoundness.

WIND.—With regard to wind, some horses naturally possess greater freedom of breathing than others; for instance, a horse with large, open nostrils, a wide gullet, a short neck, and a deep, wide chest, has generally superior wind to one of the contrary shape. There are two kinds of disease injurious to the wind; one is an affection of the wind-pipe, which creates whistling and roaring; the other an affection of the lungs, which produces broken wind.

The usual way to discover the first of these imperfections, is to go up to the animal in the stall, and

taking fast hold of his head, flourish a stick about him suddenly, or strike him. If he groan, he is a roarer. But this method will not detect a mere whistler; the surest way, therefore is to gallop the horse with a bridle tightly curbed, and at the same time agitate him as much as possible. If he makes a wheezing noise, or blow with the same kind of sound as is produced by blowing upon a knife, placed before one's mouth, he is not sound in his wind. The state of the wind is sometimes ascertained, and with great accuracy, by the sound of the cough, and in the following manner:—Grasp the wind-pipe at the throat tightly, and then immediately let go the hold; the horse is sure to cough. If he cough bullily, that is if the cough sounds like the lowing of a bull, the disease I just mentioned is in existence. But this cannot be often done with the same horse, or it would produce the very disease in question, and is, indeed, a method so delicate and difficult as not to be tried without express permission of the owner, nor with it if you possess any claim to humanity. If he cough short and hacking, the lungs are affected, and he is broken-winded; but if the cough be long and shrill, the wind is good. Be careful to leave hold of the wind-pipe the moment you have compressed it; for if you hold it long, the horse will cough shrill, even if he have imperfect wind.

Always gallup a horse as well as make him cough; a horse with the roaring or the short cough should be immediately rejected.

By making a horse cough, another advantage arises, viz, you may discover if he be affected with a cold; in which case, upon compressing the wind-pipe, he will cough repeatedly.—*Horse Tamer.*

Corn in the Ear.

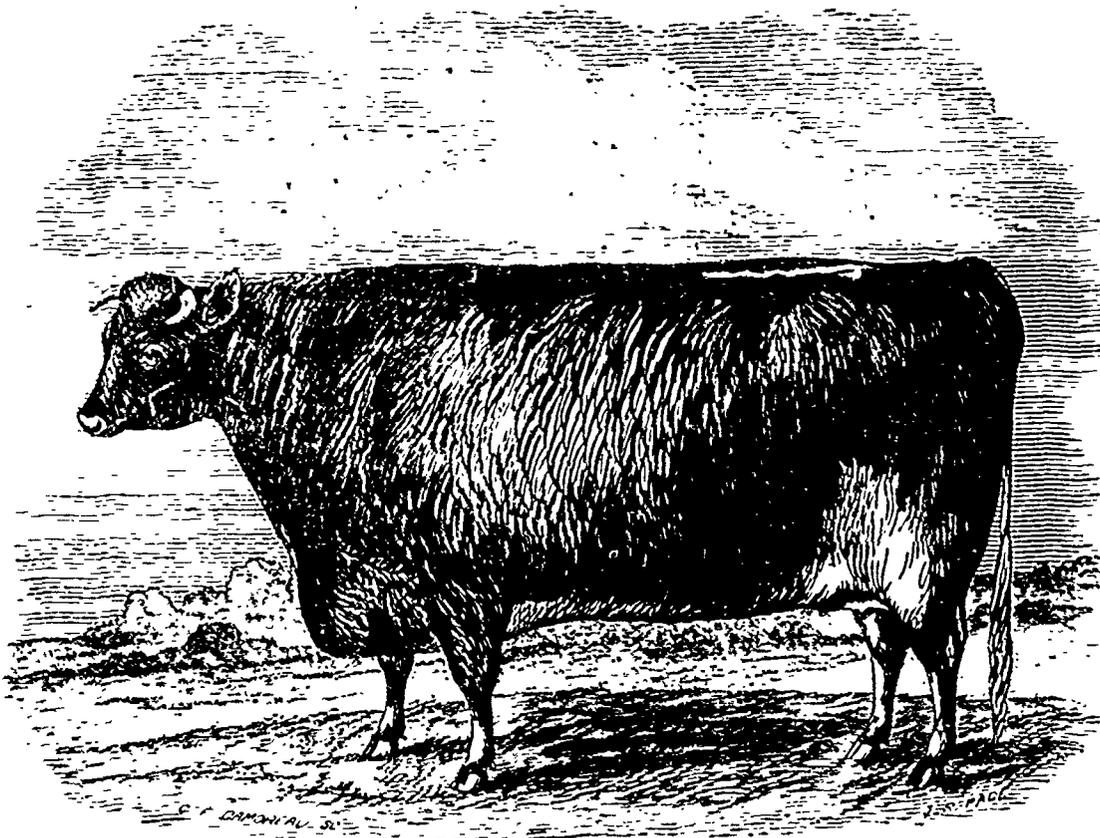
A VERY intelligent Irishman tells the following story of his first experience in America:—

I came to this country several years ago, and as soon as I arrived, hired out to a gentleman who farmed a few acres. He showed me over the premises, the stable, cow-shed, and where the corn, hay, oats, &c., were kept, and then sent me to get my supper. After supper he called to me.—"James, you may feed the cow and give her corn in the ear." I went out and walked about, thinking what could he mean. Had I understood him? I scratched my head, then resolved I would enquire again; so I went into the library where my master was writing very busily, and he answered without looking up, "I thought I told you to give the cow some corn in the ear." I went out more puzzled than ever. What sort of an animal must this Yankee cow be? I examined her mouth and ears. The teeth were good, and the ears were like those of kine in the old country. Dripping with sweat, I entered my master's presence once more—"Please, sir, you bid me give the cow some corn in the ear—but did't you mean in the mouth?" He looked at me for a moment, and then burst into such a convulsion of laughter. I made for the stable as fast as my feet could take me, thinking I was in the service of a crazy man.

BREEDING SHORT-HORNS.—How is it, a correspondent asks in substance, that the best short-horn families run the greatest risk of being spoiled by bad crossing; and that many families, once famous, have been spoiled irretrievably? It is too plain to need proving that good buyers are not necessarily good judges, and that plenty of money is an indifferent guarantee for plenty of wisdom in the use of it. Short-horn breeding is a fashionable pursuit as well as an important branch of national trade; and not unfrequently men of wealth, who can bring no requisite but cash, rush into it with insatiable ardour. The sorts most in vogue are secured. Dealt with in ignorance, they speedily degenerate. Their owners, unacquainted with the great principles implied in the cultivation of improved stock; knowing nothing of typical resemblances and differences; and concluding that all sires, if well to look at, are equally well worth employing, soon disturb, by ill-considered appliances, the peculiar characteristics of their purchases, and at length have little left beyond the name of what was once excellent. The reverse of what Sir John Cutler did, as related in the memoirs of Martinus Scriblerus, they do. Sir John had a pair of black worsted stockings, which his maid darned so often with silk that they became at last a pair of silk stockings. It is with them silk stockings that are darned with worsted; crossed and re-crossed with inferior bulls until the power of the blood they started with is but the shadow of a shade. The truth is, and it is notorious, that many persons (breeders, perhaps, we ought to call them) use bulls with as little knowledge of what they are doing as a man takes one of two roads where there is no finger-post to guide him.—*Bell's Messenger.*

FIRST-PRIZE THREE-YEAR-OLD SHORT-HORN COW AT THE PROVINCIAL EXHIBITION, HAMILTON, 1861.

The accompanying illustration represents a very fine animal, belonging to the late valuable importation of Shorthorns from Britain, by the Hon. David Christie. Like her elder sister, the "Queen of Athelstane," whose portrait we gave in No 22 of last volume, she is a capital specimen of the present fashionable type of the improved Short-horn. The style of breeding evinced by these animals indicates great care and skill in this difficult art. Mr. Douglas occupies a prominent position among the most celebrated of British breeders. The "Prize," like the "Queen" of Athelstane, has won first premiums at several of the na-



PRIZE OF ATHELSTANE.

tional and leading provincial shows of Great Britain; and we congratulate the present owner of such excellent stock, as well as the country at large in possessing so valuable an acquisition. The following is her pedigree.

PRIZE OF ATHELSTANE
 Red and a little white, calved July 6, 1861, bred by Mr Douglas, Athelstaneford, Scotland, the property of Hon. David Christie, "The Plains," Brantford, C.W., got by Sir James the Rose (15290), dam Lady of Athelstane, by Hymen (13058.) g dam Playful, by Fourth Duke of York (10167.) g g dam Place 3rd, by Fourth Duke of Northumberland (3619.)

g g g dam Place 2nd, by Duke of Northumberland (1910.) g g g g d Place 1st, by 2nd Earl of Darlington (1915.) g g g g g d Place, by Son of Second Hubback (2682.) g g g g g g d a Cow of Mr. Bates's, Kirklevington.

The Dairy.

Cheese-Making.

Of late so much has been said about associated dairies, and factory cheese-making, that the small dairies, which now supply no small share of the cheese for home consumption, are nearly, or quite lost sight of. A small portion only of our rural population are so situated, as to take advantage of "Cheese Factories," &c To such information of the usual process in cheese-making, where but few cows are kept, is of importance, especially if inexperienced. Every dairy-woman must learn from experience. The inexperienced would learn much by visiting the dairy of some experienced dairy-women before commencing on her own account although there is little fear of failure when a common sense woman attempts to make cheese, even on a small scale. Where not more than half a dozen cows are kept, the following process is usually adopted:—The night's milk is set in tin pans; the milk not more than two to two and one-half inches deep. In the morning the cream is taken off while the milking is going on, and the milk warmed to the temperature of new milk in a brass or tinned kettle. This, and the new, are then mixed in a suitable tub. When thus made ready the rennet is added, and allowed to stand quietly for half an hour, for the curd to come. If colouring is desired annatto is added. The rennet (which is the stomach of the calf salted and dried) is prepared for use, by soaking in water or whey in a suitable dish. The quantity of liquid to bring the curd is fixed by trial, more being added if it does not come in time. After the curd has come, it is carefully cut across both ways with a suitable knife, and allowed to stand for the whey to separate, which is slowly dipped off and the curd worked gently with the hand to facilitate the separation. Some of the whey is warmed in a kettle, to feel slightly warm to the hand and poured over the curd, in order to make it more firm. The curd is then dipped into a strainer, spread in an open basket, for salting. More whey drains out and salt is added, and thoroughly mixed. The exact quantity

of salt to use is hard to be told except by taste. A little less than one ounce to ten pounds of curd is usual. It is now ready for the press, unless a double curd is desired, in which case the salting is omitted, and the curd, wrapped in the strainer, and placed under a weight, and kept till the new curd is ready the next day, or instead of being scalded, and placed under a weight, it is preferred by some to hang it up in the strainer to drain. This is cut up fine and mixed with the new curd, and both scalded and salted. A strainer cloth is used in the press hoop, to hold the curd while pressing. At the end of twelve or twenty-four hours it is changed; if necessary, the edges are pared and again pressed. The pressure, at first light, should be increased to very heavy at last. Small cheeses need no caps to hold them in shape usually. When desirable, they should be capped with thin cotton, immediately after being taken from the press, or the caps may be pressed in. The curing room should be neither too warm, nor cold and damp, as in either case the cheese will injure. Turning, greasing and rubbing, to keep the cheese from mould and getting out of shape while curing, is the finishing process. *Dairyman, in Rural American*

Cheese Factory in Dunham, Missisquoi County, C. E.

A CORRESPONDENT of the *Montreal Gazette* sends that paper an account of the introduction of the Cheese Factory system into Lower Canada, which we copy with much satisfaction. The writer is, however, in error as to this being the first establishment of the kind in Canada. Mr. A. Smith, of Norwich, C. W., has the honour of being the pioneer in this business. We are glad to note the multiplication of these institutions.

DUNHAM, MISSISQUOI COUNTY, C. E., }
 December, 31, 1861. }

An enterprise has recently been started at this place namely, a "Cheese Factory,"—a building with all the appurtenances which are necessary for making cheese upon a large scale, and with the best economy of time and labour. The plan is not entirely new, as similar establishments have, for a few years,

been in operation in some dairy sections in the United States. But, so far as I know, this is the first one of the kind in Canada, and Mr. Eber E. Hill is the pioneer. In order to justify the necessary outlay, which is \$5,000, he first obtained pledges from farmers in the neighbourhood that each of them would deliver to him the milk of a certain number of cows during the cheese-making season for a term of five years. He has 500 cows thus pledged. The milk, as it is brought in, is weighed and credited to each party; and the cheese, when it is ready for market, is taken by each customer according to the amount of milk supplied, one cent per pound being paid for the manufacture. By this plan, the wives and daughters of the dairy farmers are relieved of a great amount of hard work connected with the ordinary mode of domestic manufacture, and the cheese produced is of a uniformly good quality, and will command a higher price in the markets. The enterprise can hardly fail to give satisfactory results to all connected with it. The farmers of Missisquoi County are giving more attention of late to the improvement of their soils. They find by experience here—as good farmers elsewhere find—that it is difficult to keep up the fertility of the land under constant cropping and grazing for a long term of years. After applying all their farmyard manure, they still require something additional to prevent their farms, as a whole, from getting poorer, and they are giving considerable attention to artificial manures, particularly to super-phosphate of lime. I have just received, in regular course of business, some letters containing statements of results of experiments here with super-phosphate. They contain sufficient general interest and importance in their bearing upon the improvement of soils and the increase of crops in the Province at large, to justify their appearance—with your permission—with this communication. E. L. S.

BEDDING COWS WITH SAND.—At the State Almshouse, Mass., the manager of the farm beds his cows regularly with sand, which he considers superior to any other substances for that purpose. It is warm, easy to lie upon, prevents the cows from slipping when reaching for food, is an excellent absorbent of liquids, easily shoveled in and out, a superior divisor of droppings, and is an excellent substance to supply to cold lands. For these reasons he likes sand for bedding.

Distribution of Milch Cows in the U. S.

By reference to an article published in the Agricultural Report of 1861, entitled "Consumption of Milk," it will be found that about fifty per cent. of all the milk produced in the United States is directly consumed as food, and that the remainder is manufactured into butter and cheese. It will also be found that more than one-half of the butter and cheese is consumed by the manufacturers, so that at least seventy-five per cent. of the milk produced is consumed at once in the locality of its production.

This constitutes the principal demand for cows, and as nothing can supply their place, the demand can only vary with the population. This is plainly shown by the following statement, which gives twenty-seven per cent. as the constant requirement for the past thirty years. Nothing could be more plainly stated. In all the varying circumstances that have occurred, while we have doubled our territory and our population, the constant demand has required twenty-eight cows to every one hundred people. In 1870 the demand will be the same, but from the constant decrease of neat cattle in general throughout the country, the number actually reported by the census of 1870 may possibly fall to twenty-seven.

A remarkable feature in the distribution of milch cows is seen by comparing the southern with the northern section of the country. At no time within the last thirty years has any Southern State, with the exception of Louisiana, Virginia, and North Carolina, had less than the required number of milch cows, namely, twenty-eight for every one hundred people. On the contrary, their average per cent. is far above. At the same time, Maine, Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, Kentucky, Michigan, Minnesota, Tennessee, Virginia, and Wisconsin have not, at any time within the past thirty years, had the average number of milch cows.

Massachusetts and Rhode Island have not one-half the average number required. In these States this deficiency is undoubtedly partly made up by the cows being of a better breed; but it is more probable that in these States a large part of the milk is used for food, and the butter and cheese supplied from other sources. We also find that Florida, Georgia, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, and Kentucky have largely diminished their number of milch cows in the past ten years. In general, all of the southern part of the United States has largely diminished its stock of cows, and yet is better supplied than the northern sections. In the north, Connecticut, Delaware, Massachusetts, Maryland, New Hampshire, New York, North Carolina, Pennsylvania, and Virginia have all, with the exception of New Hampshire and New York, less than the requisite number, and have varied in the last thirty years less than two per cent. Iowa, Indiana, Wisconsin, and Michigan have considerably increased their stock, and doubtless the central west will soon more than supply the east with the required amount of butter and cheese.—*Report Department of Agriculture for 1863.*

Stock on Dairy Farms.—An interesting paper was lately read before a farmers' club in Cheshire, on the "requisite necessary for the successful management of a farm," in the course of which the author, Mr. Daine, remarked that on a dairy farm, "your chief business will be the selection of your cattle, and your judgment will be put to the test as to your knowledge of the milking properties of a cow. We would say buy such stock as your land will carry. If your land be good, sound, rich land, then it will carry well-bred and large cattle; if wet or thin skinned land, then Welsh, or Ayrshire, or cross-bred small cattle will be more suitable. But in any case select such as will fill your cheese-tub rather than adorn with their marble beauty the butcher's stall. On poor or medium soils it is questionable whether any breeds will leave more profit than properly selected Welsh cows and crossed with a well-bred Shorthorn bull."

He also strongly urged that "if you want to make a large quantity of cheese, your cows, both before and after calving, must be kept up to the mark with proper nourishing food, so that after feeding good calves you may commence to make a large cheese, and to continue your good start, you must turn out to good dry pastures, well manured, and thus of good herbage. To keep up your make of cheese in the autumn when grass begins to fail, demands your special attention; and I know of nothing better or more economical than having a proper supply of common turnips, grown after rye and vetches, early potatoes, or grown as a self crop."

Rural Architecture.



Cheap Piggery and Corn House.

The above illustration of a farm-building is designed for a small farm, where only a few hundred bushels of Indian corn are raised, and where only a few swine are kept.

It is 14 feet wide at the base, and about 16 feet wide at the plates, and 20 feet long, and 8 feet to the top of the plate. The frame is built in the balloon style, except that the studs at the lower ends are morticed into the sills, inch boards, 6 inches wide and 16 feet long, are nailed on the studs for joists, which make the upper floor come just to the lower side or bottom of the door, in the gable end of the building, which is hung on hinges to open upwards. A door of slats is made in the end of each crib, as shown in the end of the building; and the ears of corn can be shoveled directly into the cribs from the wagon on to the main floor, or into the attic window.

The door-way is about 8 feet wide, and the cribs 3 feet wide on the bottom, and ventilators placed lengthwise in the cribs.

The building was erected on a substantial stone wall, and in the rear of the building is a door to enter the feed room, which is 6 feet wide and 11 feet long.

The apartment for the animals is about 14 feet square, and the three-lighted window in the wall opens into the apartment of the swine, and the four-lighted one into the feed room.

On the opposite side of the building is a window into the feed room, and a door where the animals enter their sleeping and feeding apartment.

The apartment of the swine is 4 feet high in the clear, while in the feed room it is 6 feet in the clear, and there is sufficient room for swill barrels, meal-box and a small furnace for cooking food if desirable.

THE PARTITION AND TROUGH.—A trough made of plank 10 inches wide and 4 inches deep—which is sufficiently deep for holding all the swill that will be fed at one time—extends entirely across the pen, between the feeding room and the swine's apartment. The partition is made of a flap-door or kind of board gate, hung on hinges, directly over the trough, to a sleeper or beam overhead. The bottom of the flap can play from one side of the trough to the other, and a wooden button holds it at either place.

When feed is put into the trough, the flap is fastened to that side of the trough near the swine; then as soon as their feed is arranged in the trough, the flap is drawn to the other side of it, and secured with a button, when the swine all come up to the trough.

At one end of the flap there is a small door where one could enter the apartment of the swine from the feed room. Directly over the trough is a small door, about 2 feet square, through which grain can be obtained from the floor of the corn-house.

The floor of the corn-house is 20 feet long; but a portion of it, 6 feet long, which is over the feed room, is 2 feet higher than the other part, which is about 12 feet long and 8 feet wide, which affords ample room for assorting corn or for threshing it with a machine.

A few loose slats are placed against the studs on the inside as the cribs are being filled, and when it is desirable to get ears out of the crib are slipped a little endways with a crowbar, and the corn will slide out as fast as it is shoveled away, and no faster.—S. E. Todd, in *Tucker's Annual Register*.

TO STOP LEAKAGE AROUND CHIMNEYS.—Remove the shingles and fit them again close to the sides of the chimney; then mingle a lot of coal tar and sand together, making a stiff paste; spread it neatly all around the chimney on the roof and press it down hard, and the water will be effectually excluded. This plastic material will adhere to both the brick and the shingles; and neither frosts, rains nor dry weather will cause it to peel off.—S. E. Todd, in *Annual Register of Rural Affairs for 1865*.

FARMERS' PAINT.—Farmers will find the following profitable for house or fence paint.—Skim milk, two quarts; fresh slaked lime eight ozs.; linseed oil, six ozs.; white Burgundy pitch, two ozs.; Spanish white, three pounds. The lime is to be slaked in water, exposed to the air, and then mixed with about one-fourth of the milk, the oil in which the pitch is dissolved to be added, a little at a time, then the rest of the milk, and afterwards the Spanish white. This is sufficient for twenty-seven yards, two coats. This is for a white paint. If desirable, any other colour may be produced; thus, if a cream colour is desired, in place of part of the Spanish white, use the ochre alone.—*Working Farmer*.

MUFFLING THE CRACKS OF A DOOR IN WINTER.—Dress out some wooden rods, about half an inch or more square, and cover them with strips of woollen cloth. Strips of list wound around these sticks will subserve a good purpose; now close the door and nail the strips on the door, not on the casing, as it is usually done, close in the corners, on the sides and at the bottom and top. A door can be made air-tight or wind proof more perfectly by nailing the strips on the doors than to nail them on the casing, as it is usually done. When muffs are put on a door in this way, a door will shut easily but very close and tight. It would be a good improvement to fasten them on with small screws, as they could be more readily taken off in warm weather.

CAPACITY OF BARN.—Very few farmers build their barns with any precise calculation as to their capacity or fitness. They guess at their contents and conjecture their adaptation. Not unfrequently it is the case that the barns are too narrow for the crops and too unhealthy for stock. It has been found that every ton of hay or straw requires 500 to 600 cubic feet. A horse should have seventy-five square feet of space; a cow forty-five feet; and sheep about ten feet. A bay or mow, forty feet long and 19 feet wide, holds a ton of hay for every foot in depth. The basement of a barn, 40 by 75 feet, according to this calculation, will stable thirty cattle, one hundred and fifty sheep, and eight horses, and the upper part hold all their winter fodder. A friend of ours has an octagon plan with 30-foot sides, that seems admirably adapted to dairying stock, on level ground, which we hope to see developed. A barn cellar is a poor place to keep stock, and especially horses. Experience teaches that the dampness of the ground renders animals or men liable to take cold.

THATCHING BUILDINGS.—A gentleman from Iowa writes me, inquiring as to thatching buildings, requesting an answer through the *Country Gentleman*. When abroad I saw frequently the thatched buildings, stacks, &c., and many of the buildings must have had the covering on for many years, and it was still useful as roofing. The manner of putting on the thatch is this: The straw should be fresh and sound, without bruises if practicable. Wheat straw is best for the purpose, though rye is used where wheat cannot be had. When long straw is made use of, the operator begins at the eaves or bottom of the roof, depositing it in handfuls in regular breadths, till the top is reached—the different handfuls being so placed endways as to overlap each other, and the upper ends being constantly pushed a little into the bottom parts of the sheaves. In this manner the operator gradually proceeds breadth after breadth, till the whole roof is covered, which is usually done to the thickness of four or five inches. To retain the thatch in its place, short sharp pointed sticks are occasionally thrust in, in a slanting direction upwards; but as the water is apt to follow the course of the sticks, it is a better practice to make use of ropes or twisted straw for the purpose, and the thatch carefully prepared and secured, will last for a long time. This is a brief outline of a thatch upon a stack or roof of building. The inquiry is made how long will a thatched roof last? If made complete, five inches thick, and carefully attended to, it will last as long as the wooden erection which it covers. I inquired a few days since of an English gentleman from Canada as to the durability of thatch-roofing in Great Britain—he said they will last for ages. Where straw is as plenty and cheap as in Iowa, I should think a thatched roof a good investment.—J., in *Country Gentleman*.

Sheep Husbandry.

Leicester Sheep.

THE following remarks we take from a communication of Mr. Thomas Robertson, a successful Border breeder, in Scotland, that appeared in a recent number of the *North British Agriculturist*. They are more or less applicable to what are called Leicester sheep in Canada; a breed with us rarely found pure, and admitting of very great improvements. With respect to what is said about bare legs, bellies and heads, so often seen, it is matter for grave consideration in a climate like ours, and our readers will find the statements and suggestions of Mr. Robertson well deserving of attention:—

"These fine sheep have already great size, with a propensity to early maturity; but one of their great deficiencies is want of wool, and of the right sort. Not only is the wool in most instances grown upon the Borders too close set—too muffy, if I may use the word—but the animals in too many instances have their bellies, fore-arms, and inside thighs uncovered. Why should this be, or why should the very superior intelligence in the flockmasters upon the Borders be unequal to the task of breeding sheep with the fine, open, curly fleece so indicative of superior quality? This is the sort of wool that now-a-days is in most request, and therefore commands the highest price; and all flockmasters should set themselves to acquire it in their flocks. We see also in animals possessing this sort of fleece there is not only a remarkable propensity to acquire flesh, but at the same time an absence of bare bellies, of bare fore-arms and thighs, and instead you have a pure Leicester sheep thoroughly well covered with the most valuable kind of wool. This reform in breeding could be easily introduced upon the Borders and in Scotland generally, by careful selection of tups; and by that means, and perhaps in some instances by a little more generous treatment, a much heavier and more valuable crop of wool would be shorn annually than there is at present, probably to the tune of 7s. 6d. a head.

"There is also, as I have already pointed out, a very great error committed in many instances upon the Borders, in using tall, long-legged, or what are called up-standing sheep; and I must respectfully say, that in acting upon such an idea there is neither sense nor reason. Has any breeder or feeder failed to observe that in fattening out cattle for the butcher, the long-legged ones are the latest in finishing, and bring the least money when sold? Now, the same rule holds in regard to sheep, and so I have no hesitation in telling those breeders who choose high, up-standing rams for their ewes, that they are directly and wilfully breeding an inferior kind of animal.

"Then take the long-legs in connection with the hard handling and bad quality which you almost invariably find as an accompaniment. So surely is this the case as a rule, that in looking over the many pens of rams exhibited at Kelso, I have latterly from experience, never almost in a single instance, thought it worth my while to handle such sort of animals; and when I have departed from the rule, either to please a friend or satisfy my curiosity, I have invariably found the high animal and the hard back together. I know the idea is that a high, up-standing ram is the most suitable for using to half-bred Cheviot or Blackfaced ewes, but such is an utter fallacy, and contrary to every right principle in breeding for improvement. It has been proved over and over again that the first requisite in breeding whether pure or cross animals, is quality in the male. Get vigour, size, or roominess in the female to any possible extent, but above all get quality in the male, and in this way rapid improvement may be looked for. In a sheep especially a fat back is an indication of quality, and this point I would respectfully commend to all breeders of tups on the Borders, as the very first thing to be desired. In short, I would reject the finest looking ram which was deficient in quality or in width of chest, both before and underneath.

"In addition to a large fleece of curly wool, good handling quality, short legs, and great substance, there should be in a male especially, good shoulders—that is, shoulders well laid on to his ribs, for no animal can travel properly with clumsy, upright shoulder-blades, nor will a coarse, ill-made shoulder be easily or properly covered with flesh; and also a strong, muscular neck, running nicely into his head, which should be well carried and handsome, and well woolled up to his jaws and skull. A muscular neck, with a full neck vein, as it is termed, are indications of health and condition, and should be invariably looked for in choosing a ram.

"My only apology for reiterating these views through your columns is a sense of their importance, and the certainty that their adoption generally would quickly effect a great advance in many respects in the further improvement of what is no doubt already a most valuable breed of sheep; and in corroboration of my views, I may remind those of your readers who recently visited the showyards of Newcastle and Stirling, that the successful "Border Leicesters" on both occasions were (when exhibited in the respective classes) sheep of the kind and class which I have endeavoured, however imperfectly, to describe, viz., compact, yet large, woolly sheep, on short legs and of good quality, or, in other words, true Leicesters."

CABBAGES AND APPLES FOR SHEEP.—J. R., of Buffalo, N. Y., is informed that cabbages and apples, (particularly sweet ones), given daily in moderate quantities, are usually regarded as highly beneficial fall and winter feed for sheep. Our friend Thomas Gorby, of Ohio—a highly experienced and skillful flockmaster—is of the opinion, however, that feeding a portion of his breeding ewes freely with sweet apples, last winter, caused them to bring forth uncommonly small, weak lambs, most of which perished. At all events his ewes so fed produced such lambs, while those fed differently produced good, strong lambs. Will others who have fed their breeding ewes sweet apples, apprise us of the result?—*Rural New Yorker*.

The Apiary.

Taming Bees.

By skillfully operating upon the five senses of the bee, viz. seeing, hearing, touch, taste, and smell, they can be subjected to the control and will of the bee master. An entire swarm can be tamed in two minutes, so that they can be handled fearless of their defensive weapon.

Reason teaches us that they should be carefully handled, avoiding all jostling or pressure. Man himself, when abused or roughly handled, is not free from a feeling of resistance, or quick defence. Why should bees, then, armed defensively by nature, not retort, when under a sense of pain or restriction, caused by an attack on themselves or their possessions?

One rule bears thoughtfulness—never manifest fear while operating with them. Whatever is attempted, let no cowa dice be witnessed by the bees; avoid all offensive motions of the body, such as striking or attempting to disperse those surrounding your person—you may imagine that their intention when they swarm around you is to sting you, when really they do not mean to do so.

By no means let a "panic" seize you, and a retreat be sounded; let their buzzing arm your confidence, stand firm; they will not sting until the "buzz" is reduced to a finer note, when, by looking steadily on the ground with the head bowed down, or putting your face in shrubbery, they will soon leave you. But should you decide on a hasty retreat, let it be done only as a "military necessity." Change your "base" quickly, and fall back silently, that the attacking party may be ignorant of your designs. In case the bee-keeper should excite his bees, and they become cross and ungovernable, it is then advisable for him, as a precautionary measure, to make use of a bee-protector or head-dress.—*Nature's Bee Book*.

AN AMERICAN BEE KING.—I have just returned, writes M. M. Baldrige, (a well-known American writer on bees), from the State Fair at Decatur. One of the "curiosities" on exhibition at the fair was an individual from Ohio—by some denominated the "Bee King!" He fooled the people out of several hundred dollars with some stuff he called "bee-charm!" He had a small swarm of bees in his cap, and tried to make the people believe that he could call bees out the woods back home, in case they should decamp after swarming. I told the people that he had the queen in his cap, which was found to be true. He kept her in a wire cage, which was concealed under some fringe. His cap was made for the business. He understands the trade admirably of catching "gudgeons!" How strange that old beekeepers should be so easily duped.

TO DESTROY BEE MORNS.—Take a pan of oil or grease at the time the miller is ready to begin to lay his eggs, and insert a wick in the middle of it, and light about dark, set it near your bee-hives, and the millers will be attracted to the light, and being blinded by it, will readily drop in the grease and die.

Entomology.

Destruction of Insects Injurious to Vegetation.

THE increase of insects which prey upon field and garden crops in some sections of the country is a source of constant solicitude to the farmer. In spite of all his efforts to destroy them, they increase in numbers from year to year, and dispute with him the products of his soil. The fact has been noticed by almost all observing farmers that upon new ground there is always the greatest exemption from the ravages of the vermin which are destructive to vegetable life. For instance, the black bug upon squashes, the onion worm, the Hessian fly, the chintz bug, and many other insect pests, seem to increase in number from year to year, and frequently defy all efforts for their extermination. It is known that the black squash bug spends the winter in a torpid state, in the holes of fences and stone walls, and in very close proximity to his summer feeding grounds, and that he comes forth full fledged to renew his work of destruction upon the tender vines early in the ensuing summer. The eggs of many other insects are deposited in the straw or on the ground, which has furnished the parents with food and lodging during the summer, so that when hatched by the warmth of the season, the young may find their appropriate food close at hand. Thus, the longer a piece of ground is cultivated with any particular crop, so much the more numerous will be the insects which prey upon it; for all the conditions being favourable, they multiply in compound proportion the longer the system continues. Especially is this the case upon those fields where a regular rotation is not considered necessary to success. This fact would seem to suggest that a change of the crop would prove very advantageous in all cases. Thus, when a piece of land that has been allotted to onions for several successive years becomes unreliable by reason of the depredations of the maggot, the readiest way to clean it would seem to be to cultivate some other crop, one not at all adapted to the taste of the insects which occupy the ground. We think our onion-raising friends in Marblehead, Danvers and elsewhere, would have far less reason to complain of the ravages of the worm if they should occasionally alternate their onion fields with tobacco; for which crop the lands would be generally found in most excellent condition. Though possessed of a very strong stomach, it is doubtful if an onion worm would sustain life by chewing tobacco; and of course the larvae of innumerable multitudes would be hatched only to perish for want of proper food.

This view of the case finds ample confirmation in the results of thorough investigation in Europe, from a statement of which the wheat cultivators of the West, whose crops are becoming more and more uncertain every year in consequence of the ravages of "the fly," may derive a lesson of especial advantage. In a recent communication by Mr. Olivier, a member of the Institute of France, to the Royal and Central Agricultural Society of Paris, a description was given of all the insects which live upon the crown or collar of the roots of the grain-bearing grasses, such as wheat, rye, barley and oats; in which it was shown that "they multiply themselves without end when the same soil presents the same crop for several years in succession, or even crops of analogous species. But when a crop intervenes upon which those insects cannot live, as beans, beets, turnips, after wheat and oats, then the whole race of insects perish from the field for want of proper nourishment;" and the next year the farmer can return his land to the accustomed tillage, without apprehension that the insects will rob him of the proceeds of his toil.

A hint of so much practical importance from such a reliable source ought not to be lost upon farmers and market gardeners of the United States, who reckon as not the least of the difficulties with which they have to contend, the fact that so large a portion of their produce "goes to the bugs" every year in spite of all their efforts to prevent it.—*Maine Farmer*.

CHINCH BUG IN WHEAT.—A. W. PEASE of Salem, Wis., writes the *Rural*:—"To prevent the chinch bug from destroying wheat, at the time of sowing your wheat mix a small quantity of Hungarian grass seed with the wheat and the bug will not interfere with the wheat until they have destroyed all the grass; by that time the wheat will be too forward for them to injure it. The grass will not injure your wheat if no bugs appear. Pigeon grass will answer the same purpose, but when that is once in the land it is not so easy to get rid of it. The Hungarian will not live over winter. Try it."—*Rural New Yorker*.

Veterinary Department.

Diseases of the Horse's Foot.—Navicular Disease.

The majority of cases of lameness occurring in horses arise from disease of the foot or from injury to it. Horses, when running in their natural, wild state, are not so subject to disease as when domesticated and subjected to the use of man. When macadamized roads and causeways are substituted for soft lawns and pastures, we find that this organ is exceedingly liable to disease or injury.

The first disease we will notice, and a very common one in Canada, is that called Navicular disease, or Grogginess. This arises from laceration of the fibres of the perforans tendon as it passes over at an acute angle the navicular bone to become inserted into the solar surface of the coffin bone. At one time it was supposed to be produced directly from disease of the navicular bone, but most writers now agree that the primary cause of navicular disease is rupture of the fibres of the tendon already mentioned. The tendon being lacerated, as a consequence becomes inflamed, and the inflammation extends to the surrounding structures, particularly involving the navicular bone and joint, whereby the secretion of the lubricating fluid of the joint is, to a great extent, stopped. As the disease advances, friction takes place betwixt the tendon and the bone. The articular cartilage becomes stripped off the bone, and ultimately ulceration is established, which sometimes ends in absorption of the synovial sac, and of course gives rise to an incurable disease. Besides the acute disease in the bursa, it also extends to the more distant tissues of the foot, causing in many cases contraction of both the sensitive and the insensitive structures of the foot. We have no hesitation in saying that navicular disease is the most common disease occurring within the foot of the horse, yet it is only within the last thirty or forty years that its true nature has been found out. Previous to the year 1820, contraction of the foot was thought to be the most common cause of lameness in the foot, and the treatment of course was directed to the removal of the contraction; but even when to external appearance all signs of contraction had been successfully removed, the lameness still remained. Again, in very many cases, the foot appeared contracted, and in numerous instances the contraction was so great as to bear scarcely any resemblance to the circle of the natural form of the foot, and yet horses so affected would go perfectly sound. It was also found that in many cases the foot was not contracted in the least, but square and open at the heels, and yet the animal was a confirmed cripple, when, in fact, to look at the foot (without seeing the horse move), no practitioner would pronounce it bad or contracted. Such circumstances, of course, led to the more thorough investigation of the horse's foot in a diseased state, when the true seat of the inveterate lameness was discovered, and as a consequence a more successful mode of treatment adopted.

The causes of this disease are somewhat varied, and in many animals there exists a certain hereditary or predisposing cause, in so far as there are certain forms especially subject to it, such as horses with narrow chests, upright postures, and out-turned toes, and a sort of want of adjustment between other parts of the limbs. Horses in which this conformation is decided, can scarcely fail to become groggy, even with average work, for the distance between the point at which the perforans tendon is inserted into the coffin bone, and that at which it passes over the navicular bone is so short, and the angle it makes so acute, that the tendon acts at a mechanical disadvantage, and is constantly liable to strain. The exciting causes, however, may be denominated continued hard work, upon hard roads or streets, or severe and continued exertion of any kind. It also very often occurs suddenly. A horse may make a stumble or a bound, and immediately afterwards go lame, which in all probability is due to the rupture of the fibres of the tendon within the foot, as upon making an examination, the leg appears perfectly sound, no hurt or swelling being visible. We have often met with cases where the horse became suddenly lame, and to such a degree, that he was scarcely able to move, and this caused by injury to the parts mentioned. It has been held that shoeing is a common cause of

navicular disease. In our opinion it is not, for the disease has been known to exist in horses that have never been shod.

The first symptom of navicular disease which strikes attention is lameness. Now, this lameness may come on suddenly, and be very severe, or it may appear by degrees, the horse being a little lame at first, and gradually becoming worse. It is not an uncommon occurrence that on riding along the road, the horse will make a stumble and immediately fall lame. The rider on dismounting and examining the foot expecting to find a bruise from having trodden upon or picked up a stone, will perhaps be surprised to find to external appearances, nothing whatever the matter with either the foot or leg. The horse is taken home, the shoe removed, and the foot pared out, and still no symptom of disease is observed. After standing for eight or ten days in the stable, he is again taken out, and very likely will go perfectly sound for some time, when all of a sudden he again gets lame, and then begins to shew unmistakable symptoms of this disease. In other cases, the symptoms are such although not noticed by a common observer, that the regular practitioner cannot fail to detect the disease in question. When the horse after becoming slightly affected is kept at work, the lameness in some cases is somewhat transient for a time, but cannot fail to become constant and severe. When the disease advances the symptoms become well marked. The horse when standing points the foot affected. If both feet are diseased, he is constantly shifting and pointing his feet, and on being led out after being some time in the stable, he walks with a cautious tripping gait, which becomes less and less as he is waded up, in fact, in some cases after being rode or driven for two or three miles, he appears to go perfectly sound. When the disease is of long standing, the muscles on the outside of the shoulder and arm gradually waste to a considerable extent. This arises from the horse being afraid to put his leg forward in his usual manner when sound. The muscles from the want of their proper exercise, become atrophied, and in many cases there is quite a hollow part extending from the top to the bottom of the shoulder. This atrophy of the muscles is very often mistaken for the cause of the lameness, and we often find a difficulty in convincing the owners of our patients that the foot is the real seat of the lameness.

Many a poor horse affected with navicular disease, shewing the symptoms mentioned, is subjected to the most barbarous and unscientific treatment, for the supposed cure of the wasting of muscles of the shoulder. Another symptom is the wearing of the toe of the shoe. The horse endeavours to tread upon the toe of the foot to save the heel. In old cases, the horny sole over the region of the coffin joint is often a little discoloured, and by tapping with a hammer over the bars he will immediately evince pain.

The cure of this disease is easier spoken of than performed, for though we may employ means to abrogate the symptoms for a time, the disease often remains. The treatment we recommend, in recent cases, is to remove the shoe and pare out the sole until it yields readily to pressure, and have the foot immersed in hot water for a considerable time. Afterwards, apply a large poultice of bran or linseed meal, the poultice to be renewed three times a day. At the same time it is found beneficial to administer a dose of purgative medicine, and restrict the patient to a moderate allowance of food. Such treatment should be kept up for six or eight days, at the end of which time the patient may be walked out. If he goes tender, the same course of treatment may be adopted for another week, after which, if the least symptom of lameness remains, a sweating blister should be applied around the coronet, and the patient not removed out of the stable for a period of two weeks. In some cases we have also found benefit from local abstraction of blood, by thinning the sole near the toe, and opening the circumflex artery of the foot, and afterwards applying a blister around the coronet, as already advised. The after treatment consists in having the animal properly shod, shortening the toe as much as it admits of doing, and raising the heels. By this course the strain is taken off the tendon. At certain seasons of the year, we would recommend a leather sole with a stuffing of tow and tar. A frog seton is sometimes used with considerable success. In horses that are incurably lame from navicular disease, we recommend the operation of neurotomy, or the division of the nerves of sensation going to the diseased part.

Indigestion in Calves and Dogs.

CALVES when carelessly fed or managed are very subject to indigestion. They become dull and pot bellied, and thriftless in appearance, their appetite capricious, their bowels irregular, and their faces pale-coloured, sour, and badly smelling. When such

cases are neglected, troublesome diarrhoea is apt to follow. The ailment usually depends upon the accumulation of sour curdled milk in the fourth stomach, which is the only one used while the young animal is fed on milk and does not ruminate. Laxative medicine must therefore at once be given. For a three month-old calf, the dose may consist of two ounces of castor or of linseed oil, to which may be added half an ounce each of carbonate of soda and ginger. If the animal is weakly and scouring, ten or fifteen drops of laudanum may be added. For a few days, until indeed recovery is established, an ounce each of common salt, carbonate of soda, and ginger may be given night and morning in a little milk; or where the calf is flatulent, dull and weak, an ounce of salt and half an ounce each of carbonate and sulphite of soda may be administered twice daily. The diet, as in all such cases, must be carefully attended to. If unweaned, the calf should have its milk fresh and sound, and thrice daily. A daily allowance of linseed gruel or bread linseed cake will further be serviceable; comfortable shelter, a dry bed, and plenty of room are also essential. When protracted indigestion appears to result from weakness, and the mucous membrane has become irritable and relaxed, advantage frequently follows the use of eight or ten drops each of muriatic acid and creosote, given night and morning in a few ounces of water.

Dogs readily, and indeed almost naturally reject by vomiting any food that disagrees with them, and hence are not very liable to suffer from indigestion. From the continued use of large quantities of highly stimulating food, aggravated often by insufficient exercise, pampered pets occasionally suffer from extreme irritability of the mucous membrane of the stomach, and after almost every meal they show some symptoms of uneasiness, and often vomit freely. Part of their food, however, is doubtless retained and assimilated, for such patients are seldom much wanting in condition. If the bowels appear to be too full, or there is any suspicion of worms, a moderate dose of castor oil should first be given, and the dejections afterwards examined. If any portions of worms come away, some areca nut or other appropriate vermifuge remedy should be given. Careful attention to diet will usually effect much good. Frequent, over-liberal feeding must be discontinued, and the dog restricted to two reasonable meals daily. Food should be given rather sparingly, of good quality, and not too bulky. For small house dogs, which are the most frequent victims of such complaints, milk and biscuits, or milk and boiled oatmeal usually answer well. Where the sensible regulation of the diet does not entirely remove the irritability of the stomach, a trial may be made of small doses of prussic acid, creosote, or calomel—all of which exert a soothing influence on such irritable surfaces. Where there is weakness they may be conjoined with a few drops of the tincture of the chloride of iron; where there is acidity, with a little carbonate of soda.—*North British Agriculturist.*

BROKEN BONES IN HORSES.—On this subject the following extract from Mr. McGillivray's "Veterinary Manual" (J. Adam, bookseller, Aberdeen), is of interest.—This is a subject on which much prejudice exists. The common idea is that 'horse bones will heal,' therefore they rarely try. I firmly believe that, were it advisable to try, the bones of the horse will heal as readily as those of the cow, but the case is one of pounds and pence, and it is not often that it would be advisable to try the union of a fractured bone in the horse. Should a cow continue in good health, and be able to travel about for a bite of meat, she will give value even if her leg be as crooked as a club. But unless there be a prospect that the horse be made sound (and there may be special reasons to the contrary), it is the soundest advice to have the horse destroyed. There are some bones that it would be folly to attempt mending; there are others that may be mended easily and with propriety. If the horse be not too old the pastern bone will heal. I have assisted nature myself on several occasions to do this. The shank bone below the knee or the hock will heal. I have done this, and I have a case of it going on favourably just now. I have known the bone above the hock-joint healed. I have assisted in doing this. I have had many cases of fracture of the tuberosity of the ilium of the hip-bone, and I never had a bad one. I have had injury to the skull by blows until the result was lock-jaw, and the beast recovered and did well. I have seen the bones of the pelvis fractured in a foal, by its being cast into a manger until it was deformed, yet it came into good health, and did a fair amount of work. Within the Huzarly district I know of eight horses and ponies that had fractured bones, some of them compound fractures, all of which did well, and were nearly as useful as before. Let no one throw away a horse with a fractured bone until he first consults his veterinary surgeon."



Weather Notes from the Ottawa Valley.

To the Editor of THE CANADA FARMER

FIN. Pardon my suggesting that notes of the winter would be interesting, and I believe it would tend to make the Lower Canadian more satisfied with his lot, if he could believe his western fellow subjects did know something about frost and cold, as well as himself. There was, according to the two leading papers, the *Globe* and the *Gazette*, a striking resemblance at Montreal and Toronto in the weather up to the 10th December—both papers noticing the weather in their market and commercial reports. On the 2nd and 3rd, ploughing was so general that in a drive of 20 miles, from Vaudreuil Station up the Ottawa, we counted about 8 teams at work. From that day to the 9th, we had most enjoyable winter weather, just a frost by night, and none by day. From the 9th to the 23rd, Jack Frost grew more and more vigorous, having in that time scaled up the Ottawa, and ice bridges were safely used. At Carillon on the 15th, and from that day to this, snow storms and severe zero weather have prevailed; the coldest day being the 22nd. It will be interesting to record how far this cold extended. A railway traveller says as far as Sarnia north-west, but the intensity has already relaxed here. Cattle seem much better tended and housed, than in many western districts. The stables are mostly of heavy logs, instead of thin boarding. Water never freezes in either the cow stable or horse stable, and although the west is warmer by a few degrees, I am sure the cattle and horses have more right to be discontented in the west, than in many eastern townships.

It will be interesting to know how soon the sheep find a bite in the spring. Last spring, sheep were rejoicing in green herbage, as early as the 7th of April, and cows had a good bite by the 25th. This is owing to the deep coating of snow, without which, the herbage, instead of being green, would be brown, and most of the clovers and trefails would be killed to the "quick." Thanks to a fair oat crop, and plenty of "beaver hay," neither hay nor straw is very scarce, but neither are over abundant.

SIMPLEX.

Ottawa Valley, C. E., Dec. 23rd, 1864.

SUMMER FLOWERING CHRYSANTHEMUM.—"R. J. F.," of Hamilton, asks:—"Can you inform me, through THE FARMER, where I can get seeds or plants of the Summer Flowering Chrysanthemum, mentioned in No. 22, page 348, of THE FARMER?"

ANS.—Apply to James Fleming & Co., Toronto.

"ENGLISH GRAMMAR SCHOOLS."—We shall be glad to receive an article from our correspondent "Euse-nada," in reference to these schools, which he regards "as needed by an agricultural people like ours." We cannot prescribe limits for such an article, but if he will condense as much as possible, we shall doubtless be able to find room for it.

BEST MODE OF PILING FIREWOOD.—"D. Cattie," of Hull, writes:—"As this is the season for laying up a supply of fuel for next year, it may benefit some of your readers to know that firewood for next year's use is much better when piled with the bark side uppermost, for wood piled with the bark side down is not so dry as when the bark is uppermost, besides when you come to handle it again the bark is liable to fall off, and go to loss, owing to the wet in summer getting between the bark and the wood."

DETAILS OF TURNIP CROP DESIRED.—"An Amateur Farmer," of Riviere-du-Loup, C. E., writes:—"In your issue of the 15th December, in an article headed 'Extraordinary Turnip Crop,' W. M. says J. Gormley, Lot 31, Concession 4, Markham, has raised this season from six acres of land, 6,810 bushels of turnips, or 1,110 bushels per acre, &c., &c. Will 'W. M.' or Mr. Gormley be kind enough to give through the columns of THE FARMER a detailed account of the manner in which he raised this large crop, kind and quantity of manure used, quality of land, &c., &c., and oblige."

RULES FOR FARMERS' CLUBS.—A correspondent wishes to know where in Canada there is a Farmers' Club, with which he may correspond for information as to rules and mode of working.

ANS.—We recently published an account of the organization of such a club in Brighton, C. W. Isaac C. Spuler is its Secretary.

FLAX MILLS AND MACHINERY.—"J. M. B." wishes to know where there are effective flax works in operation, and where the best machinery can be got.

ANS.—There are flax works at Norral, St. Mary's, Doon, Baden, Comestoga, St. Thomas, &c. A visit to some of these establishments would perhaps be the best mode of supplying our correspondent with the information he desires. If a visit be not convenient, a line to the Messrs. Perine, of Doon, or some other flax manufacturer, would probably elicit the information wished.

ANOTHER GOOD HOG.—"Archibald McKinnon," of Markham writes:—"In your last issue of THE CANADA FARMER, I notice communications respecting the weight of hogs killed. Now, sir, I am no boaster, yet I believe I can beat anything that has come under my observation. About a month since I killed a hog, and dressed it for market, 4½ months old, that weighed 203 lbs.—bred from half Berkshire and half Essex. She had been running on pasture for two months, and 2½ months before being killed, was shut up and fed on milk, potatoes and peas boiled. Who can beat this?"

MACHINE FOR CRUSHING FLAX SEED.—T. E. Campbell, of St. Hilaire, C. E., writes:—"Your correspondent from Woodstock, in his reply to J. B. G.," of London, is in error, as there is such a machine as 'J. G. B.' enquires for. I brought one out with me from England in 1846, and have had it in use ever since. It was made by Harwood & Turner, of Ipswich, in Suffolk. An iron wheel, four feet diameter, having a smooth surface about four inches wide on its circumference, moved by hand-power in its revolution, presses against a small, smooth cylinder; the linseed falls between these smooth surfaces from a hopper, having a grating in it to regulate the delivery, and it is received below in a half bushel measure, effectually crushed. I make use of the crushed linseed, mixed in boiling water, with three times its weight of barley or Indian corn meal, to form what is called in England Warne's Compound, with which I feed my fattening beasts."

The Canada Farmer.

TORONTO, UPPER CANADA, JAN. 16, 1865.

Utilization of Sewage.

THE agricultural question of the hour in Great Britain is how to convert the waste of its towns and cities into available fertilizing material for the farm and garden. It has long been known that a vast amount of manurial wealth was being thrown away, and various expedients to arrest this process have been proposed and tried. Of late the subject has been attracting much attention, and measures are likely to be adopted turning to practical account the knowledge which has been gained by careful investigations and experiments.

In 1840, cess-pools were legally proscribed as fountains of disease and under the supervision of Boards of Health sewers and water-works were constructed to drain off and convey to the rivers and the sea the refuse and waste of civilized life. This change perceptibly reduced the bills of mortality in most of the towns and cities of the land, but it has been found to be only choosing the lesser of two evils. The streams which should supply wholesome water to the populous places through which they flow, have become polluted and made sources of infection and disease. The soluble sewage is found to corrupt the water; the insoluble sewage falls to the bed of the stream into which it is carried, raising and choking it, or is deposited on the banks, and when the tide is low, corrupts the air, under the influence of the sun's rays. The account given of the state of some of the rivers in Great Britain is abo-

lutely fearful. With respect to the Thames a recent Act of Parliament compelled the Water Companies to remove their works from Lambeth and Chelsea to above Teddington Lock, but even at the new point, there is a pollution by the sewage from no less than 200,000 people. In Yorkshire and Lancashire the rivers are said to be fouled from source to estuary. They are in even a worse condition than the Thames! The beds of many of the rivers have been raised ten or fifteen feet by the deposit of sewage and other refuse. Among other instances, it is stated that there was a space under a bridge where formerly a cart could pass, but now a rabbit could not get through. Adjacent land is, of course, water-logged. The river Tame is said to contain as much sewage as water. Before reaching Birmingham it receives the sewage of 270,000 people, as well as all the refuse of gas works, chemical works, pumpings of coal mines, and the draining of that great district of South Staffordshire. Since 1850, the health of Birmingham has been deteriorating. The rivers in the basin of the Mersey are in a very foul state: the Medlock at Manchester "is covered with a scum so thick that birds can walk over upon it," and the Bridgewater Canal, which is supplied from it, is similarly foul; "the sewage matter combines in some way with the sub oil, and fermentation takes place; you see the gas rise up in a bubble, and a mass of scum with it, which cakes on the surface." This canal at Manchester "might be skimmed every twenty-four hours!" The Aire, which passes through Leeds and Bradford, is as bad as the Medlock. The Clyde, which receives the sewage of Glasgow and other towns, "is so foul that 100,000 cubic yards of sewage is daily deposited." And at Greenock £8,000 is said to be spent in dredging this deposit. The deposit near Bath is said to impede the navigation of the Avon. In many rivers the trout and other fish have all been killed by the sewage, and thus a source of food to the population destroyed. At the mouth of the Dec, 300 families live on the salmon they catch. Hundreds and thousands of persons might be supplied in like manner at the outlets of the Thames and other large rivers, were the water pure enough for fish-life. In many parts, cattle have been killed by drinking of brooks poisoned with sewage. The Thames and other streams are fast becoming little better than open drains. Physicians testify that all diseases are aggravated, and especially that epidemics and pestilences extend and become more fatal in communities and families which breathe impure air and drink foul water. Blood poisoning is a common result of poisoned air and water. It is under such circumstances and conditions of atmosphere and water supply, that scarlatina, typhoid, or intestinal fever and cholera break out, spread, and destroy.

Such are a few of the facts to be found in the report recently issued by the Sewage Committee of the House of Commons. A ponderous blue book has been added to the sanitary literature of the day, and its revelations are most astounding and alarming. *The Mark Lane Express* exclaims:—

"What a deadly picture it is! Nature moves in a circle. Life, decay, and reproduction follow one another endlessly. But if man checks the operation at any of its links, if he breaks the chain, he feels the punishment."

The economical aspect of the matter is hardly less startling than the sanitary one. It appears that the aggregate available sewage of the English metropolis amounts at a fair and safe estimate to no less than 266,952,410 tons per annum. This contains fertilizing matter which, if extracted and dried, would be equal in its effect upon the land upon which it might be applied to that of 212,812 tons of Peruvian guano. The market price of this latter article is £13 13s. 6d. per ton, and this, therefore, would place the value of the sewage of London at £2,793,551 per annum! At least ten millions of pounds sterling are computed to be lost annually by not turning the national sewage to good account as a fertilizing material for the land.

The importance and necessity of some effective steps being taken to correct this wide-spread evil, all admit; but the difficulty is how to accomplish an end universally desired. Investigations by Parliamentary Committees and Government Commissions, have shewn that many of the methods proposed for this object are not sufficiently remunerative to stimulate commercial enterprise in the application of sewage to the soil. Much difference of opinion exists as to irrigating farm lands with sewage, diluted of course with water. Some farmers who have tried it, say that when thus diluted, it is too weak to be of much real service, and that they prefer concentrated manures. The great difficulty seems to be to get rid of the water needed to wash the refuse and filth out of the city into the country. On light land, well drained, this plan has worked pretty well, but with stiff clay, even though under-drained, the surface is made a mortar-like morass in wet weather, and a dry-brick surface in hot weather, conditions both of which are unfavourable to the growth of crops. Too much water rather than too little, is usually the complaint of English agriculturists. Besides the sewage must at all times be disposed of in some way, and often it would be an injury rather than a benefit. At Croydon and Carlisle successful works have been put in operation, by which the sewage, deodorized and concentrated, is applied to land owned by the corporations, which land is let out to small tenants. The Croydon land thus enriched, rents for £5 sterling an acre per annum, and pays handsomely. It is proposed thus to enrich a low, thinly populated region in the vicinity of the city of London, or even to carry the entire outflow forty miles distant to a tract of foreshore,—the "Maplin Sands" and the "Dengie Flats,"—where 20,000 acres or more might readily be embanked from the sea, and converted into a fertile plain. The plan adopted by the city of Coventry is to convey the night soil about two miles out of town, where it is deodorized by street sweepings. On this plan, the expense and proceeds about balance each other.

When in England, some three years since, we became acquainted with and much interested in a plan devised and recommended by the Rev. H. Moule, which we find is now attracting more general notice. It is known as the "earth method" of treating night soil, and consists in fitting up the privy with a tight drawer, into which is put from time to time a supply of dry earth to absorb the liquid, and combine with the solid excrement. This simple course is said thoroughly to counteract offensive odours, and speedily to convert night soil into an available and powerful manure. It would be difficult, though not impossible, to adopt this plan in large towns and cities, but in thinly-peopled neighbourhoods, where there are plots of garden ground, it is quite feasible, and perhaps the best course that can be pursued. It is being strongly recommended for adoption in all suburban localities, and for schools, work-houses, hospitals and prisons. At the late meeting of the British Association for the Advancement of Science, held at Bath, Mr. McGee read a paper, giving an account of the course pursued at the Bradford Union (Wiltshire):—

"As chairman of a Wilts Poor Law Union, where the boys' and girls' schools' sewerage has been for two years simply, clearly, and effectually deodorized and wholly saved by the Rev. H. Moule's earth method, I would most strongly advocate the 'dry way' and not the 'wet way,' as the true method for half the population of this kingdom. All houses and cottages that are not in towns, all workhouses, hospitals, and prisons will find this plan easily available. For 15 months ending midsummer last, there had been no removal of the product from the schools' shed, so that the heap of excreta and earth, then apparent, resulted from, say, 45 children during that long period. It must be understood that whenever the soil became sufficiently dry, under cover, it was used over and over again, and it will be hardly credible that the whole quantity did not weigh three tons. Two tons were sold to neighbouring farmers, and I purchased about 1 cwt. of the remainder, of

which I am able to send you a small box. It is quite inoffensive, and might be handled by a lady in potting flowers. Without disparaging other plans for towns, I venture to think you will advocate the adoption of the 'dry way' for every one who does not live in a street. Supposing even in any street persons were bold enough to try it, I will advance that according to the above result, six families might, by one visit among them of one dust cart in five months, be supplied with dry earth and relieved of a valuable product."

Manure is the great want of every farmer and gardener, and surely it is well by some such process as the above, to secure from waste the richest fertilizer known, and thus transform a nuisance into a blessing.

Smithfield Club Cattle Show.

THE Smithfield Fat Cattle Show, instituted now for more than half a century, annually takes place, as everybody knows, in London, the beginning of December. It commenced in a very humble way in a narrow lane in Smithfield, and was afterwards removed for better accommodation to the Baker Street Bazaar, where by frequently enlarging the building and yards, the ever-increasing tendency of the Exhibition found accommodation for many long years, until a final point was reached, and Baker Street could not, by the exercise of any ingenuity, be made to hold the annually augmenting material that crowded the Smithfield Show. Accordingly, two or three years ago a Joint Stock Company erected the new Agricultural Hall at Islington, on a very extensive scale, and specially adapted to the various departments of an Agricultural Exhibition. It appears that, financially, the speculation has become already a great success, while affording exhibitors and the public ample accommodation.

From the reports that have reached us, it would appear that the late Exhibition, taken as a whole, was in advance of preceding years. A constant and healthy progress is maintained, which with excellent management, inspires public confidence and keeps the coffers of the Society abundantly replenished. The money premiums on the late occasion reached the magnificent sum of £2,000, besides cups and medals of large amount. Any animal or article at these Shows, failing to win a money premium or medal, but having a card attached, "highly commended," or "commended," as the case may be, is regarded by the owner and the public of no small importance, and where competition is both extensive and severe, the value of such notices does not fail to be appreciated.

The Shorthorns, as usual, mustered in great strength, and, with the exception of a few indifferent animals, were good, but not superior to what have appeared before. There seems reason to infer from the various criticisms that have appeared of late, that Shorthorn men must bestir themselves more, or this hitherto most favourite breed will not maintain the high position which it has long enjoyed, while some other breeds—the Herefords, for instance—are fast progressing. Mr. Kirkham's steer, in the new class, under two and a half years, was an extraordinary animal, both as regards symmetry and early maturity. It was sold for £70, an extraordinary price for an animal under thirty months, and worthy of the gold medal. Mr. Taylor's roan Shorthorn, Trinet, a beautiful heifer, obtained a silver cup, a judgment which the public unanimously endorsed. Portraits of both these animals may be seen in the *Illustrated London News*, for December 17th. The Herefords were also numerous, and as a class they are unquestionably advancing. The beautiful Devons were in considerable force and fully maintained their characteristic excellencies. The Sussex, Polled, and Longhorns, in point of number, were unusually small, but exhibited no falling off in quality. A similar remark will apply to the Welsh and Irish breeds. The Westhighlanders were quite as numerous as usual: most of the prizes went to England,

where these beautiful animals are fed to great perfection. The cross-breeds were numerous and attracted much attention, as most useful animals. In sheep and pigs the Show was particularly good, better, perhaps, than on any previous occasion. Mr. Overman obtained the silver cup for his splendid South-down and Leicester wethers, a cross that is said to be getting quite fashionable. Mr. Saunders, of Blandford, won the gold medal for his seven months' and eleven days' pigs, of the Yorkshire breed, which are spoken of as extraordinary animals; having been prepared on "barley meal, skim milk and sugar!"

In the department of machinery, implements, &c., the Smithfield Show continues to more than maintain its wonted high character. The *Daily Telegraph* remarks:—

"The show of implements is bewildering in its magnitude and variety, and includes divers machines which would be considered bold innovations on practical agriculture. The cleaning of knives and of boots, the polishing of plate, the chopping of mince-meat for sausages, the paring of apples, the whisking of eggs, and the washing of linen, would appear to have some connection, however, with this important pursuit, to judge from the character of a great many stands in the gallery and avenue. The exhibitors of purely agricultural mechanism, such as Messrs. Burgess and Key, Clayton, Shuttleworth & Co., Garrett & Co., Fowler & Co., Ransomes, and Tuxford, compete in spirited fashion; but the chief novelty is the patent engine exhibited by Messrs. James and Frederick Howard, of Bedford, and designed on a plan which promises a most extended utility in cultivation and general farm purposes, such as threshing and grinding, sawing, pumping, and hauling heavy loads. There is an equally vigorous competition in the display of farm produce by the great firms of Gibbs & Co., George Gibbs & Co., Carter & Co., Sutton & Sons, Skirving, of Liverpool, and Peter Lawson & Co., of Edinburgh. This last named firm, so prominently distinguished in the bygone shows at Baker street, and at all the agricultural meetings throughout the kingdom, has of late years discontinued entering for the exhibitions of the Smithfield Club, and the name now re-appears in sponsorship for the 'Phospho Guano Company.' Enterprise is well directed that encourages and promotes the use of the best manures, and it is, therefore, a good thing that this branch of agricultural commerce is so largely represented at the Islington Show. Messrs. Gibbs, Bell & Co., by whose vitrolitic process guano is said to be strengthened in power while it is reduced in price, are exhibitors; and so are Messrs. Whitworth & Co., to the value of whose concentrated fish manure the principal seed farmers bear high testimony."

Progress in Dysart.

THE Canadian Land and Emigration Company seem to be pushing improvements forward in their new settlement with great vigour. We have received from the Local Agent, Mr. C. R. Stewart, an extract from the *Peterborough Review*, giving an account of some festive proceedings at Haliburton, on December 8th, to celebrate the opening of the new saw-mill. By the joint liberality of the Company and the mill proprietors, a dinner was provided, to which the settlers, to the number of about seventy, sat down, and when the repast was over, speeches were made by Mr. Miles, the Company's Surveyor, and Mr. Stewart, the Agent, from which we cull a few particulars indicating the march of improvement in this newly settled region. During the past few months, fourteen miles of road have been built in the Company's territory, to a junction with the Peterson road, and fourteen miles more have been improved in the adjacent Townships of Minden and Snowden to connect the settlement with the Bobcaygeon road. At least two concession lines are to be opened, and various short lines of road constructed during the present winter. The sales of land have gone on so fast that the agent expects to have the whole of Dysart settled in another year. The Company have provided a surgeon, built a church, and are making arrangements for the establishment of a school under the provisions of the Common School Act, which it is expected will be in operation within the next three months. Even thus early in the history of the settlement, an Agricultural Society is talked of. The Com-

pany's agent stated that he "proposed to form a committee, make the necessary arrangements, ascertain what subscriptions could be collected, ask the Company for a contribution, and endeavour to make up a prize list to the value of about two hundred dollars." Haliburton is now a regular post town. Up to December 6th the mail had been carried at the Company's expense, but from that date the Government undertook the duty. The first mail carried by the Government arrived during the festive occasion referred to above, and was received by the settlers with much enthusiasm. A number of the settlers made speeches, and the company tarried to "drink a friendly cup of tea together, and to smoke the pipe of peace." The meeting was a very pleasant one, all seemed in high spirits at the prospects of the settlement, and it is worthy of note that no intoxicating drinks were consumed on the occasion—an admirable example to convivial meetings in older parts of the country.

Death's Doings Among Leading English Agriculturists.

MR. JOHN ROGERSON.—This venerable promoter of English agriculture, departed this life a few weeks since, at the advanced age of eighty four. He was born in Lincolnshire, where he practiced farming on an extensive scale for many years, and was the means of introducing valuable improvements, particularly in drill culture, root crops, and also in sheep and cattle, of which he was an excellent judge. Mr. Rogerson afterwards retired from practical farming and entered largely on mercantile pursuits in London, where he was joined by his younger brother, the late Joseph Rogerson. They soon commenced the printing business, and started the *Mercantile Journal*, and afterwards the *Mark Lane Express*, the latter journal doing for the farmer, what the former so well performed for the trading classes, copious and accurate reports of the markets, with a large mass of original and valuable information. Mr. Rogerson was among the principal originators of the Royal Farmers' Insurance office, of which he was unanimously appointed Solicitor, he having qualified for the legal profession also, after taking up his residence in London. His life, indeed, offered some striking contrasts, and whatever he undertook he did thoroughly. It is stated that when engaged in farming pursuits he was the best ploughman, with the exception of one of his own men, in the district. Mr. Rogerson was fortunate in having received a better education when young, than usually fell to the lot of farmers in those days; and to this circumstance in connection with steady perseverance, is to be attributed much of his success and usefulness in after life; thus leaving a most valuable example to the young to improve diligently the opportunities they may possess.

MR. JOHN FOWLER, of Leeds, so well known for his successful efforts to develop the uses of the steam plough, died recently, at Aekworth, near Pontefract, where he had gone to reside, as a means of isolating himself to some extent from the care and labour which attended the active personal superintendence of his works at Hunslet, Leeds, which are famous in the agricultural annals of this country. He was only thirty-eight years old, but a few months ago his health broke down through excessive and unremitting mental exertion. Relaxation from business and active out-door recreations were imposed upon him as indispensable necessities, and acting under professional advice, he lately took more regularly to hunting, having always been passionately fond of horses. Unhappily, three weeks ago, when following the hounds, he fell from his horse, receiving two compound fractures of one arm. The best medical advice seemed to warrant the anticipation of a speedy recovery, but an alarming change took place in the condition of the patient, the deadly form the disease assumed, that of tetanus, could not be checked, and the unfortunate gentleman expired, leaving a wife,

a daughter of Mr. Pease, late M. P. for Durham, and five young children.

If Mr. Fowler did not actually originate the idea of a steam plough, he has done more than all others in working it out, and in bringing the implement to its present comparative state of perfection. The New York State Agricultural Society imported last autumn one of the latest and most improved of Mr. Fowler's steam ploughs, the results of the trials of which on this continent will be looked forward to with much interest. It is rather singular that two of the most eminent of English agricultural implement makers should be taken away so nearly together, as Messrs Ransome and Fowler; the former in a green old age after a long and most useful life; the latter in the prime of his days, when after conquering innumerable difficulties, he was about reaching the full success of his many toils and cares. Such is man's life below!

DEATH OF MR. R. RANSOME.—Born in Ipswich, on the 27th of February, 1795, the son of Mr. Ransome, of Norwich, who established himself in that town as an iron-founder towards the close of the last century. In 1809 he became apprentice to his father and brother, and in 1818 he joined them in partnership in the business, which has since attained not merely great eminence, but a world-wide reputation. He was thus for 50 years connected, and nearly all the time actively engaged in the management of the largest agricultural implement manufactory in the world. His strong natural sense, sound judgment and habits of attention, qualified him well for public business, and these qualities, combined with his affectionate and social habits, contributed greatly to promote the extension and interests of the firm. Mr. Ransome died at St. Goar, Rhenish Prussia, on the morning of Sunday, the 6th of November. There has thus passed from among us a man who, early trained to business under the example of a high-minded and industrious parent, manifested throughout a long life a line of conduct that caused him to be deservedly respected and universally esteemed. His active and persevering habits, his broad liberal, and practical views, joined with his love of method, order, and punctuality, and, above all, his sterling, conscientious integrity, combined to fit him for a high eminence as a man of business. He had that strong common sense which enabled him to adopt the right view of a subject, as well as the foresight and promptitude to avail himself of first opportunities. These qualities gained for him the respect of intelligent men, while the integrity, affability, and benevolence evinced in his intercourse with the 1,000 or 1,200 hands employed by the "firm," won from the mass of them strong personal attachment. Rarely, indeed, was there a case of severe illness amongst the workmen in which the patient's wants were not relieved by the master's purse, or his feelings gratified by the master's frequent presence at his bedside. Perhaps the best testimony that can be offered to the conscientiousness of his disposition, and the affectionateness of his manner, can be found in the frequency with which he was appealed to for the settling of disputes. He was looked upon as the "peacemaker," and both sides were willing to submit to his decision. He invariably encouraged the well-disposed, and reproved with calmness and excessive mildness where reproof was necessary. Though strict, indeed, in his notions of right and wrong, he was tender in the extreme to the failings of others, and invariably endeavoured to speak the truth in love. He was gifted with great benevolence of disposition, and his hand was always open to administer relief, as he made diffusive charity the channel in which that benevolence should flow. There was in him a fervent desire to use the wealth entrusted to his care "as a faithful steward" for his brother's benefit and his Master's glory, and his experience and sound judgment guided his good heart in such a manner as enabled him to discriminate between the meritorious and the profligate, but at the same time to contribute to the necessities of all. Few lives that have extended over so long a period can be named which have exhibited such a continual and successful application of the best principles to their proper objects—mechanical improvements, industrial and educational progress, benevolence, philanthropy, and religion.—*Ipswich Paper*.

DEATH OF MR. W. H. DAVIS, THE ANIMAL PAINTER.—This gentleman, so well known by his works to the agriculturists of the kingdom, died on Thursday last, at his residence in Chelsea, at somewhere about the ripe age of eighty, and after but a brief illness. For many years his was one of the most familiar figures at the great cattle shows, and we can well remember his busy manner and active pencil at the opening meeting of the Royal Agricultural Society of England, as held at Oxford. Long previous to this he had been regularly engaged on the *Farmers' Magazine*, while with such an introduction his portraits of animals are now to be found in almost all the dining-rooms of our successful exhibitors, either breeders or feeders. The last great gathering he ever attended was that of the Yorkshire Society at Howden during the past summer, where we left him as energetically engaged as ever over Mr. Borton's Royal Leicesters. He was equally good with cattle or sheep; but his favourite study was the Devon, whose handsome appearance and nice "texture" he would render with a very happy fidelity. Mr. Davis, a man somewhat eccentric in his ways and habits, had a very becoming reverence for his art, by which, it is satisfactory to say, he realized a very comfortable independence, having for many years been above the necessity of continuing to exercise those professional duties, which, however, he looked upon to the last as labours of love.—*Mark Lane Express*.

NEW GRAIN DRILL.—Joseph Hall, of Oshawa, is manufacturing a superior grain drill, having attachments for sowing grass seed, guano, plaster, lime, ashes, &c. The superiority of drill over broadcast sowing is very great.

STOCK PURCHASES.—We learn that John Ashworth, Esq., Quebec, has recently bought from Hon. E. Cornell, Ithica, N. Y., his prize cow "Lillia Languish," also from Jas. O. Sheldon, Esq., Geneva, N. Y. "Maggie," by Plato, dam by Duke of Gloster, and "Sallie Millis," by 1st Duke of Thornedale, dam by The Marquis.—Prize Flower bred by Mr. Douglas, Scotland, &c.

BEE-HIVE AND BEE-PALACE.—We beg to call the attention of our readers to the advertisement of the Messrs. Thomas of Brooklin, which appears in our present issue. Their patent Bee-hive and Bee-palace were on exhibition at the Provincial Show, at Hamilton last September, and attracted much notice. A description of their hive will be found on page 263 Vol. I. of THE CANADA FARMER. It is constructed on the moveable-comb principle, and affords ample opportunity for observing the bees.

SORGHUM FOR DYEING.—The *Sorgho Journal* gives an account of some chemical experiments with Sorghum Cane, which seem to establish its value for dyeing purposes. Crimson, purple, and brown, were produced from the same bath, the cloth being afterwards drawn through solutions of chloride of tin, bichromate of potassa, sulphate of copper, &c. Dry cane is said to answer the purpose remarkably well. The same colouring material is contained in the seed. It is not necessary that the cane should have matured its growth. As far as tested, the colours resist the action of sunlight and water very satisfactorily.

LARGE SHEEP SALE.—A correspondent of the *Country Gentleman* furnishes that journal with an account of "the largest sale of sheep ever made in Rutland County, Vermont," as follows.—"N. T. Sprague, Jr., of Brandon, sold to Merrill Bingham, of West Cornwall, twelve thorough-bred *Infantadoes* (Spanish Merinoes), all yearlings, at the following prices:—

10 yearling ewes at \$300 each.....	\$3,000
1 yearling buck	1,200
1 yearling buck	2,560
	\$6,800 ⁰⁰

The purchaser of these sheep is represented as being a widely-known breeder and dealer in sheep, and the seller as noted for judicious selections of stock animals. The latter "sheared last spring at the rate of one pound of wool to less than four pounds of carcass."



Horticultural Lessons of the Past Year.

The year 1864 was not as favourable to the horticulturist as our seasons usually are. The intensely cold winds of the opening days of the year had a very injurious effect upon all vegetable life that was exposed to its power, and the long continued drouth of the summer was not without its influence upon the products of our gardens. The peach crop, even within the limited section where the peach can be grown, was destroyed; the cherry crop very materially lessened, and pears and apples much less abundant than usual. The strawberry crop also suffered, and blackberries and raspberries were not up to the average of ordinary seasons. The superabundance of rain in seeding time, kept the ground so wet and cold that vegetables came up slowly, and as soon as the most of them were out of the ground the drouth set in and the earth baked into brick, so that growth was checked and the garden stood still. Yet, notwithstanding these troubles, which at first seemed so great, and which cut off the gardener's hopes and nearly put out his zeal, the past year has been more than usually full of valuable lessons, which he will not fail to remember and treasure up for future guidance and profit. Indeed, unless there had been this death dealing frost, this spring deluge and the summer's drouth, the year's lessons had been less instructive.

One of the first lessons which the year taught us, was that the dwarf pear tree is liable to have its roots frozen to death by our frost laden winds, whenever the ground is not covered with snow enough to protect them from its power, and that this is especially the case in loamy, light soils. The roots of the dwarf pear tree are not pear roots but quince roots, and they do not strike deep but lie near the surface, and on that account are exposed to the full power of the frost. Knowing this, the proprietor will hereafter, at the approach of winter, provide against loss from this cause, by covering the surface of the ground around his dwarf pear trees with a light dressing of manure, tanbark, sawdust, or whatever will serve as a protection to the roots without affording a harbour for mice.

We have again been reminded of the protection afforded to our fruit trees by large bodies of water lying in the near vicinity. Long since we learned their value in retarding early vegetation until spring frosts were over, and by their higher autumn temperature preventing early frosts in the fall; and now we seem to be told that they temper the cold of the winter's wind, for at Goderich, along the shore of lake Huron, the peach trees were laden with a favourable crop. The protection afforded by buildings, or a high fence or a neighbouring belt of trees, has again been seen in the crop of fruit on trees thus sheltered, and we are again urged to avail ourselves of all such existing means of shelter, and to provide them where they do not already exist, as fast as circumstances will admit.

Something too has been added to our knowledge of the hardihood of different varieties of out-door grapes, and of their probable value in our climate. The Concord and the Delaware came through the winter with hardly a bud injured, but the Hartford Prolific suffered badly. Some plants of Ontario and Rebecca were killed outright, and these varieties will doubtless need winter protection.

The value of underdrainage has been most conclusively shown during the past season, especially

in all horticultural operations. A portion of the writer's garden was not underdrained, for the reason that it did not seem to need it, but the heavy rains of spring kept that portion so wet and consequently cold, that seeds sown in the parts lying lower and naturally more wet, but thoroughly underdrained, came up and made a luxuriant growth, while those sown on the portion not underdrained only rotted in the ground. Nor was the benefit confined to the spring merely, while the rains came down, but when the rains ceased and the drouth set in, the undrained part was so sodden with water that it baked like a brick, and many of the seeds of the second sowing were unable to force their way through, and those which had come up made no growth. Not so with the underdrained portion. There was no unneeded water in the soil, the warmth of the sun had penetrated the earth without baking it, the rains that fell passed readily through leaving their fertilizing properties for the use of the plants, and they grew without check or hindrance.

But perhaps the most cheering lesson of the year, especially to those engaged in growing fruit for market, is the fact that while the crop was lessened the price of fruit was enhanced, so that the revenue obtained from the diminished crop was by no means diminished in a corresponding proportion. This has not been the history of the wheat crop; a diminished yield has not been followed by an increase of price. The farmers of Canada who are now reaping only an average of fifteen bushels to the acre, are not receiving even as large a price as they often obtained when the average yield was twenty-five bushels. And the fruit grower learns that he has here at home a large and steadily increasing market. The value of the fruit brought into Canada in 1863 was \$454,234, while the value of the fruit exported was only \$19,158. In order then to supply the present home consumption for one year it is necessary to pay to the United States the sum of \$435,046. Is it necessary? Will not those Canadians dwelling in the portions of Canada favourable for fruit raising, profit by this lesson from the provincial trade returns published during the past year, and prepare to meet this great demand?

Grape Growing and Shelter for Orchards.

To the Editor of THE CANADA FARMER:

Sir,—In reading an article from Mr. Kilborn about his being so sanguine of success in his growing the grape in any part of Canada, I wish to make some enquiry as to the cause of his success; for on account of the hard winters and early frosts, we are far behind in growing the grape. But if the grape can be grown and ripened as easy as Indian corn, I am determined upon having some if work will accomplish it. If Mr. Kilborn will give something more definite, as regards his cultivation and the kinds he would recommend for being the most hardy and earliest to ripen in our northern locality, he will by so doing confer a great favour on his brother amateurs. I am exceedingly pleased, Mr. Editor, with your further remarks on fruit, at the late fair at Hamilton. I consider that article to be worth more than the yearly subscription, it is so pointed and clear; pointing out so plain the most valuable kinds of apples, pears, grapes, and other fruits, it shows at a glance to those that are not posted, which are the best and most valuable kinds to cultivate. I am glad to see such improvement manifested in the cultivation of the grape, it seems as if there is a new era brought to light in its cultivation. I am in hopes there will something come out, if not already, suitable for the more northern parts of Canada, as it is very much needed; can we not get it, would it not be a fortune for some one to bring such a grape into notice? The Isabella seldom ripens here in anything like perfection, the Concord, Diana, and Delaware do somewhat better this year, they have ripened very well this year, the later kinds I have not tried yet, but intend to get some in the spring.

Allow me, Mr. Editor, to return my sincere thanks to you for noticing me as an "enthusiastic fruit grower." Allow me to state what I believe to be the principal cause of my success in fruit growing: I can do it no better than has already been done in the July No. by Prof. Buckland. In that No. he gives a description of my premises. We agree to attribute it in a great measure to the cultivation and growing of low-topped trees, or what he calls growing belts of trees for shelter around your orchard, in order to

break off and to lessen the effect of harsh winds, which are prevalent in these northern climates, and which are so destructive to fruit trees. I use the sugar maple for this purpose and find a double profit in them, not only for shelter, but in fifteen years I find my trees large enough to yield a good return of sugar for my trouble of setting them out. I also cultivate the wild ones that spring up naturally. Would not the white willow (if it is any good) that is recommended for hedges make a good and quick shelter: can any one give information about it? I am much pleased at your calling the attention of your readers to this valuable subject. An article in the September No. is to the point. I hope it will be read over and over again until they are convinced of its great importance and commence to practice it. I am in hopes to see the Fruit Growers' Society continue to impress the necessity of shelter upon my brother farmers until they are convinced of the benefit derived from it.

Therefore, I will leave the subject for better and abler hands to deal with. No doubt, they can do it more justice than I can; but, if like myself, they can't do well, they can try, and can show a willingness to do as well as they can. Let these long winter evenings be occupied in exchanging our thoughts and experiences for each others' benefit.

R. B. WERDEN.

Picton, Nov., 1864.

Flies Destroyed Through the Simple Agency of Flowers.

"Till housefly is one of the greatest annoyances of domestic life, and numerous means have been proposed for its destruction. We beg to call attention to a novel and interesting method of accomplishing so desirable an end—namely, by the agency of a beautiful and fragrant flower. Every one has observed that the mission of certain plants appears to be the capture, torment, and death of insects; and particularly flies. The Nepenthes, the Sarracenia, the Dischidia, the Marcgravia, and other plants, secrete a sweet and odoriferous fluid, which allures the flies to destroy them. *Dionea muscipula* has its leaves armed with teeth and darts, and as soon as the fly comes within their grasp, it is squeezed and pierced as in a vice full of knives. Certain *Droseras* are covered at the extremity of their hairs with a viscous fluid, which entraps the unwary insects, and consigns them to a lingering death of hunger and fatigue. Nature abounds in similar examples, all of which point to living plants as a means to free ourselves from the nuisance of flies in our apartments. At the commencement of the last century, a man named William Hale emigrated to Halifax, in Nova Scotia. He found there a curious plant, which he sent to Europe. In 1731 Miller cultivated it, and mentioned it in his dictionary. It was then popularly termed, 'Fly-catching Dogbane.' Linnaeus perceived its affinity with the genus *Apocynum*, and called it *Apocynum Androsæmifolium*. The plant grows a foot or two in height, and requires a light, dry, warm soil. Cold and heavy soil kills it; and it cannot endure any disturbance of its roots. It is propagated by division of the roots in autumn or spring, but rarely produces seed. It diffuses an aromatic odour, which being perceptible at a considerable distance, attracts the flies from all the surrounding spots. Darwin, in a note to his poem, 'The Botanic Garden,' published at the close of the last century, gave an explanation of the process by which the *Apocynum* catches and destroys the flies. He says it is the stamens that capture the insect; and that it is attracted by the odours, and that in order to suck the sweet fluid contained in the flower, it is compelled to introduce its trunk between the filaments, when it cannot withdraw it. A better explanation was given in 1794, by William Curtis. He has shown that the anthers are united into a cone in the centre of the flower, leaving between them five interstices, which are narrowed from the base to the summit. In the centre are two ovaries, surrounded by a glandulous substance which secretes a saccharine liquor. At the summit of the pistils are two urn-shaped stigmas; the middle of each of which is surrounded by a glandulous circle, also secreting honey. On this point anthers adhere with tenacity, so that it requires some force to separate them. When the flies, attracted by the perfume of the flowers, come to settle on this part, they discover the interstices where they can introduce their trunk. Downwards, the entrance is easily made, and the insect at first contents itself with sipping from the interior disk; but it soon discovers a more inviting nectar towards the top of the passage; and, as it is obliged to re-ascend, in order to reach this with its trunk, it finds itself caught. A plant of the *Apocynum*, grown in a room, bears thousands of flowers, and will catch numbers of flies every day."

Laying Down Grape Vines in Winter.

A CORRESPONDENT of one of our exchanges says:—"In my rambles I have been very particular in making observations with reference to the productiveness of those vines that have been laid down when compared with those that have not been laid down during winter, and I have found it an invariable rule that those vines, no matter what was the variety of grape, which had been laid down and covered with a few inches deep of soil, or with leaves, until the cold weather had passed in the spring, yielded good crops of grapes; while those that had not been laid down during winter yielded but little fruit, and in many instances none at all; and when such vines did bear, the grapes were almost always several days later in maturing, and were also of an inferior quality.

"I could mention reliable instances in the same vineyards where the vines that had been laid down and protected were loaded with fruit; while those that were left on the trellises during the winter produced comparatively nothing. People in our country are learning that their vines must be protected from the intense cold of our long winters. Therefore, most of them cut their vines loose from the frames early in November, and lay them on the ground and cover them with leaves or with a few inches in depth of light earth, and they find that the little expense and trouble of performing this job returns an ample compensation in fruit the next season. I have in mind a number of choice vines that had been trained and cultivated with great care and expense, some of which were killed outright by the severe cold of winter, while some others were so seriously injured that they produced no ripe fruit at all. Whereas, had they been laid down during the cold weather, no doubt they would have produced a bountiful crop of delicious grapes.

"Let every one who owns a grapevine cut it loose from its supports, and cover it with light earth, leaves, or with thin pieces of turf, until the warm weather of next spring admonishes us that it is time to uncover it again, and hang it on the frame. This practice has secured large quantities of delicious grapes, when, had it not been done, there would have been no fruit at all on the vines. The practice is beneficial to the most hardy varieties of grapes, and without it little or no fruit may be expected when the variety is of a tender sort."

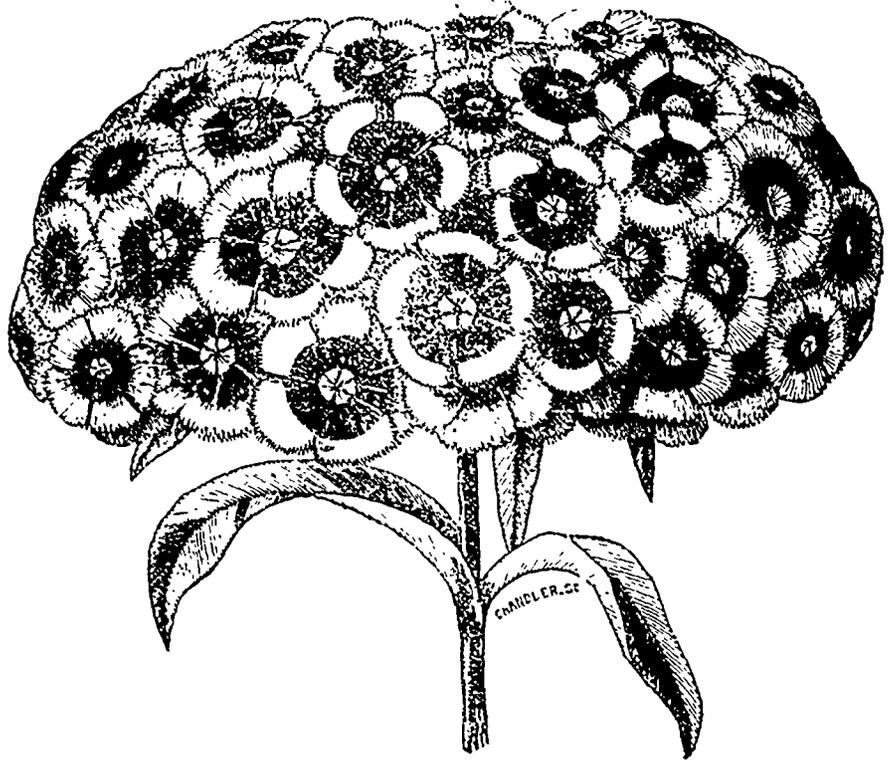
Delaware Grape Vines from Cuttings.

I HAVE succeeded in raising Delaware grape vines from about three-fourths of the cuttings set out in the open air, by the following method:

Just before the ground freezes in the fall, I prune my vines, cutting the parts trimmed off (of that year's growth) in pieces containing three healthy looking buds each. These are tied in small bundles and laid in an old raisin box with a little earth sprinkled in the bottom. The box is then buried in dry soil in my garden, covered but two or three inches deep. I usually select a place near the west side of a tight board fence, where the frost seldom gets out of the ground during a winter thaw, and where no surface water will settle around the box. They are left undisturbed in the box until the buds on the parent vine are largely swollen—some opened. This usually takes place early in the month of May in this locality. The box is then taken up and carefully turned bottom upward, emptying the bundles of cuttings on the ground. The buds are generally found swollen about half an inch in length. They should immediately be placed carefully in previously prepared mellow ground. I set them with two buds under, and one even with the surface of the ground. Then keep them shaded by leaning boards against slanting stakes over the rows. If the ground is getting dry they should be watered. The ground about the cuttings should be disturbed as little as possible, pulling the weeds carefully by hand. Cuttings set out in the spring of 1862, last fall had made a growth of over five feet.—*Cor. Country Gentleman.*

CAMELLIA FANNY SANCHOTT—This charming white Camellia has been produced in Italy, from whence it has been received by the establishment of M. Verschaffel. The flowers are of the purest white, slightly tinged with rose in the centre, while some pretty rose spots are visible here and there. The petals are large, round, bi-lobed at the summit, and are placed with the most perfect regularity. The plant is of excellent habit, the foliage ample and of a fine green, and the flowers are produced in abundance.

Henderson's Perfection Sweet William.



THE Sweet William is one of our valuable, hardy, perennial border flowers. It has been greatly improved of late years in the size both of the truss and flower. Some of the flowers have pure white grounds, with inner belts of a rich violet-crimson; others are marked with bright cherry-coloured belts; while others still have bright carmine and violet-crimson grounds, with white margins and starry centres. The seed was sent out by Henderson, of London, England, under the name of Henderson's Perfection, and the plants raised from it have produced large flowers that for perfection of form and brilliancy of colour, fully equal all that had been said of its beauty. Our engraving will give some idea of this beautiful new strain, the seed of which can be obtained of all our leading seedsmen; and if any prefer the plant already grown, our nurserymen can supply their wants.

PROLIFIC POTATOES.—Mr Campbell, gardener at Colliston, dug from one yard of a drill of Potatoes, containing three shaws, the enormous yield of 27 lbs. One of the tubers weighed within half-an-ounce of 2 lbs., and the united weight of twelve was 16 lbs. The Potatoes, which were of the sort called Paterson's Seedling Regents, got nothing but leaf-mould for manure.—*Arbroath Guide.*

MIMULUS CUPREUS.—This beautiful little perfectly hardy novelty was sent from the Andes of Chili, where it was met with at an elevation of 6,000 or 7,000 feet. Its dwarf and compact habit, not exceeding 1 to 6 inches in height, its perfect hardiness, and producing its bright orange-crimson flowers in great profusion render it equally useful for the flower garden or for pot culture. It has been exhibited during the past season, and had medals awarded it at both the Royal Horticultural and the Royal Botanic Societies. It is a charming plant, and cannot fail to give general satisfaction.

DEGENERACY OF FRUITS.—In a paper on the variability of the Pear, by M. Decaisne, given in the "Annales des Sciences Naturelles," the author maintains that there is no evidence of the degeneration of our fruit trees in consequence of the continual propagation by grafting. The facts stated by those who contend for degeneration may be explained in various ways—such as climates or soils unsuited for the particular wants of the varieties, bad culture, or improper grafting. Our ancient pears, so justly esteemed for a century or two, are still the same as they were at first. The Crassane, St Germain, Doyenne Châumontel, Bon Chrétien, &c., have lost none of their qualities. If they are neglected, it is only because cultivators are looking after novelties.

FERTILIZING POWER OF POLLEN.—M. Bellomme states that the pollen of monocotyledons preserves its properties for a much longer period of time than that of the dicotyledons. He experimented upon the following natural orders—Leguminosæ, Rosæ, Myrtacæ, Umbellifera, Cactæ, Crucifera, Malvæ, Solanacæ and Boraginacæ of the latter group and he found the pollen as fertile at the end of three years as it was at first. His experiments on Monocotyledons were made upon the Liliacæ and Amyridacæ, the pollen grains of which retained their

fertility for a period of six years. Fertile and barren pollen may be readily distinguished. If the grains have lost their fecundating property, they feel like dry powder when placed upon the palm of the hand; if, however, they still possess it, they adhere to the hand, and seem as though they had been slightly moistened.—*Gard. Chronicle.*

THE RUSSIAN VIOLET.—The Russian violet in many parts of the country is not known, and perhaps never was heard of. These violets are very beautiful, and gifted with a very fragrant perfume, which is not usual in the "common spring violet," which can only be called "pretty and sweet." Its colour and size are superior—the one being darker, and the other larger. These violets thrive on a border having a western aspect. The soil in which they succeed best is a very light mould. All who would have a bed of these violets in October (which is rather rare) must procure healthy single roots in May. Water them during the hot months, and transplant them every other season. They will realize their object. When summer pets are departing, in these violets a treasure may be found.—*Scottish Farmer.*

CLOVES.—Cloves are unopened flowers of a small evergreen tree, that resembles in appearance the laurel or the bay. It is a native of the Molucca or Spice Islands, but has been carried to all the warmer parts of the world, and is largely cultivated in the tropical regions of America. The flowers are small in size, and grow in large numbers in clusters, at the very end of the branches. The cloves we use are flowers gathered before they are opened, and while they are green. After they are gathered they are smoked by a wood fire, and then dried in the sun. Each consists of two parts, a round head, which is the four petals or leaves of the flowers rolled up, inclosing a number of small stocks or filaments. The other part of the clove is terminated with points, and is, in fact, the flower cup and the unripe seed vessel. All these parts may be distinctly shown, if a few cloves are soaked a short time in hot water, when the leaves of the flower soft and readily unroll. The smell of cloves is very strong and aromatic, but not unpleasant. Their taste is pungent acrid, and lasting. Both the taste and smell depend upon the quantity of oil they contain. Sometimes the oil is separated from the cloves before they are sold, and the odour and taste in consequence is much weakened by this proceeding.

Poultry Yard.

Profitable Poultry.

A GENTLEMAN, who signs himself "A Lover of the Feathered Tribe," complains of losing every year an increasing quantity of chickens, and also that the eggs are so many of them had that not more than two-thirds come to perfection. He says he has kept them eight years: they are whitened out every week, well fed, &c., &c. Now, I should expect this gentleman knows, in spite of his ill-luck, much more about rearing chickens than I do; but perhaps, as he asks for an opinion from somebody, he will excuse mine, however imperfect. I will not mention any breed, as perhaps my remarks may apply to all. In selecting your eggs when your first hens want to sit, you may take which you wish to breed from, and mark them, but mind not those that have lain perhaps a week, where different hens have been to the same nest; such are often sprung, and afterwards exposed. This is a sure beginning of failure. Now, suppose your eggs are gathered every day, kept till your hens want to sit; set them in a quiet spot in the evening, feed them at a certain time regularly—not with the other hens—and see them in their nest again; if they are left to come off among a quantity of others, they may soon get tired of sitting, or others may lay in their nests, or keep them off till they take up some other nest. Then perhaps the eggs get half cold: most of these would spoil.

Another cause of bad eggs is, they are stamped on, get dirtied; and however one may whiten their house, this nest becomes so strong of smell, the hen may be seen standing on her eggs, not liking to forsake them, but driven from them by the stench. In this case wash them, clear the nest entirely away, put them down again in clean straw. An old sedge collar best holds the eggs close to the hen, and all get an equal amount of warmth, saving one or two in a hatch, which would die for want of warmth, or keep the hen perhaps a whole day from the first chicken that came off, which should be taken when quite dry to some warm place, and fed until the hen has brought off the remainder. Be very quiet as you take them: eggs often get broken, or young chickens stamped on by rough persons attending them; remove gently all pieces of shells or anything remaining that may bedaub the ones then escaping; if any remain which show to be sound by morning in warm water, let another hen hatch them off. In cooping your hens, be gentle and settle them; if not, two or three young ones get jammed; at once place your coop in a nice shady place some way from any other hen, or you may expect some of them to get into each other's coops, and get killed. If a hen has been sitting some time, and is getting fidgety, keeping with the other hens, and likely to spoil her eggs, if it is a shut-up place put another that wants to sit in the same place; the eggs will soon get covered by one of them. Again, do not set your hens where others lay, as you will have them driven off by others wanting to lay; and when such has laid it goes off. Many a nest is spoiled in this way. If you feed your sitting hen regularly, remove any egg not marked—this being done every day—such eggs are good: two or three days' neglect spoils them. Do not set your hens, if you can help it, either where the other hens lay or feed, as they get unsettled, and leave them; do not let children noise about them, nor dogs bustle near them. I have seen a great many hatches spoiled by children playing with, perhaps, a young dog. Do not let your hen wander with her brood in feeding time with the other poultry; some of them get knocked over, or in their travels they may peck near the coop of some old hen, who will kill them as fast as they approach.

It is difficult to rear chickens where they almost all lay, they make such a jumble of it. If you were to leave your hens for a week when some were sitting and others laying, say in your fowls' house, you would find some quite down on two, three, or more, or some laid to them every day; the result would be not two of the lot would produce chickens at the same time. Again, the more partitions you have in your sheds, the better in wet days or nights; drive each hen not cooped into a little place by herself. If bad weather continues, feed them there; all this takes a great deal of attention. But whatever is worth doing, is worth doing well; even rearing chickens.—*Correspondent of Mark Lane Express.*

TURKEYS AND GRASSHOPPERS.—At a recent meeting of the Cincinnati Horticultural Society, Mr. Howarth stated that the turnip fly and grasshoppers were destroying all the turnips as fast as they put forth any leaf. Mr. Consandino said that for grasshoppers there was no better remedy than the keeping of turkeys. He had often saved his turnip crop completely, thanks to their kind offices, while his neighbours, who did not keep turkeys, had lost theirs entirely.—*Rural New Yorker.*

CHINESE GESE.—There are several semi-domesticated varieties of geese. The only one I consider of any utility is the Chinese; it lays a large number of eggs, and a cross between it and the Toulouse gives a delicious bird for the table. Their time of incubation is about 35 days.

The goose resembles the gander in form and colour, and both have a dark brown stripe down the back of the neck. They are graceful in form, but have the greatest of all defects, a discordant voice, and, being very loquacious, it is a serious evil to be constantly exposed to their whining, discontented, harsh cry. On a distant piece of water, they look well, as they are peculiarly elegant in movement; their colour is brown, shaded into white on the breast; bill, tuberculated and black; neck, long; feet and legs, black.—*The Henwife.*

EMBLEM GESE.—These birds attain great weights, and are valuable in the market, on account of the superior quality and colour of the down, but, to look well, they must have access to a pond, and are therefore alone available to those who possess this advantage.—*Id.*

BORROWING CHICKENS.—One of our peculiar gaunt Yankees, lately emigrated and settled down in the West. As he put himself to work in good earnest to get his house to rights, the neighbours willingly lent him a hand. After he had got everything fixed to his notion, a thought struck him that he had no chickens. He was too honest to steal them, and too mean to buy them; at last a thought struck him—he could borrow. He went to a neighbour and thus accosted him: "Wal, I reckon you hain't got no old hen nor nothin' you'd lend me a few weeks, have you, neighbour?" "I will lend you one with pleasure," replied the old gentleman, picking out the very finest in the coop. The Yankee took the hen home, and then went to another neighbour and borrowed a dozen eggs. He then set the hen, and in due course of time she hatched out a dozen chickens. The Yankee was again puzzled; he could return the hen, but how was he to return the eggs? Another idea—and who ever saw a live Yankee without one?—he would keep the hen until she had laid a dozen eggs. This he did, and then returned the hen and eggs to their respective owners, remarking as he did so: "Wal, I reckon I've got as fine a dozen of chickens as ever you laid your eyes on, and they didn't cost me a cent, nuther."

PRICES GIVEN FOR PRIZE FOWLS.—Those of our readers who grudge a couple of dollars for a choice bird wherewith to improve their breed of barn-yard fowls, will read with some astonishment the following account which we copy from *The Field*, of sales effected at the recent Birmingham Poultry Show. The total sales of poultry amounted to 273 pens, which realised 1066l. 8s. 6d. Among the pens disposed of were Mr. Yardley's first prize buff Cochin pullets for 20l.; Mr. Lawrence's second prize yellow Jacobin pigeons, for 20l.; Mr. James Wood's first prize black-breasted-red Game for 12l. 12s.; Mr. Elijah Smith's first prize buff Cochin hens, for 12l. 12s.; Mr. James Wood's first prize brown breasted-red Game, for 12l. 12s.; Mrs. Seamon's first prize Aylesbury ducks, for 12l. 12s.; Mr. Shorthouse's first prize pen of partridge-feathered Cochins, for 10l. 10s.; Miss Beldon's first prize silver Polish chickens, for 10l. 10s.; Mr. James Fielding's first prize spangled Hamburg chickens, for 10l. 10s.; Mrs. Hurl's second prize silver-spangled Hamburg chickens, for 10l. 10s.; Mr. Aykroyd's first prize duckwing Game, for 10l. 10s.; Mr. Cock's black breasted red Game (single cocks), for 10l. 10s.; Mr. Swift's Game Bantams, for 10l. 10s.; Mr. Hulbert's Rouen ducks, for 10l. 10s.; Miss Biggar's first prize Spanish pullets, for 10l.; Mr. Bates's commended buff Cochin hen, for 10l.; Mr. Bishop's commended buff Cochin cock, for 10l.; Mr. Poole's first prize partridge-feathered Cochin cock, for 10l.; Mr. Kelleway's first prize Game Bantam cock, for 10l.; and Mr. Postan's highly commended Game Bantams, for 9l. 9s. Fifty other pens sold for sums varying from 8l. 10s. to 5l.

The Household.

Why Cake Tastes of Turpentine.

WE are told by a person of experience in cooking, that if in using oil of lemons to flavour her cakes she gets too large a quantity, she will frequently have the exact flavour of spirits of turpentine. It is probable that the oil of lemons is actually changed into oil of turpentine.

An atom of the oil of lemons is composed of 20 atoms of carbon and 16 atoms of hydrogen, $C_{20}H_{16}$, and oil of turpentine has precisely the same composition, $C_{20}H_{16}$. The two substances are isomeric. Among all the wonders of chemistry there is none more wonderful than this principle of isomerism. That two substances composed of the same elements in the same proportions should vary so greatly in their odour, flavour, and other properties as oil of turpentine and oil of lemons is a puzzling mystery.

The oil of turpentine is isomeric not only with oil of lemons, but also with the oils of oranges, cloves, camomile, thyme, and bergamot. All of these are composed of only the two elements, carbon and hydrogen, and all in the same proportions, $C_{20}H_{16}$. The great difference in the odour and flavour of these several substances is to be accounted for only on the supposition of a different arrangement of the atoms. It is not difficult to conceive that if an atom of the oil of lemons is subjected to certain influences, that peculiar arrangement of its 20 atoms of carbon and 16 of hydrogen which gives it its peculiar properties should be broken up, and these atoms should receive that other arrangement which produces the properties of the oil of turpentine.

Heretofore chemists have not known what conditions were requisite for effecting the change in these two substances, so as to transform oil of lemons into oil of turpentine, and if our informant is correct in her observation she has made an interesting discovery in chemical science. But in other cases the transformation of one substance into another of the same chemical constitution is not only understood by chemists and practiced in the laboratory, but conducted on a large scale in the industrial arts. An atom of starch is composed of 12 atoms of carbon, 9 of hydrogen, and 9 of oxygen, $C_{12}H_9O_9$, with the addition of water, and sugar has precisely the same constitution. When a kernel of barley or other grain sprouts and begins to grow, the starch which it contains is transformed into the isomeric compound, sugar. It is for the purpose of effecting this transformation that grain is malted. The sugar thus produced is afterwards converted into alcohol by fermentation. Thus the production from grain of beer, whiskey, and all other fermented and distilled liquors, and therefore the great industries of brewing and distilling, as well as the prevalence of intemperance, with its immeasurable evils, all depend upon the power of transforming one substance into another of isomeric constitution by simply changing the arrangement of its atoms.—*Scientific American.*

Dress of our Extremities.

DURING the damp and cold season deficient dress of the feet and legs is a fruitful source of disease. The head, throat, and liver are perhaps the most frequent sufferers.

The legs and feet are far from the central part of the body. They are not in great mass, like the trunk, but extended and enveloped by the atmosphere. Besides they are near the damp, cold earth.

For these and other reasons, they require extra covering. If we would secure the highest physiological conditions, we must give our extremities more dress than the body. We men wear upon our legs, in the coldest season, but two thicknesses of cloth. The body has at least six. Women put on their four thicknesses under the shawl, which, with its various doublings furnish several more—then over all thick, padded furs; while their legs have one thickness of cotton under a balloon. They constantly come to me about their headache, palpitation of the heart, and congestion of the liver. Yesterday, one said to me, "All my blood is in my head and chest. My head goes bumpety-bump, my heart goes bumpety-bump." I asked, "How are your feet?" "Chunks of ice," she replied. I said to her, "If you so dress your legs and feet that the blood can't get down into them, where can it go? It can't go out visiting. It must stay in the system somewhere. Of course, the chest and head must have an excessive quantity. So they go

'bumpety-bump,' and so they must go, until you dress your legs and feet in such a way that they shall get their share of blood. In the coldest season of the year, I leave Boston for a bit of a tour before the Iyccums—going as far as Philadelphia, and riding much in the night without an overcoat; but I give my legs two or three times their usual dress. During the coldest weather, men may wear in addition to their usual drawers, a pair of chamois skin drawers with great advantage. When we ride in a sleigh, or in the cars, where do we suffer? In our legs, of course. Give me warm legs and feet, and I'll hardly thank you for an overcoat.

"My dear madam, have you a headache, a sore throat, palpitation of the heart, congestion of the liver, or indigestion? Wear one, two or three pairs of warm woollen drawers, two pairs of warm woollen stockings, and thick warm shoes, with more or less reduction in the amount of dress about your body, and you will obtain the same relief permanently that you derive temporarily from a warm foot-bath."

I must not forget to say that a thin layer of India-rubber cemented upon the boot sole will do much to keep the bottom of our feet dry and warm. Dr. Dio Lewis, in the *Independent*.

ONION PICKLE.—In November, take well dried onions, of a good shape, small and round, peel them and throw them into salt and water. Let them remain there a few days; drain them, put them in a jar and pour over them spiced vinegar.

TO WARM POTATOES.—Potatoes are nicely done in the following way: Par-boil as many potatoes as are needed; let them lie till the next morning, then cut them in small squares; add to them cream or milk, enough to make them more than moist, with a little butter, and pepper and salt. Place on the fire, cover them, and stir gently at times.

INDIAN LOAF-CAKE.—One pint of Indian-meal; 1 do. of flour; 1 do. sour milk; half teacup molasses; half cup shortening; a tablespoonful soda; a little salt. Put in a two-quart basin, set in a steamer over a kettle of boiling water; let it steam an hour, take out, place in the oven, bake half or three-quarters of an hour, eat hot.

DIABETES.—The cure of this disease is now effected in a very simple manner. It is this: Taking of fresh bran or yeast three or four times a day, at the same time meeting the waste produced by the disease on the system by the free use of Dublin porter, and all the solid nourishing food the patient can take. Cardinal Wiseman has been cured of an attack by this method.

TO TAKE LEAF IMPRESSIONS.—Hold oiled paper in the smoke of a lamp, or of pitch, until it becomes coated with the smoke; to this paper apply the leaf of which you wish an impression, having previously warmed it between your hands, that it may be pliable; place the lower surface of the leaf upon the blackened surface of the oiled paper, that the numerous veins that are so prominent on this side may receive from the paper a portion of the smoke; lay a paper over the leaf, and then press it gently upon the smoked paper, with the fingers or a small roller, (covered with woollen cloth, or some like soft material,) so that every part of the leaf may come in contact with the sooted oil paper. A coating of the smoke will adhere to the leaf. Then remove the leaf carefully, and place the blackened surface on a piece of white paper, not ruled; or in a book prepared for the purpose, covering the leaf with a clean slip of paper, and pressing upon it with the fingers or roller as before. Thus may be obtained the impression of a leaf, showing the perfect outlines, together with an accurate exhibition of the veins, which extend in every direction through it, more correctly than the finest drawing. And this process is so simple that any person, with a little practice to enable him to apply the right quantity of smoke to the oil paper and give the leaf the proper pressure, can prepare beautiful leaf impressions, such as a naturalist would be proud to possess. Specimens thus prepared can be neatly preserved in book form, interleaving the impressions with tissue paper.—*Art Recreations*.

RUSTIC HANGING BASKET.—Hanging baskets, whether in the greenhouse or the window, if nicely filled with living plants, are always admired. They are also quite fashionable, and why should not that have something to do with the matter as well as with fine clothes? The potters make pots to hang up, out of clay, the same as ordinary flower pots. These, with plants gracefully depending from their sides, are very pretty. Some use large sea shells, others the half of a coconut shell, while the more costly are

many kinds of terra cotta ware and endless patterns of rustic work. These last are what we started to speak of. We have seen some very elaborate styles of rustic baskets, imported from New York, mostly made of knotty and gnarly pieces of roots and bark of trees on a wooden frame work, most likely turned for the purpose. Now these, when nicely done, and varnished, are exceedingly pretty; so too are those made from the cones of pine and fir trees. These usually cannot be so readily varnished. There is yet another material plentiful in the west, and nothing is better or looks nicer; these are acorns. Acorn baskets, either with or without the cups, if equal sized acorns are selected and nicely put on (which any handy man can do) and then coated with two coats of the best coach varnish, are very much admired.

To obtain one without much trouble, get a small sized wooden bowl of the grocer, some brads, and acorns. These are all the materials required. For suspension cords, take copper wire, and run through the acorns to cover it. To be just right, the bowls require to be deeper than ordinary butter or wooden bowls, hence it is best to have them turned, where it is convenient to do so.—I. S., in *Prairie Farmer*.

Miscellaneous.

Nathan and the Chemist.

A SHREWD chemist, devoting himself to the missionary work of building up farming by the aid of his science, pays a parochial visit to one of the backsliders whom he counts most needful of reformation. The backslider, —I will call him Nathan,—is breaking up a field, and is applying the manure in an unfermented and unctious state; —the very act of sinning, according to the particular theory of our chemist, perhaps, who urges that manures should be applied only after thorough fermentation.

He approaches our ploughing farmer with a "Good morning."

"Morning," returns Nathan (who never wastes words in compliment.)

"I see you use your manure unfermented."

"Waal, I d'n'know—guess it's all right; smells pooty good, doan't it?"

"Yes, but don't you lose something in the smell?"

"Waal, d'n'know;—kinder hard to bottle much of a smell, ain't it?"

"But why don't you compost it; pack up your long manure with turf and muck, so that they will absorb the ammonia?"

"The what?—(Gee, Bright!)"

"Ammonia; precisely what makes the guano act so quickly."

"Ammony, is it? Waal,—guanner has a pooty good smell tew; my opinion is, that manure ought to have a pooty strong smell, or 'tain't good for nuthin'."

Scientific gentleman a little on the hip; but receives under the pungency of the manure.

"But if you were to incorporate your long manure with turf and other material, you would make the turf good manure, and put all in a better state for plant food."

"Waal—(considering)—I've made compo's afore now; dooz pooty well for garden sass and sich like, but it seems to me kinder like puttin' water to half a glass o' sperit; it'll make a drink a plaguey sight stronger'n water, no doubt o' that; but after all's said and dun,—'tain't so strong as the rum. (Haw, Buck; why don't ye haw!)"

Scientific gentleman wipes his spectacles, but follows after the plough.

"Do you think, neighbour, you're ploughing this sod as deeply as it should be?"

"Waal—(Gee, Bright!) it's as folks think, I doan't like myself to turn up much o' the yaller, it's a kind o' cold sile."

"Yes, but if you exposed it to the air and light wouldn't it change character, and so add to the depth of your land?"

"Doan't know but it might; but I ha'n't much opinion o' yaller dirt, nohow; I kinder like to put my corn and potatoes into a good black sile, if I can get it."

"But colour is a mere accidental circumstance, and has no relation to the quality of the soil."

"Gee, Bright! gee!"

"There are a great many mineral elements of food lying below, which plants seek after; don't you find your clover roots running down into the yellow soil?"

"Waal, clover's a kind of a tap-rooted thine

nateral for it to run down; but if it runs down arter the yaller, what's the use o' bringin' on it up?"

The scientific gentleman sees his chance for a dig.

"But if you can make the progress of the roots easier by loo-ening the sub-soil, or incorporating a portion of it with the upper soil, you increase the facilities for growth and enlarge your crops."

"Waal, that's kinder rash'nal; and ef I could find a man that would undertake to do a little of the stirrin' of the yaller, without bringing much on't up, and hord himself, I'd furnish half the team and let him go ahead."

"But wouldn't the increased product pay for all the additional labour?"

"Doan't b'lieve it would, nohow, between you and I. You see, you gentlemen with your pockets full o' money (scientific gentleman coughs—slightly), talk about diggin' here and diggin' there, and turnin' up the yaller, and making compo's, but all that takes a thunderin' sight o' work. (Gee, Bright! g'lang, Buck!)"

The scientific gentleman wipes his spectacles, and tries a new entering wedge.

"How do you feed your cattle, neighbour?"

"Waal, good English hay; now and then a bite o' oats, 'cordin' as the work is."

"But do you make no beeves?"

"Heh?"

"Do you fatten no cattle?"

"Yaas, long in the fall o' year I put up four or five head, about the time turnips are comin' in."

"And have you ever paid any attention to their food with reference to its fat-producing qualities, or its albuminoids?"

"(Gee, Bright!)—bumy—what?"

"Albuminoids—name given to flesh producers, in distinction from oily food."

"Oh,—never used 'em. Much of a feed? (G'lang, Buck!)"

"They are constituent parts of a good many varieties of food; but they go only to make musculo; it isn't desirable you know to lay on too much fatty matter."

"Heh?—keep off the fat do they? (Gee, Bright!) Pooty poor feed, then, in my opinion."

By this time the end of the trow is reached, and the scientific gentleman walks pensively towards the fence, while Nathan's dog that has been sleeping under a tree, wakes up, and sniffs sharply at the bottom of the stranger's pantaloons.

I have written thus much, in this vein, to show the defensible position of many of the old style farmers, crusted over with their prejudices—many of them well based, it must be admitted—and armed with an inextinguishable shrewdness. The only way to prick through the rind is to show them a big crop grown at small cost, and an orderly and profitable method, gradually out ranking their slatternly husbandry.—*My Farm of Edgwood*.

Tobacco Culture.

We have received from a friend and subscriber in Cornville, a letter, in which, after complimentary remarks in regard to us personally, he expresses his grief on account of the directions given in the *Farmer* on tobacco raising, and wishes us to publish the following. We are willing that every man should have his "say," for or against tobacco, in public or in private. This we do, not because we are friendly to the weed. We were born and brought up where it was used. Were taught, when a boy, how to raise it on a small scale, and how to "cure it," as it is called; and yet we never have used it in any way, shape or manner, except for killing lice on cattle or ticks on sheep, which we think the very best use that can be made of it. We think the use of it is a physical evil, and yet there are wiser and better men than we are, who think differently, and have as good right to enjoy their opinions as we have:

The California *Farmer* asks: "Why not plant tobacco, which pays better than any other crop?" To this Dr. Trall replies with his accustomed force, to all of which we respond, amen!

"Why not plant tobacco?" If the devil ever half kills himself laughing, it must be over such newspaper editors that say tobacco pays better than any other crop! Could his satanic majesty himself address a more devilish motive to selfish and erring humanity? "If our farmers would only raise tobacco enough, there would be no croaking about hard times." Did ever fiend or demon present a meaner motive to frail humanity? And yet the *Farmer* may not seriously intend any wrong. It may be thoughtless, heedless, stupid, on this particular subject, while it is intelligent on most others. But we cannot acquit ourselves to our conscience and our God, without entering our protest against such infernal teachings. Every editor of an agricultural journal in the United States knows full well that tobacco using is rapidly

degenerating the American people, and that tobacco culture is fast ruining the American soil. And we are of opinion that there is not an agricultural journal in the country or in the world, that can do good enough in all other ways to offset the evil of the one of advocating tobacco-raising. We only wish, therefore, that all such journals were dead and buried."—*Maine Farmer*.

The Law and Manners of the Road.

ALL of us have ideas more or less correct in regard to the law which regulates our use of the highways; and, at any rate, good sense and good nature are usually very safe guides. A few words on the subject, however, may not be amiss.

It is commonly said that every one has a right to half the road. This is practically true, and comes about in this wise: You and I meet upon the road—our legal rights are exactly equal, and both have a right to go our several ways without obstruction, so, popularly we say, I own half and you half. The law steps in to facilitate matters, and directs each to turn towards his right hand. The road should be "worked" wide enough for two teams abreast, then each man has a clear title to a passage on his right hand side of the way, and no one has a right to obstruct another while on his own proper track. This is true whatever the load or the team; for if one man can drive such a team that another can pass him but with difficulty or not at all, then their rights are no longer equal. This point becomes very important in winter, for it is no joke to turn your horse and all in the deep snow while your neighbour goes smoothly along in the beaten path. No one has a right so to load his team as not to be able to give up half the track to whoever demands it.

A footman may choose the part which pleases him on any portion of his right hand half the way, and the team must yield it to him. This is clearly so in winter, and no man is obliged to step into the snow for one or two horses; this is the law, and the Court awards it.

Now for the manners of the road; which, in some instances, vary from the law thereof.

The first requirement of road manners is good nature and an accommodating spirit. Do to others as you would have them do to you. Always be willing to yield more than half the space, then you will be pretty sure to be equally well treated. They who exact inches will have inches exacted of them. If your neighbour has a heavy load, consult his convenience as far as possible; you may sometime be loaded. It has become a practical rule of courtesy to turn out for wood or logs, and for other heavy teams in winter; for they say, "we often cannot turn out, and never safely, so if you want wood accommodate us;" which we are very willing to do. But remember it is a favour, not your right, and you have a reciprocal duty to perform, one which I am sorry to observe is not always borne in mind. When you have unloaded and are returning empty, just recollect that you had the whole road in the morning, and it is no more than fair that you should be particularly obliging to those whom you meet now, and give them their full share of the path.

One word in relation to teams going the same way; in which case many seem to think there is neither law nor manners. When a team comes up behind you, which desires to proceed faster than you do, that team has a right to reasonable space and opportunity to pass in—and your obstructing him in his lawful desire is both bad manners and bad law. If your load is heavy, do the best you can. In most cases the very least that can be asked is that you should stop. This is particularly so in the winter, when it is a heavy tax on any team to force it into a trot in deep snow—made necessary by your continuing at a walk. My remark above in relation to the emptied wood sled applies here, and, if one wishes to pass you, remember that while loaded you had the whole road.—*Via, in N. E. Farmer*.

A young dandy, who sported an enormous moustachio, asked a lady what she thought of his looks. "Why," said she, "you look as if you had swallowed a squirrel, and left the tail sticking out of your mouth."

A PETRIFIED BEE-TREE.—The Grass Valley National of California, says:—"There was found a few days since, in the diggings of John Chew & Co., on Buckeye Hill, in this county, between Greenhorn Creek and Chalk Bluff Mountain, a tree, with a bee-

hive, honey and bees, all petrified. The remaining portion of the tree in which the beehive was found is 2½ feet in diameter and 40 feet long. Chew & Co., while piping their claims, found the petrified beehive 75 feet beneath the surface. The beehive is no matter of fancy, but of pure demonstration. Before us is a sample of the comb full of honey, all petrified. The normal thickness of the comb, the duplicate of cells with their invariable hexagonal shape, are all before us as distinctly as if a fresh piece of honey-comb, all dripping, and just cut from the box, had been brought and placed before our eyes on a sheet of paper.

GIGANTIC SILK-WORM MOTH.—The silk-worm culturists of France announce the birth or hatching of the larvæ of *Bombyx Atlas*, an enormously large silkworm. This gigantic moth has never before been seen alive in Europe; and if it can be introduced into France it will prove of the greatest commercial value. Its cocoon is extremely large, and weighs nine grammes; whilst those of the ordinary worm do not exceed two grammes in weight. The grub lives on the leaves of a species of berry shrub.

HOW NATURE COVERS UP BATTLE-FIELDS.—"Did I ever tell you," says a correspondent of an Eastern paper, "among the affecting little things one is always seeing in these battle-fields, how, on the ground upon which the battle of Bull Run was fought, I saw pretty, pure, delicate flowers, growing out of the empty ammunition boxes; and a wild rose thrusting up its graceful head through the top of a broken drum, which doubtless sounded its last charge in that battle; and a cunning scarlet verbena peeping out of a fragment of a bursted shell, in which strange pot it was planted? Wasn't that peace growing out of war? Even so shall the beautiful and graceful ever grow out of the horrid and terrible things that transpire in this changing but ever advancing world. Nature covers even the battle-grounds with verdure and bloom. Peace and plenty spring up in the track of the devouring campaigns; and all things in nature and society shall work out the progress of mankind."

PRESSING TOBACCO FOR DOMESTIC USE.—Mr. James Laurie, of White county, Ind., writes to the American Institute Farmers' Club, as follows:—"Another man wanted to know how to manufacture tobacco. I will tell him how to press it for his own use tighter than tobacco was ever pressed by any other plan. Go to the wood pile or woods and get a hickory log two feet long and one foot over; bore two one-inch holes in the end down to three inches of the other, and then make a good hard wood ramrod and mallet, and proceed to load it with wads of tobacco, pounding it down well; then make one-inch pins of hardwood and drive into each hole as far as possible. This will press his tobacco so that it will look like wax. You must split the press to get it out, but one such press will hold ten or fifteen pounds, so that they will not have to be often made for home use."

A CHEAP AND NOVEL WEATHER-GLASS.—There is, in "Hone's Every-day Book," page 491, a letter, giving an account of a weather-glass, used for several years by a gentleman on whose veracity the author could depend. This strange barometer consisted of a common eight-ounce phial, filled to within one-fourth of its space with water, and having therein a leech-worm; the water was changed once a week in fine or summer weather, and once a fortnight in cold or winter weather; the mouth of the phial was stopped with a piece of fine canvas, and hung near a window in the room where the gentleman dressed. In fine weather, the leech-worm remained motionless at the bottom of the phial, rolled together in a spiral form; and as long as he saw him in that position in the morning, he was certain the day would be fine; if the day was to be wet or showery, he was sure to find him creep up to the top of his habitation, and he remained there till the weather cleared up. If wind or storms were near, it ran and galloped through the liquid, nor ever rested until the tempest began to blow violently. If thunder and rain were near, it generally kept out of the water for two or three days previous thereto, and discovered great uneasiness by throes and convulsions. In frost, as in fine weather, it kept its place at the bottom; before snow, it crept up to the very mouth of the phial. From these observations on the leech-worm, the owner was always able to foresee what sort of weather was likely to be expected; and as the cost or trouble of such a weather glass is so trifling, your readers can readily make a trial, and then they can judge from their own experience of the truth of the statement.

Poetry.

Ode to an Ox.

Ox, mighty Ox, huge specimen of size!
Great mass of ponderousness! Oh, thousand stoaks!
Enough to let the whole world gormandize—
Soup bones enough to fill all kettles. Shakes-
Peare, nor John Milton, nor that other one
Who wrote the famous Idylls of the King—
I mean—who should I mean but Tennyson?
Could Justice do to such a monstrous thing
As you are. Words there are not to describe
Your adipsal bigness. Numeration falls
To "foot up" every pound you weigh. Your tribe,
If many like you it can boast, on scales
Must be the most stupendous feature of
The animal kingdom. Surely you're the first
(In point of great obesity) creature of
All living things. What cow was it that nursed
So great a calf? Come, answer if you can,
Inform me by your bellowing language, Sir,
And be the first big ox to talk with man.
Or, if you wish some good interpreter,
Snort your desire. Why do you hesitate?
Your pause is heavy. Sure as I am born,
You shake your head at me. I know "your gait."
You ask me if I'll come and take a horn.
No, Sir, I must decline, oh, friendly ox!
Not at the present time would I partake
Of your great kindness. When the butcher knocks
You down, and you're "cove in" and "no mistake,"
I may accept your offer. But till then,
Bovinal Jupiter, I say good-bye.
If e'er, Colossal Beef, we meet again
'Twill be when you are roasted—probably.
—*New York Tribune*.

"At the Last."

The following beautiful poem was written upon the passage "Man goeth forth unto his work, and to his labour until the evening."

The stream is calmest when it nears the tide,
And flowers are sweetest at the eventide,
And birds more musical at close of day,
And saints divinest when they pass away.
Morning is lovely, but a holier charm
Lies folded close in Evening's robe of balm;
And weary man must ever love her best,
For Morning calls to toil, but night to rest.
She comes from Heaven, and on her wings doth bear
A holy fragrance, like the breath of prayer;
Footsteps of angels follow in her trace,
To shut the weary eyes of Day in peace.
All things are hushed before her as she throws
O'er earth and sky her mantle of repose,
There is a calm, a beauty, and a power
That Morning knows not, in the evening hour.
"Until the evening" we must weep and toll,
Plow life's stern furrow, dig the weedy soil,
Tread with sad feet our rough and thorny way,
And bear the heat and burden of the day.
Oh when our sun is setting may we glide,
Like Summer evening down the golden tide;
And leave behind us as we pass away
Sweet, starry twilight round our sleeping clay!

Enigma.

A few weeks since the following enigma was sent to the *Queen* newspaper by a person who stated that neither he nor his friends had been clever enough to discover the solution, though they had the puzzle two or three years in their possession:—

Himself he stood beside himself,
And looked into the sea,
And in himself he saw himself,
And wondered mightily.
And when himself within himself
He saw himself go round,
Into himself he threw himself,
And in himself was drowned.
Now if it had not been himself,
But any beast beside
Himself, he might have cut himself,
Nor in himself have died.

The last issue of our contemporary has the following answer from a contributor: "The solution of the clever riddle is, 'A Noddy and an Eddy.'"

Markets.

Toronto Markets.

"CANADA FARMER" Office, Jan 12, 1865

Business on the grain market during the past two weeks has been very light, owing chiefly to the absence of sleighing, but the fall of snow on Tuesday has caused the market to revive, and today a fair business was done.

Flour—Market dull, No 1 superfine at \$3 75 to \$3 80 per bbl, extra, \$4 20, superior extra, \$4 50 to \$4 60, fancy, \$4

Spring Wheat dull at 80c to 82c per bushel. Barley in demand at 65c to 70c per bushel. Oats at 38c to 40c per bushel.

Provisions—Butter—Fresh, wholesale, per lb, 14c to 17c retail, per lb, 18c to 25c, in tubs, wholesale, per lb, 16c to 17c.

Hams—Wholesale, per lb, 8c to 10c, retail, per lb, 10c to 12c. Fitch Bacon—Wholesale, per lb, 7c, retail, per lb, 11c.

Lard—Wholesale, 10c per lb; retail, 12 1/2c. Beef in small supply at \$2 50 to \$3 per 100 lbs., second quality plenty, at \$3 50 to \$4 00; 6c to 8c per lb, retail; first class in demand for home consumption and export, at \$4 50 to \$5 per mt., wholesale; 8c to 10c per lb, retail.

Calves \$3 50. Sheep, by the car load, \$3 to \$3 50. Lamb, by the car load, \$2 25, very good but ug \$2 50.

Hides (green) per 100 lbs., \$3 to \$3 25, dry hides, 6c to 8c per lb. Tallow 8c per lb.

Calfskins (green) 10c to 12c per lb; dry, 10c to 18c. Sheepskins (green) \$1 to \$1 25 each, dry, 16c to 18c.

Coal, Lehigh \$10, Canton \$8, Bituminous \$7 50 to \$8. Wood \$5 25 to \$5 60 per cord.

Potatoes in better supply at 35c to 45c per bushel retail. Apples, \$1 to \$2 00 per bbl.

Chickens, 25c to 35c per pair. Turkey, 60c each. Geese, 30c to 40c each.

Montreal Markets.—Flour, per barrel of 196 lbs.—Superior extra, \$4 70 to \$4 90, extra, \$4 60 to \$4 65, fancy, \$4 35 to \$4 40; superfine from Canada wheat, \$4 25 1/2 to \$4 27 1/2; middlings, \$3 30 to \$3 60; pollards, \$2 90 to \$3 10; bag flour, \$2 35 to \$2 37 1/2 per 112 lbs. Market tends downward.

Some very choice fancy and extra were sold at exceptional prices. Superfine from Canada wheat changed hands in a number of instances at \$4 25, \$4 27 1/2 being also paid, strong brands bringing a little over the latter price. Lower grades quiet.

Oatmeal, per barrel of 200 lbs.—\$4 75 to \$5. Wheat, per bushel of 60 lbs.—Some U. C. spring, extra, sold at 96c, receipts continue chiefly for city millers.

Barley, per 45 lbs.—65c for 50 lbs. Ashes, per 100 lbs.—Range for pots today, \$5 37 1/2 to \$5 42 1/2; sales of Urins and Inferiors chiefly at \$5 40 to \$5 42 1/2. No sales of ports reported.

Dressed Hogs, per 100 lbs.—Sales of good lots at \$6 75 to \$6 80 for averages of about 200 lbs, a considerable lot bringing the latter price; smaller lots of heavy weights have been sold at higher figures.

Butter, per lb.—A sale of choice dairy reported at 19c; store-packed sold at 15 1/2c to 16 1/2c. Cheese, per lb.—Good dairy nominal at about 8c to 10c.—Witness.

Hamilton Markets, January 10.—Flour—Superfine No. 1, \$3 30 to \$3 50; No. 2, \$3 75 to \$4; fancy, \$4 to \$4 25; superior extra, \$4 50 to \$4 75. Wheat—Fall, 85c to 90c; spring, 60c to 62c.

Barley, 60c. Peas, 60c. Oats, 37c to 38c. Potatoes, 37 1/2c. Beef, per 100 lbs, \$3 50 to \$4. Butcher, 15c to 20c fresh; 13c to 15c per dirkin. Pork, \$6 to \$7.—Spectator.

London Markets, January 10.—Fall Wheat, per bushel, 85c to 87c. Spring Wheat, do, 77c to 79c. Barley, do, 55c to 60c.

Oats, do, 35c to 36c. Peas, do, 65c to 60c. Corn, do, 56c to 60c. Hay, per ton, \$14 to \$16. Dressed Hogs, per cwt, \$9 to \$9 75.

Butter, fresh, per lb, 16c to 20c. Butter, keg, do, 12c to 16c. Potatoes, per bushel, 37c to 40c. Flour, per 100 lbs, \$2 to \$2 60. Eggs, per dozen, 20c to 25c. Hides, dry per lb, 6c to 7c. Hides, green, do, 3 1/2c. Sheepskins, fresh off, 80c to \$1 25. Calfskins, per lb, green, 8c to 10c. Calfskins, do, dry, 14c to 15c. Lambskins, 75 1/2c to \$1. Wool, per lb, 38c to 40c.

Chicago Markets, January 9.—Flour—Market rules quiet. Wheat, quiet and declined 1c, sales at \$1 62 1/2 to \$1 70 for No. 1. Corn steady, sales at 85c to 88c for new No. 2. Oats, quiet and declined 1/2c, sales at 64 1/2c to 65c for No. 1.

Provisions—dull, Mess Pork, \$38, Prime Mess, \$35 60; Lard, 22c. Hogs—Quiet at \$11 to \$13; Dressed Hogs, quiet and declined 2 1/2c to 50c, sales at \$14 to \$14 50, dividing on 200 lbs. Receipts—1,700 bushels flour, 24,000 bu. wheat, 17,000 bu. corn, 51,000 bu. oats, 6,000 hogs.

New York Markets, January 10.—Flour—Receipts 4,150 barrels, market dull and lower; sales 4,500 barrels, at \$9 70 to \$9 85 for superfine State; \$10 15 to \$10 25 for extra State; \$10 30 to \$10 35 for choice do; \$9 75 to \$9 90 for superfine Western; \$10 20 to \$10 65 for common to medium extra Western, \$11 20 to \$11 25 for common to good shipping brands extra round hoop Ohio Canadian flour dull and 6c lower; sales 300 barrels, at \$10 15 to \$10 25 for common; \$10 35 to \$12 for good to choice extra.

Rye flour quiet, at \$8 50 to \$9 50. Wheat—Receipts 300 bushels; market dull and drooping; sales 7,200 bushels Chicago spring, at \$2 20 and 7,000 bushels prime winter red Western, at \$2 53. Rye dull. Barley quiet. Corn—Receipts 7,467 bushels; market firm; sales 7,600 bushels mixed Western, at \$1 90 in store. Oats dull and drooping, at \$1 06 for Western. Pork dull and a shade easier, sales 1,000 barrels, at \$43 to \$43 25 for new mess; \$42 to \$42 60 for one year old do. Beef steady.

New York Cattle Market.—The market for beef cattle presented no new features this week. The supply was moderate; but the offerings were poorer, while the weather was unfavourable, which facts counterbalanced the small receipts. Had the weather been favourable and the cattle as good as usual, an advance would have been assured. Prices varied from 9 1/2c to 15c and 20c, with some sales at more extreme figures. Most of the cattle sold at from 13c to 18c. Milch Cows were quiet. Veals were steady, with a fair demand at last week's figures. Sheep and Lambs were in good demand at improved prices. Hogs were also in good demand, and prices were a shade higher. The total receipts were 6,040 calves, 89 cows, 693 veals, 14,900 sheep and lambs, and 12,711 hogs.—N. Y. Tribune, January 11.

Buffalo Markets, Jan 9.—Flour—Saturday, 150 bbls, at \$11 00 for double extra Ohio, and \$12 00 for double extra Indiana white. Wheat—Sales for the week were light, the demand being confined to car lots for city consumption, at \$2 03 for Canada Club, \$2 30 for Canada white, \$2 39 to \$2 40 for Michigan white, \$2 60 for Kentucky do, and \$2 00 for Chicago spring without certificate. No 2 Chicago spring, with certificate, quoted at \$2 05, No 1 Chicago and Milwaukee at \$2 09 to \$2 10, and red winter at \$2 16 to \$2 20.

Corn—Sales for the week about 10,000 bushels, at \$1 35 to \$1 44 for new in car lots and from store. Old quoted at \$1 65 to \$1 60, with only one sale reported during the week of 480 bushels at \$1 57. Oats—Sales for the week were chiefly confined to small lots bagged at 80c to 90c; held at 87c to \$80 from store. Barley—Small lots Canada sold during the week at \$1 78 to \$1 80; Western offered at \$1 82 to \$1 83. Rye—Quoted at \$1 50 to \$1 65, with no sales reported. Peas—Held at \$1 65 to \$1 60 without buyers. The demand is very light, with but small stock in the market.

Butter—Market active, quoted at 46c to 48c for primo Western and Canada, and 49c to 62c for choice State dairy. Provisions—Market firm. Heavy Mess Pork selling at \$39 to \$40, and Light do at \$34 to \$39. Lard decidedly firm, at 24c to 24 1/2c. Sugar Cured Hams, canvassed, quoted at 21c to 22c; plain do, at 20c a 21c. Bacon, 21c; shoulders at 17c to 18c. Dried and Smoked Beef, 18c to 20c.

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Messrs. JAS. MASSIE & CO., Merchants, Guelph: GENTLEMEN,—In answer to your enquiries respecting the immediate effects of COE'S PHOSPHATE on my crops this season, I have to say that notwithstanding the facts that the season has been adverse, and that it was applied to the wheat only as a top-dressing, and even as late as the 1st of June, yet it has been very advantageous. Summarily,—I think that it produces both LONGER AND STRONGER STRAW, makes the EAR LARGER, and the GRAIN MORE PLUMP, together with MATURING the CROP EARLIER than barnyard or any other manure used in this country. Its effect on barley is GREATLY BENEFICIAL, and on potatoes it is almost magical. In this opinion I am sustained by the steward of my estate, who has been bred to practical farming both in Europe and in America.

I hope the farmers of this township, together with all the farmers in Canada West who can procure it, may be induced to apply it to their crops next season. I remain, Gentlemen, most respectfully yours, GEORGE C. MOORE

Moorefield, Maryborough, C. W. } September 5, 1864. } v2-2 Sold by J. Fleming & Co., Toronto, C. W. and in all the principal towns throughout Canada.

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