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The Field.

Turnip Cultivation.

THE introduction of the Turnip into the ordinary rotation of field crops marked a new era in the history of agriculture. "Had the turnip," says Mr. J. C. Morton, "continued to be what it originally was—a mere garden plant cultivated only for culinary purposes—it is no exaggeration to say that Britain would not have occupied the high position she now enjoys among the nations of the earth, whether as regards agriculture or commerce."

The turnip rejoices in a dropping summer, and a moist, warm, dark autumn. Its earlier development depends on the soil and a judicious use of manure. Afterwards, its nourishment is largely drawn from the atmosphere by means of its broad spreading leaves. Probably the largest crops are obtained by means of small doses of concentrated manures—ammoniacal or composed of phosphates—which exert a powerful influence on the crop during the earlier stages of its growth. The more minutely pulverized are the particles of the manures, the more rapid and shortlived is the action on the young plant, so that under some circumstances it is advisable to supply bones—for example—in a half inch form, in order that the crop may be saved from mildew and premature ripening by being too rapidly forced.

On account of the absorption of ammonia and carbonic acid from the atmosphere by the leaves of the turnip, it is a great enricher of the soil, while its deeply penetrating roots draw up nourishment from sources quite beyond the reach of cereal crops. The air above as well as the subsoil beneath are thus made to furnish food to the crop; and under a proper system of husbandry, where the roots are consumed by stock under favorable conditions, the fertilizing properties gathered and concentrated in the turnip are restored to the surface soil in the form of farm-yard manure. Like all bulbous rooted plants, the turnip grows with most vigour in a free, rich soil. Unquestionably, turnips should be sown in drills from 28 to 30 inches apart. If the land is dunged in the autumn these should be formed shallow, for if the drills are raised to a sharp angle the auxiliary manures to be applied, get too deeply buried.

When turnip land is ploughed in spring preparatory to sowing it, is a good plan to cross-plough twice, the second furrow leaving the land comparatively loose, and in a favourable condition for drilling and sowing. If the drills are to be



formed across the line of the ridges it is the custom of the best "old country" farmers to make the furrow preparatory to the drilling, along the line of the old furrows.

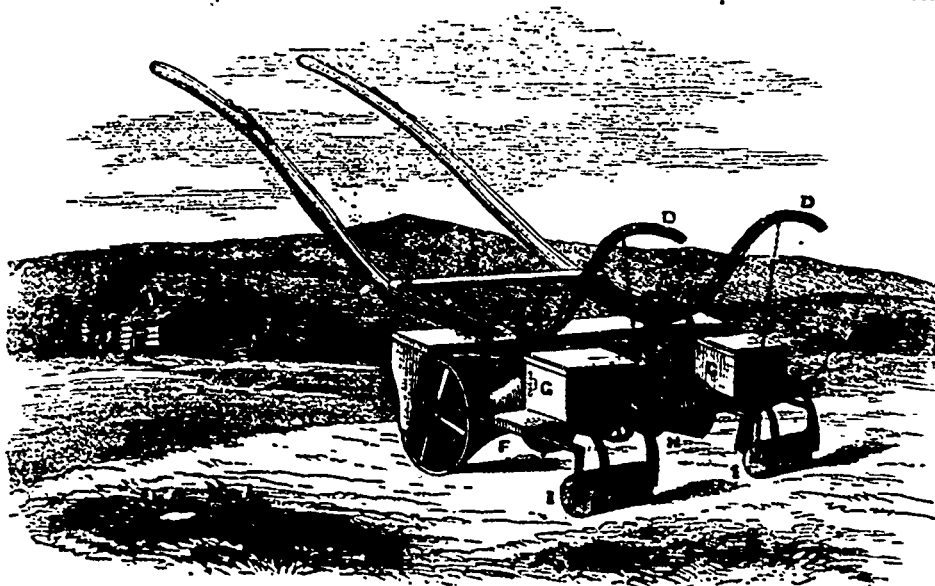
Whenever it is practicable, farmers should manufacture their super-phosphate at home. The following process is furnished to an eastern exchange by a correspondent:—"Firstly—pound the bones to a coarse powder with a hammer, then put them into a boiler with a little water and steam them for half an hour, remove the bones to a half barrel or other convenient vessel. If the sulphuric acid is of full strength take of it half the weight of the *dry* bones you are about to dissolve, and add to it one third of its bulk of water, pour this mixture on the bones, and in about a week, with daily stirring, they will be reduced to a paste. I then put all the hen manure I have on an earthen floor, and pour on it the dissolved bones reduced with its own bulk of water, and mix the whole thoroughly, then add a barrel of charcoal dust or dry peat to every twenty pounds of bones, again mix, make the lot into a snug heap; in a few days, work it over and again let it heat, repeating the working and heating till the whole becomes a dry powder that you can sow broadcast, or feed from a drill machine.

Last year with the bones from the house and the manure from twelve hens, I made eight barrels of super-phosphate that proved itself superior to Coe's wherever tried, particularly in the garden and on corn.

The cost was almost nominal:—
 Sulphuric acid, 20 lbs. \$1 00
 Labour and horses, say 1 00
 Half barrel spoiled 0 50
\$2 50

8 bbls. superphosphate, 150 lbs. each—1200 lbs., at Coe's price, 2 cts. per lb. \$24 00"

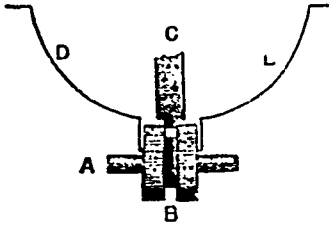
SWEDEN TURNIPS contain less water in their composition than the common field turnip. They grow more slowly, require better land in higher condition, and are better able to resist severe frosts. Less water is contained in their composition, and they are consequently more nutritious than common turnips. As a rule, the produce of swedes per acre is less than the common varieties, but their nutritive qualities are at least thirty per cent greater. There are several fine varieties of the swede none of which perhaps are superior to "Sharpe's Improved," as shown in our illustration. It attains great size, is rich in nutritive qualities, and is unexceptionable in flavour.



Its reputation is yearly increasing in Britain; and the same remark will, we trust, be long apply to Canada, for those enterprising British Seedsmen have already established a seed store in Guelph. C. W.

TURNIP-SOWING MACHINES vary considerably in size, structure, and complexity. Some are small hand barrows, and others are large horse-drawn implements. Some sow only one row, while others sow two, or several. Some sow only seed, others both seed and manure. The accompanying illustration gives in perspective a double-rowed turnip drill, contrived by Mr. Geddes Dumfries Scotland. The machine in question is very popular in the Lothians, and from what we have seen of it, it appears to work very satisfactorily. We have, however, seen double-drill sowers that we like better, but we found it impossible to get a sketch of one, in time to appear with this article. The accompanying machine may be thus described: *a a* is a plank, *b* are the pendants upon which the frame work is supported upon the axles of the curved rollers. The horse shafts *c* are bolted on the plank *a*, and the handles *d d* are jointed to it, and, being embraced by open guards, permit the elevation and depression of the coalters, by means of the chains, according to circumstances: *g g* are the seed-box frames; *h h* are spur-gearing, shown exposed, by which the seed axles are moved; and *i i* are the hind covering wheels.

The distributing apparatus in this machine is peculiar. The interior of the seed-box is formed into a semi-cylinder, of which the accompanying vertical section is an illustration, *d d* being the interior sur-



face of the box. In the bottom of this seed-box, an opening is made to receive a brass roller *b* having a groove running round it. The roller is mounted on axle *a* which is produced to a sufficient distance beyond the box for receiving the last wheel of the series already described, the connection with which gives motion to the roller *b*. A slider *c* is attached to the interior of the box, which is capable of nice adjustment by means of a screw or otherwise.

In closing this article, we would earnestly impress on every farmer in Canada whom this sheet reaches, to see to it that he puts in a few acres of turnips or mangolds, or, if possible, of both. Nothing is better for purposes of cattle feeding in winter, and as every farmer knows, no kind of farm produce is more remunerative than fat stock.

Familiar Talks on Agricultural Principles.

AMENDMENTS

The word "amendments" is a convenient phrase for denoting the improvement of the soil, whether by certain operations upon it, or certain additions to it. Thorough tillage alone will in many cases improve neglected or worn-out land. When ploughing has been but superficially and poorly done, it is an excellent plan to go down more deeply, and by the use of the cultivator and barrow, completely pulverize the soil. Too many persons regard ploughing and harrowing simply in the light of necessary preparations for the seed. They know it is of no use to scatter seed on a hard, compact surface, and that it must have a soft bed in which to take root and grow. But they do not appear to know that stirring the soil has other beneficial effects beside that of preparing a suitable bed for seed to grow in. The processes by

which the nutritive material in the earth is prepared to the use of plants, require air and water. Without these, valuable stores of plant-food may remain locked up in the ground, and be of no service whatever. Tearing up the soil, breaking and crushing the hard clods, and thoroughly fining the land, give access to air and moisture, and thus makes fertilizing material available for the nourishment of growing crops. Beside this effect of stirring the soil, it must not be forgotten that the air itself is laden with fertilizing gases which are attracted and fixed by the soil, when it is in such a condition that air passes freely among it. In short, the ground has pores, as truly as the human body, which must be kept open, and free circulation secured, in order to health. The state we are accustomed to call "mellowness," is thus that which is in various ways most favourable to vegetation. To bring land into this condition, and keep it so, should be a prime object with all cultivators. So useful is mere tillage, that by this alone, and without the use of manure of any kind, an eminent British agriculturist, Mr. Lawes, has had on a piece of ground used for experiment, an average of about sixteen bushels per acre of wheat for many years in succession, a better average yield than most farmers in this country can boast, who practice rotation of crops, and the occasional use of manure. A correspondent of one of the American agricultural papers recently said, "If I had a call to preach on gardening, my constant text should be, 'STIR THE SOIL.'" Not a bad text that for a lecture either on agriculture or horticulture. Let it not be forgotten, that in an important sense, *tillage is manure*.

The texture of a soil may be improved not only in the way above described, but by a mixture of soils of different qualities. Thus, stiff clay land is benefited by the addition of sand, gravel, broken brick and plaster, in short, by anything calculated to render it more loose, open, and easily penetrated by air and water. In England, clay land is often improved by paring off and burning a thin sod, or by burning a portion of the clay and scattering it on the land. Burning has the effect of rendering clay more like sand, and so makes the soil more loose. Sandy land, on the other hand, is bettered by the addition of clay, marl, or any material which will have a tendency to give it more substance and cohesion. Coal ashes, lime rubbish, peat composts, marsh and creek mud, are valuable additions to the several soils to which they are adapted. In proposing by such means to improve land, it is necessary to consider the question of expense. It will not pay to haul such materials a long distance, but if it can be had near at hand, and the expense of transportation will not be great, it will certainly pay well to adopt the methods above indicated. It should be borne in mind in weighing the question of cost, and deciding whether a proposed course will pay, that some improvements, such for example as the addition of clay to a sandy soil, or of sand to clay, are of permanently good effect. When an amendment of this kind is accomplished, it is done once for all, and the land will never cease to profit by it. Such additions can never be wasted by exhaustion, though of course it requires more than improvement of texture, to make a given soil productive.

Draining is a most important and valuable amendment so much so, that it deserves a fuller and more distinct notice than can be given it in this "Talk." At least one article must be devoted wholly to its consideration. In this connection, however, it is well to remark, that deepening the soil by means of a subsoil plough secures not a few of the advantageous results of draining. When the surface has been run out by bad farming, or where a "hard-pan" exists below the shallow depth to which the plough has been in the habit of going, subsoiling is a most wise and necessary operation. It not only secures some of the good results of draining, but by admitting air, moisture, and fertilizers more deeply into the ground, gives a more roomy bed for the seed to grow in, and provides a larger supply of food for the growing plant. Cases have been known in which the subsoil plough has been the means of producing excellent crops from cold white sand and clay, previously very unproductive. While, however, subsoiling in some instances has to an extent a like beneficial effect with draining, it is always necessary in low and flat land that draining should be done before subsoiling, otherwise an injurious wetness may be the result. A fuller consideration of subsoiling will naturally come up, when the subject of ploughing is under notice.

Next to the description of amendments which have been enumerated, comes improvement by means of manure, a fruitful topic, with the bare mention of which we must content ourselves at present.

Thin Sowing.

In a late issue of the *Mark Lane Express* we find the following interesting communication from that clever agriculturist—Ald. J. J. Mechi:—

Sir, Let us keep our minds unprejudiced in this matter, and open to conviction, by small and continued experiments, which will give us safe ground to act upon. I wish that it were possible that all agriculturists could see my experimental half-acre of wheat, dibbled with one peck per acre, in all the stages of its growth. I see it daily from my window, and it suggests no end of reflections. There are the four stetches, looking in the distance like a bare fallow; while the rest of the field, sown with four pecks per acre (my usual quantity), is as green as a grass-field. Judging from its appearance, I should at once condemn it as a failure, and yet we know from past experience, and feel confident, that these bare lands will, at harvest, produce a crop more abundant than the green mass that surrounds it.

It would be most interesting to record, by short-hand notes, all the feelings engendered by an inspection of those bare stetches by practical agriculturists during the various stages of the wheat's growth—from positive disbelief and doubt, passing, in gradation, to the admission of surprise and conviction at the result, so successful but so unanticipated. But so it is, and we felt it ourselves more than once. There are the little plants from single kernels, at intervals of 6 inches by 4½, and on looking closely at them we see peeping out of the tiny but numerous shoots that are to radiate horizontally, and cover the ground with strong and reedy stems, so that the field will look as though it had been rolled with an immense roller, and every stem almost glued to the soil. In due time these horizontal shoots will take an upward movement, having at the time that admirable and useful curve of resistance which enables the plant to hold its erect position, regardless of winds and storms. How different at harvest from the laid and injured crops which, owing to crowding, are compelled to go up at once vertically without the curve of resistance! How small the kernels and dull and soft the straw of the thin-sown, whose plump, well-developed kernels give unmistakable evidence of a more natural and proper proceeding!

When harvested and "traved," or shocked, the contrast in the straw is most striking and convincing. By this thin-sowing you get more straw (tested by weight), as well as more corn, than by thicker-sowing, besides the absence of midew. Said a Wiltshire man to me, just before harvest, as he was closely examining each plant or bundle of growing stems: "Well, Mr. Mechi, you might have written all your lie about this, but I should never have believed if I had not seen it. And it certainly is very wonderful that the stems from each kernel should range from 10 to 30, but so it is, and this does not depend upon the quantity of the seed sown, but upon the quantity of nutritious matter in the soil available for the growth and full development of the plant. Twenty times as much seed would not produce a crop where there was not available food."

I will now describe the whole of the facts quite irrespective of mere opinions. On one clover lea yearly, when I have drilled my usual quantity—4 pecks of wheat—1 dibble in, on four lands, or half-an-acre, half-a-peck of wheat, which is one kernel in each dibble hole, 6½ in. by 4 in. apart. It is dibbled at the same time as the rest of the field, sometimes in October and sometimes in November, so as to be a fair comparative trial. The land is strong clay land. I have not yet tried so small a quantity on the light land, although I shall do so next year. I fear, however, it might not answer so well on light land, on account of birds, and other reasons. The yield from this peck an acre was in 1864, 58 bushels per acre, and 2½ tons of fine straw. This last year, 1865, the yield was 58 bushels per acre (straw not weighed). In both years the yield exceeded the remainder of the field by 2 bushels per acre, and the straw in 1864 was also more abundant. This year (D.V.) I shall duly report the results, which I have no doubt will be the same; and yet with these facts so patent I lack the courage to reduce my quantity from a bushel generally. By these repeated trials I shall, however, gain confidence, and probably drill an acre or two in each field with 2 pecks. Last year I thought it impossible that the thin-sown could equal the bushel, for it went in badly, and altogether looked like a failure.

The peck of thin-sown red wheat only equalled the thicker-sown red in 1865, but the white beat the thick-sown white by 2 bushels. In 1864 both red and white thin-sown carried the day over the thick-sown. All

my heavy land wheat in 1865 averaged something over 7 qrs. per acre.

I don't believe that farmers know how much they often lose by thick-sowing. They would do so if they tested, as I have done for years, comparative qualities on a small scale. Every man should thus judge for himself according to his soil, climate, and other circumstances of condition, &c.

The frothy straw and light kernels of a thick-sown and early-laid grain crop are a losing affair.

If ever we heard of an extraordinary yield, it is usually from a crop so thin in the spring that its owner thought of ploughing it up; but after well harrowing, &c., it branched amazingly, and became the best crop on the farm.

It is clear that there is some gross error in sowing when our average increase is only nine kernels for one. Mine is at least 40 to 58 for one.

The Sowing of Barley.

If it be true that the seed time for barley may be regulated according to the season as indicated by the leafing or estivation of the elm-tree, we may hope that, notwithstanding all the checks and hindrances to barley sowing during the present wet and cold spring, we are not, after all, so much behind.

Those learned in old saws will remember that the leafing of the "elmen" tree was made to regulate operations both in the field and in the garden, as thus:—

When the elmen leaf is as big as a mouse's ear,
Then to sow barley never fear.
When the elmen leaf is as big as an ox's eye,
Then says I, "Ho, boys! ho!"

This year we past the middle of April, and the first size of the elm leaf had been scarcely attained; indeed, except in some low bushes, these trees scarcely showed any signs of leafing, their tops being as bare as in winter; and it would appear that, if there be no great reason for any extraordinary pressure as regards barley sowing until the elmen leaf reaches the size of an ox's eye, the farmer may be content who finishes this important farm operation before May.

Now that there may be exceptional seasons when the behaviour of a wild plant might indicate how we should act as regards a cultivated one is just possible; at the same time we cannot help thinking that, as a general rule, the earlier barley sowing be completed the better; and our own observations upon this crop lead us to infer that the lateness at which much barley must be sown this year will have a highly unfavourable impression upon this crop at harvest time. Our own barley sowing and its results for last year led to the following conclusions—that barley sown after the middle of March becomes, according to time, less in quantity, depreciated in quality, and, of course, will command a less price, points upon which the following results will afford good evidence.

RESULTS OF BARLEY CROP, 1865.

No. of field.	When sown.	Yield in bushels.	Price per qr.
1	March 16	40	39s
2	March 25	40	38s
3	April 3	32	34s
4	April 12	28	32s
5	April 13	26	32s
6	May 2	22	30s

These results were obtained from a hundred acres of barley sown at different times, and for the most part after roots, being indeed sown as the land could be got ready after the sheep; and though it is true that the variation of soil has had something to do with the matter, yet we cannot help thinking that other matters being equal the same amount of variation will be observable. As a proof of the correctness of this opinion, it may be stated that as a general rule the earlier this grain is sown the less seed is necessary to ensure a crop, clearly showing that for vigorous growth, barley wants as much time within certain limits as can be given to it.

It is quite true that in practice the farmer waits for the feeding off of his roots to sow this grain usually, because when his roots are finished he will have no green food crop sufficiently forward to take them to. Hence, then, some earlier clover than we now possess would be a desideratum, or our practice in farming should be modified. We propose to meet this by growing alternate stretches, say of ten rows each, of Swedes and mangolds, with liberal manuring; the mangolds to be stored. Thus the crop of Swedes could be consumed on the whole field, and when these were gone the mangolds might be made subservient to the improvement of the poorer pastures by throwing them to the sheep thereon, by which means these would be bettered, and the sheep and lambs (if a breeding flock) would be in a warmer position and on more solid ground in the meadow than they have been in the mud of arable fields, as in the present wet spring.—*The Field.*

Artificial Irrigation of Grass Crops.

A RECENT issue of our able cotemporary—*The Farmer* (Scottish)—contains an interesting editorial account of the plan adopted by Mr. Isaac Brown for the production of successive crops of grass on a small field adjoining his residence near Edinburgh.

"On Wednesday last," says the Editor of *The Farmer*, "Mr. Brown brought specimens of his first crop for this season under our notice, one of which consisted of grass measuring from 20 inches to 21 inches in length; the other of grass not over 9 or 10 inches in length. In the former case the stems were strong, but in the latter the grass was weak and stunted.

Artificial manure had been applied last year to all parts of the ground, and the difference in the growth was entirely owing to the circumstance that water had been applied where the grass was luxuriant, while that important promoter of vegetation had been withheld where the growth was stunted.

We shall recapitulate the leading features of Mr. Brown's plan, for the information of those of our readers who may not have seen the former account given in our columns.

The field to which the water has been applied is about an imperial acre in extent. It was sown with Italian rye-grass at the middle of last May—7 bushels per acre—and the first crop was cut at the end of June. The water used is perfectly pure, being derived, in fact, from the ordinary supply of the city. It is distributed by a series of lead pipes placed 14 yards apart, and communicating with a main pipe which runs across the upper part of the field. The small or parallel pipes are perforated with small holes, and when the water is turned on it is thrown out in innumerable small jets all over the ground. The artificial manures which have been applied as a top-dressing are thus washed into the roots of the grasses, and are therefore more effective than would otherwise be the case. The quantity of water applied per acre to produce a crop varied from 1,000 to 1,500 gallons, according to the temperature, natural supply of moisture, &c. Mr. Brown had five cuts next last year, and as the plants are now stronger, a greater amount of produce might have been expected this year; but as the ground is about to be taken up for other purposes, he will shortly be under the necessity of abandoning his plan for watering grass, at least for the present. However, any one desirous of seeing the system at work may still have an opportunity of doing so.

We have made these remarks because we think that Mr. Brown's plan of forcing early and successive crops of grass possesses particular features of interest at present. It seems likely that cow-keeping in large towns will henceforth be less followed than heretofore; and, in fact, one of the greatest drawbacks to a system of dairying for supplying large towns with milk from the country, has been the difficulty of getting a sufficiently early supply of grass for cutting. Now, by Mr. Brown's plan this would be obviated wherever there is a small stream from whence a regular supply of water could be obtained. It has also the advantage of being more under command than any ordinary system of irrigation by which water is allowed to flow over the ground. By the usual mode of irrigation, artificial manures are apt to be washed away, whereas by Mr. Brown's plan those fertilizers are washed into the soil, so that nothing is lost, and their power becomes much increased. Mr. Brown, as stated in the previous account which we gave of his system, has in fact had it in operation on land adjoining a river; and he has estimated that with an original outlay of a little under £15 an acre for pipes, a rental of £2 per acre, and an expenditure of £5 to £6 an acre on artificial manures, from 40 to 50 tons of grass can be produced on an acre during the season, at a cost of 6s per ton, inclusive of rent, interest, labour, &c. To those, therefore, who contemplate establishing dairies in the country for the purpose of supplying milk to large towns, it is evident that Mr. Brown's plan presents the means of readily meeting one of the greatest obstacles in their way; and we feel sure that to such Mr. Brown will gladly communicate any additional information that may be necessary to enable them to put it in operation.

Top-dressing Oats.

Oats are seldom topdressed on account of "a general impression among farmers that an oat crop will not repay the outlay to be incurred in the purchase of manures." Such an impression is not well-

founded. In 1861 I had a field of stiff undrained clay, in low manurial condition, topdressed with Peruvian guano, at the rate of 12 cwt. 3 qrs. 1 lb. per acre. The experimental plots consisted of six ridges, containing 1 ac. 0 ro. 27 poles: the produce of each plot was thrashed out on 20th September of the same year with the following results:—

Yield of grain on manured plot.....	Bolls	Bushels
unmanured plot.....	6	4
	3	0
	3	4

Giving an increase of the former of..... 3 4
The yield of straw, at the rate of say 3 cwt. to the boll, was on topdressed plot 20 cwt., undressed ditto, 9 cwt., giving 11 cwt. in favour of the manured portion. Calculating the overplus of oats at 16s. per boll, and of straw at the moderate rate of 2s. per cwt., the value of the increase of produce amounts to £3 17s. The cost of guano, including carriage, &c., for (the whole plot of) 1 ac. 0 ro. 27 poles, amounted to £2 4s. 6d. thus leaving a clear profit of £1 12s. 6d. on the topdressed plot, or 27s. 1d. per acre.

In 1865 I topdressed another field of oats with the following mixture:—Peruvian guano 1½ cwt., per acre; superphosphate of lime 1 cwt. per acre; bone-meal 1 cwt. per acre—which cost me, including carriage, &c. £1 16s. 4d. The produce of the experimental plots was thrashed in the middle of October, and gave the following satisfactory result:—

Yield of Grain	Weight per Boll	Yield of Straw
to. bu.	st. lbs.	at 3 cwt. to the Boll.
cwt.		
Manured plot.....	7 1	18 0
Unmanured do.....	4 1	17 6
	3 0	0 8
		9

The field first referred to was in second years grass in 1863 the crop almost a blank. The second field also at the time of breaking up was in two year old grass—the land undrained and otherwise in bad condition.

These experiments were conducted more for my own satisfaction than with the view of publication; but they were carried out with sufficient exactness to prove that a judicious application of auxiliary manures to oat crops will prove highly remunerative.—*A. M. in N. B. Agriculturist.*

WINTER MULCH.—The past winter has been unfavourable for grass lands. During a considerable portion of the time the earth has been left bare of snow and exposed to intense cold. The ground has been frozen to a great depth, and the alternate freezing and thawing must have killed the roots of grasses to a greater extent than usual. Whatever inconveniences and discomfort there may be in deep and long continued snows in our climate, they serve as a protection, or winter mulch, for our grass lands, and the increase of crops at harvest more than balances the account of their inconveniences in winter. Every one must have observed that where the snow lies thick and long, there the grass springs up earliest and is rankest. The old adage then, "Snow is the poor man's manure," is not without foundation in fact. It costs nothing, and is very valuable. Nature teaches important lessons, if we do but heed her counsels, and we learn from the action of snows that a winter mulch is not without profit. Those farmers who left a good coat of grass upon meadows at the commencement of winter, we apprehend will find their account in it the coming season. The protection which it gives to the roots and tender blades during a season of little snow, and where the ground is laid open to the blasts of winter, will be almost equal in results to a coating of manure applied in spring to meadows that have been fed down close in fall, while the latter is much the most expensive. Manures spread in fall operate beneficially also in this way. They act as a protection against the severity of frosts and severe winds, and then there is the virtue of the manure, which, in itself, is a counter-acting influence against cold, giving greater vigour to the plants late in the season, and bracing them for the winter frosts, as a well-filled stomach of nutritious food braces up the human system for endurance. Let farmers reason philosophically upon the action and agency of manures in producing crops; whether the manure spread upon the surface in fall and winter will not keep the ground warm, and draw from the atmosphere some of its well known gases, and fix them in the soil. The practice of feeding the aftermath down in the fall is very objectionable. The injury to the land is very much more than the value of the grass for feed. Our best farmers have learned this fact from experience. We like the application of all kinds of manures spread evenly and finely so that the coat becomes, as it were, a part of the soil, because this acts to get up an additional growth of grass, which serves as a winter protection or mulch, to say nothing of manurial value from the decay of the grass during the next season.—*Ulster Herald.*

Canadian Natural History.

The Fox.

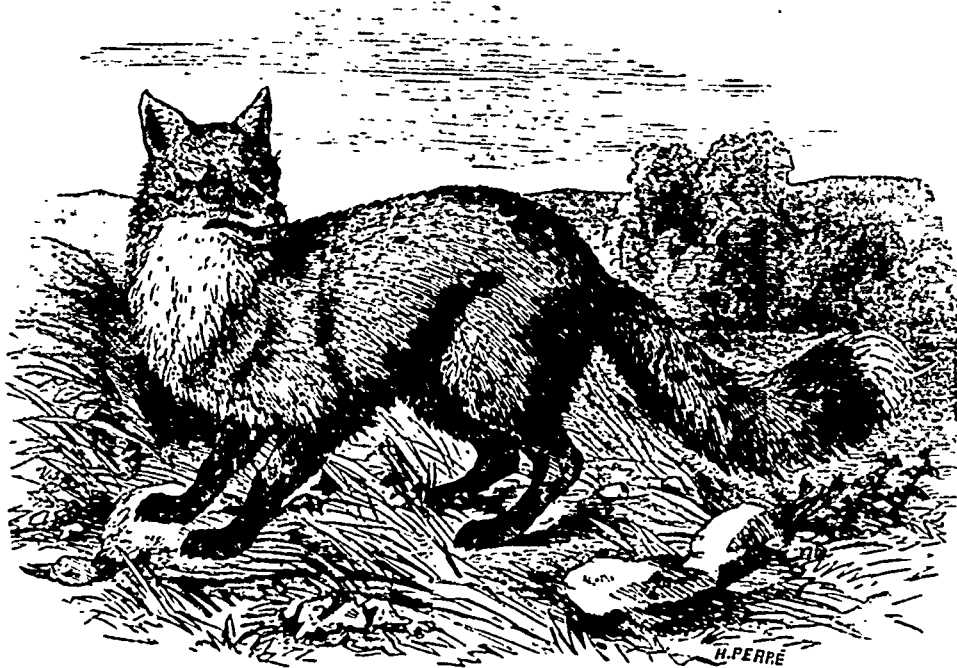
(*Vulpes*, Cuvier.)

The animal forming the subject of our present sketch, has been handed down to us from remote antiquity, through fable and history, as the very embodiment of all that is cunning, daring, and deceitful. All manner of hard names have been applied to him, and at the present day, the epithet, foxy, is proverbially applied to the astute and unscrupulous knave. Although the animal is unquestionably voracious, thieving and destructive it is well to remember that he lives as he was intended to live, and simply obeys the laws of his existence. Impelled by hunger, he must eat or die. Unrestrained by the operation of any moral law, he has a perfect right to any thing that comes in his way. If he steals out at nightfall to provide for the family left behind in his burrow, he is probably not unconscious that his footsteps are waylaid by steel traps, and that possibly the hounds will be on his track in the morning. Still he braves the dangers, and snatching the food from the jaws of death, hastens home to share the repast in the family circle. It is well said by a great and good man of our times—There is something holy, in and of itself, and touching in what we are as well as to call the cunning, thieving, and reprobate Fox, risking his life and forgetting his appetite for the sake of God has given him."

The Fox belongs to the what is called the Vulpine division of the family *canabæ*. He is distinguished from the dog and wolf by his lower stature, pointed muzzle, shorter neck, slender limbs, and long bushy tail. Near the base of the caudal appendage, nature has placed a gland, from which a strong and unpleasant odour is diffused. The scent thus evolved pertinaciously clings to every object with which it comes in contact. Poor Reynard thus leaves an unfortunate record of his progress behind him. The consequence is, that his enduring qualities and cunning often are put severely to the test, as he scuds away—the wind on his cheek—before the crack of the hunting whip and the indescribable howling roar in which huntsmen indulge, ring a prospective death-knell to his startled ear. Adroitly he doubles, and dodges, and leaps to throw his pursuers off "the scent." His spirit and resolution are unailing, as with accelerated speed he bounds on to reach some well known place of safety.

When on a foraging expedition he is particularly dexterous in securing his prey. Weather permitting, he leaves his burrow about eleven o'clock at night, and pays a visit, of no friendly character, to the neighbouring farm-yards, hen-roosts, and other outbuildings. If, as is sometimes the case, his prey be perched beyond his reach, he resorts to stratagem. As an instance of his cunning take the following from the *London Sporting Magazine*—"A neighbour of ours," says the writer, "had a large number of

At other times, the Fox follows the steps of small animals, and pounces upon the hare in her form, and birds on their nests. He is partial to fruit, especially grapes—a weakness of Reynard's, by the way, which Æsop has seized, on which to hang one of his incomparable fables and its lesson. The animal is so cunning that he is very rarely taken in any kind of trap. When he becomes unbearably destructive in any neighbourhood, the favourite method of destroying him is by the employment of strychnine, which is now



familiarly used for this purpose even by remote Indian tribes. The Fox breeds once a year, and brings forth from four to eight at a birth. There are upwards of fourteen well ascertained species of this animal of which six are found in North America.

The Common American Red Fox (*Vulpes fulvus* Desm.) shown in our first illustration, has long silky fur, with a full bushy tail tipped with white. The colour is reddish yellow, grizzled with gray on the lower back.

The Arctic Fox shown in our last wood-cut is principally confined to the more northern regions of this continent. It is smaller than the Red Fox, "with a very full and bushy tail, the soles of the feet thickly furred; in

the adult, the colour is white, in the young grayish leaden."

AGE OF ANIMALS.—A bear rarely exceeds twenty years; a dog lives twenty years; a wolf twenty; a fox fourteen or sixteen years. Lions are long lived. One has been known to live to the age of seventy years. A squirrel or hare seven or eight years; rabbits seven. Elephants have been known to live to the great age of four hundred years. When Alexander the great had conquered Phoris, King of India, he

took a great elephant which had fought valiantly for the king, and named him Ajax, dedicated him to the sun, and let him go, after placing upon him this inscription: "Alexander, the son of Jupiter, hath dedicated Ajax to the sun." This elephant was found with this inscription three hundred and fifty years afterwards. Pigs have been known to live to the age of thirty years; the rhinoceros to twenty. A horse has been known to live to the age of sixty-two, but averages from twenty to thirty. Camels sometimes live to the age of one hundred. Stags are long lived. Sheep seldom exceed the age of ten. Cows from fifteen to twenty. Cuvier considers it probable that whales sometimes live one thousand years. A swan has attained the age of two hundred years. Pelicans are long lived. A tortoise has been known to live to the age of one hundred and seven. Insects, as a general rule, are short lived.

fine turkeys, which usually roosted in the branches of some tall firs adjoining the farm-yard. They were beyond his reach, and he accordingly was observed to resort to the following artifice. He scratched the ground beneath the tree with his fore-feet, and then the base of the tree itself, in order to draw their attention, at the same time looking up to mark every movement. He then ran round the tree in rapid rings. The turkeys, aware of their danger, followed his quick movements with their eyes, and



became confused and dizzy. One bird fell plump upon the ground and was instantly killed. The like scheme was repeated, and down came another, which shared the same fate. Both were borne off to the earths."

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The Household.

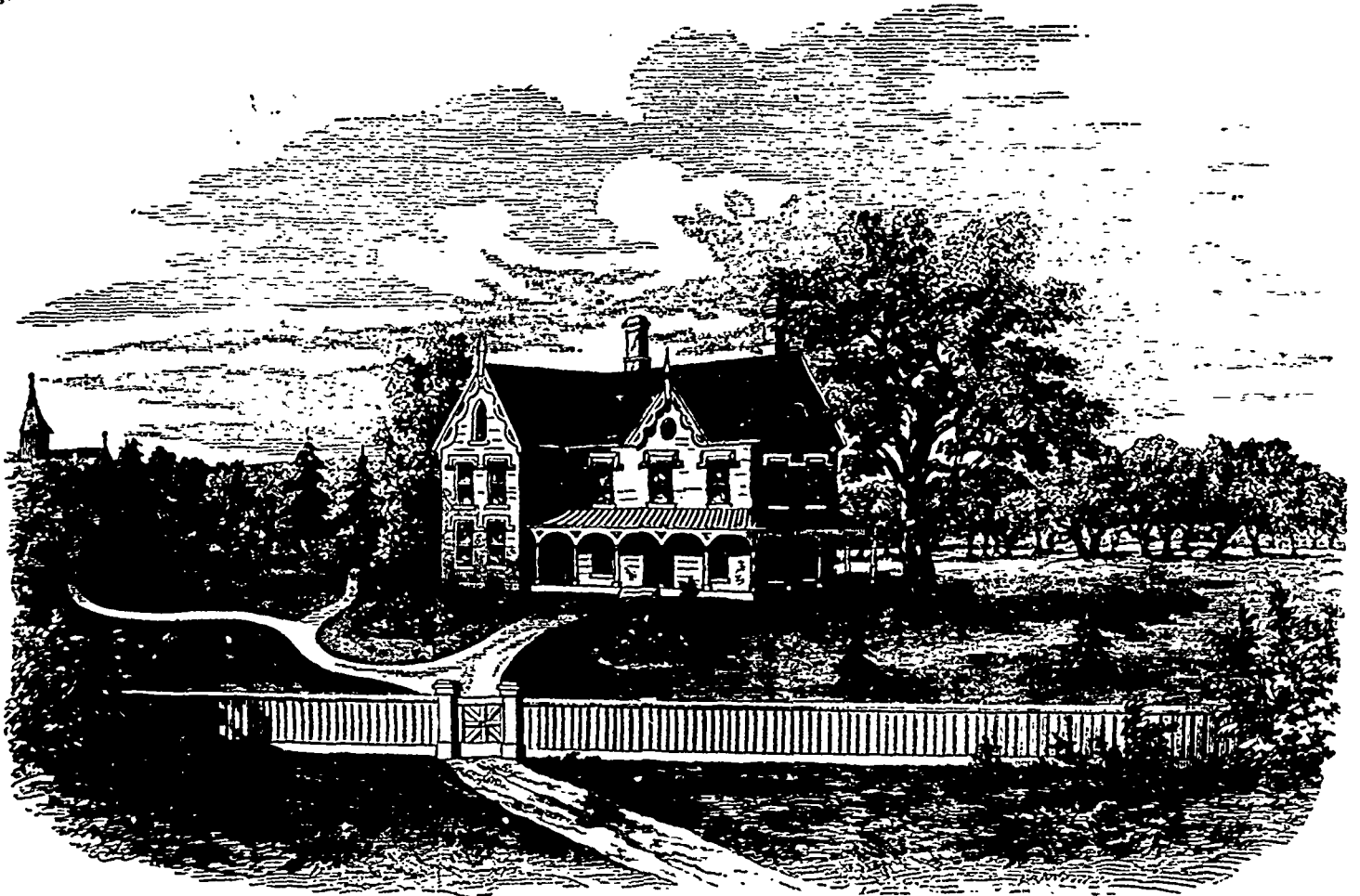
Homedale Farm.

THE HOUSE WARMING.

The improvements at Homedale were carried forward expeditiously, Mr. Perley having been accustomed during his city life to a pushing style of doing things, and believing that it was better to have work soon over and done with, than to have it lingering about a great while. It is often the case that buildings in the country are a long time in progress, and approach completion at a sort of snail's pace. Some people indeed think that work cannot be done well unless it is a considerable time in hand. But there may be dispatch without haste. A job is no better for being nursed, and brought to a tardy finish by slow stages.

things that engaged the attention of the visitors. It must be confessed that Homedale presented a very pretty appearance. The alterations in the house described in a previous chapter as having been planned, had been successfully carried out, and the surroundings made to correspond with the re-modelled dwelling. The accompanying illustration will show how the premises looked when the dwelling and carriage-house were completed, the fences built, the trees planted, the grounds laid out, the walks made, and everything put in proper order. It was indeed a wondrous change which the new-comers had wrought, and the guests expressed their admiration and satisfaction in no measured terms. Some among them were well able to appreciate the display of energy and taste which had been made by their host and hostess, and if there were those who had been previously inclined to think disparagingly of "ornamental fixings," they were more than half won over by the pleasant, homelike look of

stock so as to consume a larger amount of produce upon the farm. His views were accorded with by several of his guests, who having been attentive readers of the readers of agricultural journals for many years, were already making or contemplating a change in their system of management. The subject of cheese factories was also discussed, and it was generally agreed that there was room for profitable engagement in that branch of enterprise, so successfully carried on in the United States. Bee-keeping was also talked over, Mr. Perley expressing the opinion that in no part of the country was there a better opening for it, but upon those plains where clover was grown so extensively, and where consequently bee forage was so abundant. The difficulties of old methods of bee-keeping, and especially the cruel practice of destroying the bees for their honey, were spoken of by various members of the company, and those whose reading of the rural journals had "posted" them in bee literature, descended with animation, on



It had been a cherished purpose of Mr. Perley's to give a few of his neighbours a social entertainment when his improvements were finished. Some of them were old acquaintances, but others were strangers to him, having settled in the neighbourhood after his departure to the city. He had detected among a few of his neighbours an ill-concealed tendency to be rather shy of him, as a gentleman from the city, and a species of innovation; he was therefore anxious as far as possible to remove this feeling, and create a good understanding and cordial friendliness all around him. Accordingly on the completion of Homedale, he invited a goodly company to spend the afternoon and evening at his now capacious and comfortable abode. The season was a favourable one for such a party, it being the short interval of comparative leisure which comes between seeding and haying, so that a little time could be conveniently spared. Mr. and Mrs. Perley received their guests with unaffected cordiality and soon put them at their ease, and made them feel at home. Of course inspection of the improvements which had been effected, and the expression of complimentary opinions in reference to them, were very naturally the first

everything about them. Much rational improving conversation was had about life in the country, local matters, and public affairs. Mr. Perley turned the current of talk as much as possible toward rural pursuits, as there were several points to which, in a quiet, unostentatious way, he wished to call the attention of his friends. He ventured to express the opinion that Burford and the surrounding region was growing too much wheat, and although it was succeeding well with a clover alternation, such a system could not last. He knew that many of the best farmers about him, made wheat their main dependence, relieving it only by seeding down to clover, and ploughing under the aftermath for fall wheat every third year. He argued that while the success of this plan spoke well for the resources of the land, it was nevertheless an exhaustive system, that the least rotation which had been found permanently to answer was the Norfolk four year's course, and that it would be wise policy to resort to other crops, especially now that the midge and other insects were rendering wheat more uncertain than in other days. He recommended the cultivation of turnips, flax, and the keeping of more

the modern improvements by means of which bees can be tamed; and, installed in moveable-comb hives, managed with the greatest ease. The organization of a Farmers' Club was another topic introduced by Mr. Perley, and received by his guests with much approval. It was agreed that on the approach of the season of long evenings, they would unite in the formation of one, and discuss more fully the subjects of interest which had been talked over. The main object of the social gathering; viz. the formation of a kind, friendly, neighbourly feeling was gained to the satisfaction of all concerned and especially to that of the entertainer. Mr. Perley took occasion to suggest to his friends that farmers, generally speaking, are not sociable enough, that they live too lonely a life, and should take more pains to cultivate acquaintance with one another. He condemned the caste feeling which often keeps near neighbours from being in terms of intimacy, and maintained that, however, inevitable this might be in city life it was to be regretted even there, while in the country it could easily be avoided, if the more prosperous residents would set themselves against it. One of the guests told a laughable story of two neigh-

hours in another township where some vestiges of aristocratic feeling had taken root, and occasionally sprouted forth. It so happened that one of these neighbours was made a magistrate, and the next day after receiving notice of his appointment, he waited on the other, and with much show of official dignity, informed him that her Majesty had been pleased to make him a justice of the peace, and this being the case their families could not henceforth be on the same terms of intimacy which had before prevailed. He had made a grand ascent in the social scale. Mr. Perley remarked that mental and moral worth was the true basis of esteem, and that, however, other standards might prevail in the centres of money and fashion, the simple life of dwellers in the country should know nothing of them. This passed a most agreeable visit.

The young folks had company as well as their parents. There was plenty of room in-doors and out-doors for a troop of juveniles, and so Charley, Lucy, and Georgey, were surrounded by a merry band of companions about their own ages. Children soon become intimate acquaintances, and some warm friendships sprung up at once. The little Perleys initiated their young friends into city plays, and were taught in turn those of which country juveniles are fond. With a pretty fair supply of playthings, and childhood's exhaustless fund of merriment, the time glided by very swiftly, and all felt a twinge of sorrow when the hour of separation came. The Homedale housewarming was a subject of pleasant recollection for many a day.

(To be continued.)

HAIR-WASH FOR DANDRUFF.—The *Scientific American* gives the following recipe.—Take one pint of alcohol and a tablespoonful of castor oil, mix them together in a bottle by shaking them well for a few minutes, then scent it with a few drops of lavender. Alcohol dissolves castor oil, like gum camphor, leaving the liquid or wash quite clear. It does not seem to dissolve any other unctuous oil so perfectly, hence no other is equally good for this purpose.

WOODEN SHOES.—These are worn almost exclusively by the Germans, in this country. We have repeatedly recommended them as excellent clothing of the feet for all farmers engaged in stable or barn-yard cleaning, or other wet, dirty work, which would injure leather materially. It is true they are awkward, and the wearer goes along with a hard thumping tread, but what of that? They are not recommended for dancing pumps, walking shoes, nor dress boots. They are useful in their place; durable and economical, costing \$1.50 to \$2 a pair. For spading, ditching, or tramping down garden paths, there is no foot clothing equal to a wooden shoe. A pair kept in the kitchen to slip on, to run out doors for something of an evening, is very convenient, as they will protect the feet from wet and cold.—*N. Y. Tribune.*

PLANTS IN THE KITCHEN.—The warm, dry, confined air of heated rooms is not congenial to plants, hence the failures of parlour gardening. By providing intervening sashes between the living room and the place assigned to plants—a bay window for instance—the plant-room may be more thoroughly ventilated, kept moist and cool and in this condition they thrive well. The heat is obtained by opening the windows directly into the living room. In such a place, in addition to the pots of flowers, tomatoes, cabbages, lettuce, egg-plants, etc., may be successfully grown in boxes and many transplanted into the open ground. They may be grown without such provision, but require more care. Provide long, narrow boxes to sit on a shelf in the window and sow the seeds, covering lightly and pressing down the soil. Warmth and moderate moisture will soon bring them up, after which they must receive as much air as possible on warm days: watering frequently, but not enough to keep the soil damp on top. A frequent sprinkling on the foliage is beneficial. Guard against the extremes of great heat by day and cold by night. After growing two inches in height it is well to transplant into other boxes, leaving them at such a distance apart that each plant may be taken out separately with earth attached to the roots. In this manner, plants may be raised without a hot bed. Dug out turnips are sometimes used, set in boxes of earth, and when transplanted into the open soil, the turnip with its one or two plants is set in the ground. It soon decays and the roots push through the sides. From the middle of March until the first of April is a suitable time for sowing the seeds.—*N. Y. Tribune.*

Stock Department.

Shorthorns—Bates versus Booth Breed as Milkers.

The Editor of the "Shorthorn Intelligence" in Bell's Messenger discourses on the relative merits of these two famous breeds as follows.

A correspondent, who assumes the signature of 'An Old Shorthorn Breeder,' asks the editor of the *Irish Farmer's Gazette* 'where in Ireland he can get a bull with as much of the Bates blood as possible,' and proceeds to give his reasons for desiring an animal fulfilling this condition. 'Now that butter is so dear, it behoves the farmers of Ireland to breed cattle with as good milking properties as possible. From my observation, the more we get into Booth blood, the less milk we obtain. It is all very well for the show-yard, but certainly I find the old saying is quite correct—Booth for the butcher; Bates for the pail.' The editor's advice deserves all commendation; 'You must advertise,' to which judicious counsel the following words, containing, we believe, the exact truth, are appended.—'Hitherto Booth blood has been the most fashionable in Ireland, and Bates at a discount.' * * * The expression, 'as much of the Bates blood as possible,' means of course entirely Bates. Had 'An Old Breeder' merely sought a *strong infusion* of Bates, he might have been referred to several herds in this country, for it is here, as our cotemporary plainly implies, he must inevitably look for what he wants; but as Bates undiluted is the desideratum, the area of choice contracts, and the opportunities of selection are reduced in number. He will find pure Bates bulls at Wetherby, in the herd of Captain Gunter; at Walton-on-the-Hill near Liverpool, in that of Mr. C. W. Harvey, at Holker Hall in Lancashire, among the shorthorns of the Duke of Devonshire. We do not mention Mr. Betts's Grana Duchesses, for the alarming element of Booth is present; neither do we include in our reference the fine herds of Mr. Bowly and Mr. Rich for though many of the more recent calves at Siddington and Dudmaston are virtually Bates, and belong to families remarkable for their milking powers, they fail to meet the requirements of an 'Old Breeder,' inasmuch as the earlier particulars of their descent are dissimilar from those which characterize the genealogies of Kirklevington shorthorns. 'An Old Shorthorn Breeder' had better come over to England and look about him, but let him leave at home his Bates and Booth epigram. He will find great milkers among both sorts, and he will find bad milkers in both. Undoubtedly, the higher bred shorthorns are in general far less noticeable than they used to be for dairy capabilities, but the change is chiefly attributable to the exhibition-epidemic, from which the smallest hamlet is scarcely free. Men who have studied breeding at all, have been breeding their cattle for the last thirty years with direct regard to the development of properties which are incompatible with the production of large quantities of milk and butter. What reason have they to complain if the laws of nature refuses to deviate from their established regularity? If the several points which indicate a disposition to milk were half as anxiously desired and urgently cultivated as those which denote fitness for the showyard taste, we should soon escape from a wasteful folly, and restore to one of the noblest sorts of domestic animals its ancient claims to honour. Even as things now are, a man may obtain a milking herd of high bred stock; but moral courage will be quite as useful to him as judgment in choosing. He will find such animals in every variety of shorthorn blood, and he will perpetuate such animals if he mates the sexes with special reference to the principle in question. As to Booth and Bates, there are, as we said before, milkers and non-milkers of both kinds. The "head-centres" of pure Boothism are at Warlaby and Stockhouse; the herds in both places being exclusively Booth. We are not aware that it is so anywhere else. At both places there are good milkers. At the latter, Annabel, Claribel, Princess Louise (who is now unfortunately not breeding), Countess of Windsor, and Dame Quickly, may be particularly mentioned. Farewell, the dam of Imperial Windsor, was a very abundant milker; Wide Awake, who did not give more than a ewe gives when Mr. Carr bought her, became at least equal to an average milker in a mere dairy stock; and her daughter, Windsor's Queen, who displays all the characteristics of a show animal, brings up her calves and makes them fat."

Malt as Food for Stock.

Mr. Lawes's report of experiments undertaken by order of the Board of Trade to determine the relative values of unmalted and malted barley as food for stock has been issued. It narrates the results in great detail, and presents the following conclusions:—"The general conclusion from the results of the direct experiment with cows, oxen, sheep, and pigs is that a given weight of barley is more productive both of the milk of cows and of the increase in live weight of fattening animals, than the amount of malt and malt dust that would be produced from it. The results of these new experiments, as here stated, are consistent with those obtained in an official inquiry conducted, in 1845-6, by Drs. Thomas and Robert Dundas Thomson, with cows and with oxen. They are consistent with the result of experiments made at Rothamstead, in 1848 and 1849, with sheep; and also with those of others made in 1854 with pigs, in which some were fed on sugar. Wherever weights have been taken as a measure of the effects produced experience hitherto has failed to show any advantage in malt over the amount of barley from which it would be produced, as a staple food for healthy milking cows or fattening animals; and, if no advantage, there must, in point of economy, be a loss, on account of the cost of the malting process. Irrespective of economy, malt is undoubtedly a very good food for stock; and common experience seems to show that a certain amount of it is beneficial when given in an admixture, and in change with other food, to young or weakly animals, or in "making up" or "finishing" for exhibition or sale; that is, when the object is to produce a particular result, irrespective of the economy required in ordinary feeding.

Washing Sweated Horses.

A CORRESPONDENT of the *London Field* answers an enquiry whether it is a safe practice to wash sweated horses in cold water. He says he has adopted it and with beneficial results, both in summer and in winter. After washing, the animal should be rubbed dry as far as practicable, and the legs especially. Should the hair on them be too long to admit of this being sufficiently done, flannel bandages should be put on, and a woollen rug thrown loosely over, but without the roller. In the course of an hour, the horse will be tolerably dry, and should then have another rub-down and be clothed in the ordinary manner. If horses were treated in a more rational manner than is often the case, with pure air and scrupulous cleanliness, disease would be far less common.

What is more refreshing to a man after a hard day's shooting, or other laborious exercise, than a warm or cold bath? And I believe it to be equally so with the horse. To the tired hunter, a warm foot-bath and fomentation, if the animal is sufficiently quiet, is most refreshing. With gentle treatment, most horses can be used to almost anything. Some years ago I visited the royal stable at Buckingham Palace. There, as I was informed—and at the time myself witnessed the operation—every horse, summer and winter, was washed from head to foot with cold water, after returning from work, no matter whether it had been out one hour or six. A regular bath-house, cold water and plenty of it, two men after the ablution scraping, scrubbing, etc.; a kind of web cloth was thrown over to admit of evaporation, and the horse was afterwards rubbed down and clothed as usual in the course of an hour or two. We cannot all have such appliances, but still I consider the plan rational and conducive to the health of the horse, if only ordinary care is taken.

A REARING HORSE—Whenever you perceive a horse's inclination to rear, separate your reins and prepare for him. The instant he is about to raise, slacken one hand, and bend or twist his head with the other, keeping your hands low.—This bending compels him to move a hind leg, and of necessity brings his fore feet down. Instantly twist him round two or three times, which will confound him very much, and completely throw him off his guard. The moment you have finished twisting him round, place his head in the direction you wish to proceed, apply the spurs, and he will not fail to go forward; if the situation be convenient, press him into a gallop, and apply the spurs and whip two or three times severely. The horse will not, perhaps, be satisfied with the first defeat, but may be disposed to try again for the mastery. Should this be the case, you have only to twist him, &c., as before, and you will find that in the second struggle he will be much more easily subdued than on the former occasion; in fact you will perceive him to quail under the operation.—*Northern Farmer.*

The Dairy.

An Ohio Cheese Factory.

AN Ohio dairyman makes the following report of his operations in one of our exchanges.

I commenced the erection of my factory buildings on the 18th day of March, 1865, and they consisted, when completed, of a continuous building 191 feet in length, and 30 feet in width; 100 feet of it three stories high, and 60 feet one and a-half story high, and the balance, 31 feet, but one story high. There is capacity and pipes laid for putting in six sets, of five hundred milk gallons each, although there were but four put in last season. The first milk was received at the factory May 2nd, and the last December 9th. Commenced with making two cheeses the first day, and closed up with making thirteen the last. The greatest number made per day, 27; and the total number made, 3,419. Seventeen hundred averaged 85 pounds each, and the balance about 48 pounds each.

The number of pounds of milk received was 2,125,145, equal to 206,324 gallons, from which I made and sold 228,514 pounds of cheese, for the sum of \$17,701 89, averaging 16½ cents per pound for the cheese, 1 775-100c. per pound for the milk, 18 27-100 per gallon for the milk, and a yield of one pound of cheese to 9 3-10 pounds of milk. One-half of the milk was skimmed after the 4th Oct., and all skimmed after the 22nd Oct. The average number of cows from which we worked the milk was 530, averaging 431 pounds of cheese per cow, and \$71 13 gross, and \$62 51 nett, to the dairyman, clear of all expense. That amount is simply for the cheese made and sold after the 2nd of May.

The total expense to the dairymen getting the milk drawn, made up, everything furnished by the manufacturer, and the cheese marketed, was two cents per pound, leaving net 14½c. For one dairy of 13 cows I made 505 pounds cheese per cow, \$83 32 per head, another of 21 cows, 461 pounds cheese per cow, and a number of others near that amount. Some may think that yield not large, but I wish them to recollect that one month at least of the cheese-making season was gone before I commenced making at my factory. The factory will start again this season the 1st of April, running on the same principle as last season, making a uniform and No. 1 article of cheese, and for which we shall expect to get a No. 1 price, and give satisfaction to the buyer and dairymen. My factory has capacity sufficient to work the milk from 1,200 to 1,500 cows, which I expect to have the present season.

Milk for Cheese Factories.

EDS. RURAL NEW-YORKER:—Certain parties propose erecting a cheese factory in our midst, and wish to buy milk of the farmers of the surrounding community. They propose to buy it for 10 cts. per gallon, estimating the quantity by weight, taking the New-York standard, (if any such there is,) and as one of the farmers interested I wish to enquire through the RURAL what the practice is at present in the factories of your State in this respect, as it makes quite a difference whether we sell a wine gallon, a beer gallon, or a certain number of pounds.—EDWARD E. GARFIELD, La Foz, Ill.

REMARKS.—The New York factories do not purchase milk for cheese making. The milk when received at the factory is weighed and each patron credited with the number of pounds delivered, and has his proportion of the cheese manufactured, paying from one cent to two cents per pound for manufacturing. When milk is measured the beer gallon is made the standard. A beer gallon of milk it is estimated will make a pound of cured cheese, on an average through the season. Factories generally average a pound of cheese from a little less than 10 pounds of milk. At present prospects for cheese sales, it would be safe for factories to contract milk at 10 cents per gallon.—Rural New Yorker.

AMERICAN CHEESE IN ENGLAND.—We learn that the Secretary of the American Dairymen's Association received a communication from Messrs. Corduroy & Co.,—the large London Cheese-factors—from which we select the following useful suggestions. Our Dairy farmers will do well to give these hints their careful attention and shape their style of cheese accordingly.

The defects in cheese do not always arise from error in the manufacture, but from atmospheric changes or the heat of the voyage. As a rule we think American cheese should be shipped a little under ripe, as flavo-

is a great desideratum here, and there is but little cheese of any sort that can be held long over without becoming somewhat strong. We also like cheese to be of a rich silky grain, and of a nice straw color, a deep shade of color is an objection.

Quality is now the test of appreciation on the part of consumers, and the cheese made in your country has more nearly approached the price of our own make this season than in any former one, and we may quite hope with the enterprise exhibited on your side, and the determination to produce a very fine article that your "Factory" dairies will take a high rank in this market.

The market just now is dull. The high rates have an awkward trade, as a deal of Cheshire is held back by farmers in that county, who have lost most of their cows by the disease which has been prevailing there. On the whole, we are inclined to think that prices have touched their highest point. It will be necessary to act with considerable caution this coming season, and it would be unsafe to take present rates as a base for future operations."

Entomology.

The Leaf-Cutting Bee.

We have lately received from Mr. William Brown, of Owen Sound, a very curious specimen of the nest of this remarkable and interesting insect. It is contained in the hollow of a wooden tap used to convey the sap from maple-trees to vessels placed beneath. The nest consists of half a dozen thimble-shaped cells, fitting closely into each other, and accurately filling almost the whole length of the tap. These cells are most beautifully constructed of round and oval pieces of leaves, and are about three-quarters of an inch in length, by half an inch in diameter; each cell contains at the present time a cylindrical cocoon, from which will no doubt emerge before long a specimen of the perfect bee. These insects, which belong to the *Mezochile* (the species we cannot determine till their transformations are completed), have long attracted attention from the curious nature of their habits. They usually form their nests in the trunks of decayed trees, old pieces of timber, or in the ground; in the case before us, however, the parent bee has saved herself the trouble of excavating a burrow by taking possession of the hollow maple-taps, and sagaciously appropriating them to her own purposes. Mr. Brown states that several of his taps were thus occupied; they had been left in the holes in the trees all last summer, and on removing them this spring to fresh holes, it was found that they were completely stopped up and apparently useless. The cause of the difficulty was soon ascertained to be the singular nest before us, but how it was so firmly constructed, and so accurately fitted, was a subject of astonishment and admiration.

In olden times such a discovery would have been ascribed, in all probability, to some demoniacal influence, and considered to portend some dire calamity. Kirby and Spence relate an instance of the gardener of a gentleman being thrown into a horrible fright by digging up some of these curious cases, which he conceived to be the effect of witchcraft. "By the advice of his priest"—they go on to narrate—"he even took a journey from Rome to Paris, to shew them to his master; but he, happily having more sense than the man, carried them to an eminent naturalist, who having seen similar productions was aware of the cause, and opening one of the cases, while the gardener stood aghast at his temerity, pointed out the grub that it contained, and thus sent him back with a light heart, relieved from all his apprehensions."

The same authors in their *Introduction to Entomology*, give us an interesting account of the mode in which the leaf-cutting bee performs her work; we cannot do better than describe it. "The mother bee, they state, first excavates a cylindrical hole eight or ten inches long, in a horizontal direction, and this cavity she fills with six or seven cells wholly composed of portions of leaf, of the shape of a thimble, the convex end of one closely fitting into the open end of another. Her first process is to form the exterior coating, which is composed of three or four pieces of longer dimensions than the rest, and of an oval form. The second coating is formed of portions of equal size, narrow at one end, but gradually widening towards the other, where the width equals half the length. One side of these

pieces is the serrated margin of the leaf from which it was taken, which, as the pieces are made to lap one over the other, is kept on the outside, and that which has been cut within. The little animal now forms a third coating of similar materials, the middle of which, as the most skilful workman would do in similar circumstances, she places over the margins of those that form the first tube, thus covering and strengthening the junctures. Repeating the same process, she gives a fourth, and sometimes a fifth coating to her nest, taking care, at the closed end or narrow extremity of the cell, to bend the leaves so as to form a convex termination. Having thus finished a cell, her next business is to fill it to within half a line of the orifice with a compound of honey and pollen; and then having deposited her egg, she closes the orifice with three pieces of leaf so exactly circular, that a pair of compasses could not define the margin with more truth, and coinciding so precisely with the walls of the cell, as to be retained in their situation merely by the nicety of their adaptation. After this covering is fitted in, their remains still a concavity which receives the convex end of the succeeding cell; and in this manner the inefatigable little animal proceeds until she has completed the six or seven cells which compose her cylinder.

The process which one of these bees employs in cutting the pieces of leaf that compose her nest is worthy of attention. Nothing can be more expeditious; she is not longer about it than we should be with a pair of scissors. After hovering for some moments over a rose-bush, as if to reconnoitre the ground, the bee alights upon the leaf which she has selected, usually taking her station upon its edge, so that the margin passes between her legs. With her strong mandibles she cuts without intermission in a curve line so as to detach a circular portion. When this hangs by the last fibre, lest its weight should carry her to the ground, she balances her wings for flight, and the very moment it parts from the leaf, flies off with it in triumph; the detached portion remaining bent between her legs in a direction perpendicular to her body. Thus, without rule or compasses, do these diminutive creatures mete out the materials of their work into portions of an ellipse, into ovals or circles, accurately accommodating the dimensions of the several pieces of each figure to each other. What other architect could carry impressed upon the tablet of his memory, the entire idea of the edifice which he has to erect, and, destitute of square and plumb-line, cut out his materials in their exact dimensions without making a single mistake? Yet this is what our little bee invariably does. So far are human art and reason excelled by the teaching of the Almighty!"

Poultry Yard.

CURCULIO AND CHICKENS.—A. R. S., Hornellsville, N. Y., says that for the last two years he has succeeded in growing plums in large quantities, although his near neighbours failed by reason of the curculio. He thinks his success due to the fact that he kept and raised a great many chickens during this time, which he cooped under the plum trees, and they destroyed the curculio.

A DUCK HOUSE.—Ducks, in the earlier portions of the warm season, are rather cosmopolitan in their character, and not very particular as to the place where they drop their eggs when first commencing to lay. Still, they are not devoid of home instincts, and, if a place is provided for them, they will deposit their eggs in it instead of acting on the broadcast principle. Some furnish them wooden dwellings, some brick or stone—each good in its way, but rather expensive sometimes. A cheap substitute in the wooded portions of the country may be found in a hollow log. The kind of wood is not material, except as to durability. Take a hollow log, with a sufficient capacity of ware, and place it in a suitable position; if beside a brook or pond, so much the better, and cut or saw out openings some two feet apart, the whole length of the log. These should be high enough to prevent the eggs from rolling out of the entrances. The pieces sawed out can be used as doors, by the use of leather hinges. In the day time they can be turned back upon the log, and at night dropped down to secure the ducks from the depredations of night-walking enemies with poultry proclivities. The fowls, once confined in this primitive dwelling, will resort to it thereafter for the purpose of laying, and also of repose. The eggs can be removed daily, if so desired, during the laying season. To make all safe and cosy, the ends of the log should be boarded up or furnished with a drop-door like the openings in the side. In certain places this will prove a cheap and safe duck-house, and answer all the purposes of a more costly edifice.—Rural New Yorker.

The Apiary.

Management of the Apiary for June.

BY J. H. THOMAS.

The honey harvest commences with this month, and as May has been unfavorable, if it does not prove abundant, bees will not do well this season.

In this section we can hardly expect early swarms, unless it be from Italian stocks. Still, everything should be in readiness, old hives well cleaned, and new hives purchased or well made and on hand. Honey-boxes may now be given to all stocks. Pieces of comb may be fastened to the top of honey-box, as bees will enter a box far more readily if there is comb in it. Boxes for marketing should have glass ends; for home consumption a simple wooden box will do. It should not be over five inches deep. As soon as boxes are filled, they should be removed, and other boxes put on, or the honey removed and the same boxes returned. In the latter case a small piece of honey may be left in the box to induce the bees to commence work again. From the middle of June to the middle of July may be said to be the swarming season. All persons intending to use moveable comb hives should put their first swarms in them. Many persons often put a second swarm in a new hive to "try it;" it does not do well, and the hive is condemned. Second swarms frequently do ill in any hive. If two second swarms, or three or four third swarms are put together, they will do well. They may be united any time within a day or two after swarming. Such united stocks often do as well, or even better, than a first swarm. It is far better to have one good stock than two poor ones. If the bee-keeper can double his bees every year in Canada, he should be satisfied. With moveable comb hives, second swarms may be prevented by cutting out the queen cells. More honey may be obtained by keeping all the bees in the parent stock after the first swarm has issued.

It is often urged as an objection to moveable comb hives that it is difficult to get a swarm of bees into them. Such is the case with the Langstroth, Quinby, and many other comb hives, but with my hive the difficulty is entirely overcome by the dropping of the bottom board at the rear of the hive. In fact, it is one of the most convenient arrangements for introducing a swarm that can be invented. Set the hive on the table with the bottom-board dropped, and shake the bees out of your living dish on the table near the opening, and they will all enter in a few moments. For further particulars, see "Canadian Bee-keepers' Guide." With common box hives a similar plan should be adopted. Simply raise one side of the hive about two inches, putting under a stick or chip to hold it up, and turn down the bees as stated above. This is much better than shaking the bees into the hive, and then turning it over or shaking them on the table and turning the hive over them. Either way, bees are sure to be killed. Last season one man killed two queens by the operation. Remove all swarms to their stands soon after hiving, and keep them shaded, especially if in newly-painted hives. All swarms put in moveable comb hives of any description should be examined at the expiration of four or five days after hiving. Any inaccuracies in the combs, or inclination to build crooked, may then be corrected by pushing the comb to its proper place. It being warm and soft, no fear of breaking need be apprehended. If all bee keepers using moveable comb hives will adopt the above simple plan, they need never have any crooked combs in their stocks. It is not, as is too frequently supposed, a difficult task to remove the comb frames. Any person, even a lady, may remove them from my hive without difficulty by using a little smoke. If timid, put on a bee protector and a pair of sheepskin or India rubber gloves.

Often during the hot weather of this month, bees may be seen on the lighting board of a hive in large numbers blowing with their wings, while an unnatural roaring is heard in the hive. When such is the

case, they are too warm, and want more ventilation. Common hives should be raised up. The bottom board of my single-boarded hive may be dropped half an inch. The double-boarded hive being cooler, seldom requires any attention in that respect. When swarms issue and return again to the parent stock, it is well to examine carefully in front of the hive for the queen, as sometimes in attempting to fly she falls on the ground and is unable to rise again, or she may be defective in a wing and cannot fly. In such a case she would soon perish if not returned to the hive. Give your bees all the attention they require, and if the honey harvest is good, they will reward you well for your trouble. If bees in common hives hang out and refuse to swarm, drive them, leaving a few bees in the parent hive, which remove to a new stand, and put the swarm you have driven out on the old stand.

Miller Traps, Comb Guides and Condensers.

To the Editor of THE CANADA FARMER:

SIR,—It is very evident that Mr. Thomas differs widely from myself as to the utility of the above-mentioned contrivances, but which of us is nearest right is a point which I hope those interested will seek to determine by carefully reviewing the articles upon the subject. I accept Mr. T.'s correction of my first quotation from him, and claim his pardon on the score that it was unintentional; at the same I will take the trouble of drawing the logical inference from the correction, that he believes the "fixings" in a hive useful in the hands of those who will attend to them. Mr. T.'s reply to my query "if the millers are so unceremoniously ejected by the bees," &c., is by no means satisfactory.

Since "it is not necessary for the miller," according to the theory advanced by Quinby some ten or twelve years since, "to enter a hive in order to infest a stock with her progeny," Mr. T. triumphantly asks "Of what use would Mr. H.'s miller trap be in such instances?" In his anxiety to ignore its utility, he says "of none whatever." Let us see. Says Quinby: "From the first of June till late in the fall, the moth may be found around our hives, active by night, but still in the day. The only object probably is to find a suitable place to deposit its eggs that the young may have food; if no proper and convenient place is found, why I suppose it will take up with such as it can find. Its eggs must be deposited somewhere, it may be in the cracks in the hive, in the dust at the bottom or outside, as near the entrance as they dare approach. The bees running over them may get one or more of these eggs attached to their feet or bodies, and carry them among the combs, where they may be left to hatch." I infer from this statement that if "a convenient place is found" inside, they will not be left about the entrance. This convenient place" my trap affords; and since the bees cannot get into it, where is the liability of the eggs being carried into the combs in this way? "Facts are stubborn things," but Mr. T. finds no difficulty in dealing with the fact that I found no grubs in the combs of my apiary last summer. He suggests ignorance or blindness, and passes on. How natural the idea of a supervisor arises under such circumstances, but his proposition is respectfully declined. I shall endeavour to give "more study to the nature and habits of the bee and bee moth," and hope to be able to manage my own apiary, and correctly report the success or failure of anything that I have introduced to the public. But Mr. T. has tested the trap. Was it of the same construction as mine? Unless Mr. T. is more careful in his experiments, he will not be a safe guide in the untrodden paths of apian science; for unless he can prove that there were no moths in the hive, either in the egg, grub, chrysalis or perfect state at the time of introducing the trap, his experiment proves nothing. This, of course, he cannot do. In regard to invention of the "wire cloth bottom," I contend that the statement in my former letter is correct. That Mr. Bennett patented a hive with the wire cloth bottom, I am well aware. This hive fell into "disrepute" because of its being built upon the colonizing system, a system at variance with the nature of the bee, and not because of the worthlessness of the bottom as Mr. T. represents. But we have not the whole

history of the wire cloth bottom in this hive. I have learned of four or five styles of hives, in which it is in use at the present time, two or three of which are patented, so that it has not fallen into "disrepute," and of course has not been "revived." Mr. T. thinks my quotation from Quinby does not favour my trap. There is this difference. In the case of the Langstroth and People's hive, the trap is inserted by the maker; in the other by the bee-keeper. He thinks that the "bee-keeper who would take the trouble to save refuse comb, and lay it near the hive, would be the one out of fifty that would attend to it." But the bee-keeper who reads THE CANADA FARMER, and sends for a beehive, paying a dollar extra to get a miller trap attached would neglect it. To me, this looks very unreasonable. Mr. T. brings up an array of quotations against moth-proof hives. I quoted Quinby to support my position. Is then Quinby at variance with himself? No; recommending a Miller trap, and denouncing a moth-proof hive, are two very different things. I do not, and never did claim a moth-proof hive. What I do claim is an efficient miller trap.

In reference to comb guides, Mr. T. should have been satisfied with the quotations I gave from disinterested parties, as I said: "interested testimony pro or con is not to be relied on." Mr. T. instances "a properly constructed hive—adapted to the nature and habits of the bee," and says, that in such a hive "combs will be built straight without the guides." Again Mr. (H.) T. in my hearing at the London fair said that "it is the only hive upon the ground in which combs would be built straight." Are there any "exceptions" made to their building straight in these statements? In my remarks upon the "wedge shaped top piece," I should have written that "it was in use before he conceived the idea of getting up" the Thomas' hive, instead of "a hive." I "abandoned it for two reasons: 1st. I did not know at the time that Mr. T. was claiming that which the law does not allow him. 2nd. Further observations and study led me to believe that a medium sized guide (top piece) was better, as there is room enough upon either side of the slope of Mr. T.'s guide for the bees to attach their combs, thus rendering them more liable to build across. As to the necessity for the "frequent removal" of the comb guides, Mr. T. should know that very little propolis is used by the bees in the swarming season and for some time thereafter, there being, according to Quinby, "a hundred fold more used in August than in June." Mr. T. incorrectly represented me, in stating that I would not "think that person *compos mentis* who would ventilate a bee hive, instead of providing it with a condenser." I have never said a word against the proper ventilation of bee hives, but the contrary; and believe my arrangements for ventilation are not excelled. But I do protest against that ventilation in winter which allows a current of cold air to pass through the cluster of bees, reducing the temperature, and retarding the breeding. The object of ventilating the hive, and condensing the moisture, is to prevent the loss of bees in wintering. I showed how this loss occurred, and requested Mr. T. to "trace the analogy in the case of the occupants of a sleeping apartment." This he failed to do. But he considers my "remarks laughable indeed." "Philosophical indeed!" Nevertheless, I ask, do not the mass of bees in a hive give off exhalations? Is it not then an exhalating mass? But Mr. T. confounds the "mass" with the "exhalations." "Only think of a bee-keeper going around with a spoon to catch the exhaling mass (the stock of bees) as it drops from the hive!" I have just found something from the pen of Quinby bearing upon this matter, to which I beg Mr. T.'s attention.

"In cold weather, bees throw off moisture that lodges on the combs and sides of the hive, and causes mould. The patent vender is at hand with several specifics for getting rid of it." The most effectual that I have seen—Mr. Furlong's—is a hive with cross bars at the top to support the combs, and panes of glass set up like the roof of a house, in which the moisture condenses, and runs down into a trough of tin, which conducts it outside the hive. This hive is much more tolerable than the dividing hive, as this method of disposing of the moisture is preferable to the open holes. Were it not for the fact that the same result can be secured quite as effectually at far less expense, this hive might be desirable." Never having heard of it before, I know not what extra expense the arrangement entails. Quinby secures the "same result" by the use of a mat similar to the one I make, dispensing with the glass or metallic part of the arrangement. His only objection is on the score of expense. Mr. T. considers the "idea of a condenser in a hive, of all others the most unphilosophical and unsound," and condemns them for "creating a dampness," while Quinby considers a "condenser" the most effectual "patent arrangement" that he has seen for getting rid of it."

OSHAWA, 15th May, 1866,

A. N. HENRY.



Canadian Wool and the American Tariff.

To the Editor of the THE CANADA FARMER.

SIR.—Our sheepshearing will soon begin, and as on account of the high tariff of the American Government their buyers will use every means in their power to lower the market for Canadian wool, in which they will be assisted by Canadian woollen manufacturers. It is evident that these two parties acting in concert will have a great chance of obtaining the end they have in view, this end being really to make the Canadian farmer pay the American tariff on his wool instead of ranking the American woollen manufacturer do this.

We must remember that American manufacturers must have our wool and if we only keep it back from market until they require it to keep their mills from being idle, they will then be forced either to import from England at a higher figure, or to stop their mills, unless they pay us a fair price, and so I would urge brother farmers to hold on to their wool until they can get last year's prices. I for my part will do this. I was glad to hear of the foresight of one of our farmers the other day who took a fine lot of wool home again because he was offered so small a price.

It is a very different thing to carry home a lot of wool, compared with carrying home a lot of grain.

Wool after being shorn will waste very little by keeping, provided it is kept in a dark cool room admitting as little light and air as possible; for a very dry hot room causes the wool to lose its vitality and feel harsh and "crimping," and the admission of the sun's rays deadens the bright lustre of the fleece.

I am, &c.,

A WESTMINSTER FARMER.

Cattle Duty and Fat Hogs.

To the Editor of THE CANADA FARMER:

SIR,—Notwithstanding the 20 per cent. ad valorem duty on live hogs into the States, farmers need not despair of finding a good market for fat hogs at Hamilton, summer and winter, as usual, and the earlier fat this summer, the better the price is likely to be. We have frequently taken occasion to call attention to this subject, having a two-fold object in view. We have made Canada our home, and gone to large expense in fitting up suitable premises for curing and packing provisions both for the winter and summer seasons, and the natural return we expect is to make a living by our business. At the same time, we hope farmers will find it profitable to feed hogs in sufficient numbers to keep our establishments fully employed, and we hope to be able now and then to address to them a word in season. Since the repeal of the Reciprocity Treaty, Canada must necessarily become more self-reliant and more self-dependent.

We have, time after time, alluded to the advantage of having a supply of fat hogs in summer, and so the importance of improvement in the breed, and so the weights most desirable for the English market, namely, 200 lbs. or 300 lbs., alive. We have cautioned farmers against allowing their hogs to run on beech nuts or feed on buckwheat, and in this matter we regretted to find our advice was so little heeded, as was shown by the large amount of soft pork exhibited for sale during the latter end of last season.

J. T. DAVIES, Hamilton.
SAML. NASH, Do.

May 21st, 1866.

FOUR LAMBS AT A BIRTH.—"A McVean" writes:—"I seen this afternoon at Mr. Timothy Brushingham's, Lot 38, 1st concession Township of Camden, a ewe with four lambs. Two were born on Sunday morning 22nd inst., and two on Monday morning 23rd inst. They are a good size, and very smart. We think in this neighbourhood the above is hard to beat."

WORK ON BOTANY.—"Julius," of York, makes the following enquiry:—"What is the most approved work on Botany for a person wishing to teach himself? An answer through THE FARMER will be thankfully received."

ANS.—"How Plants Grow," by Prof. Asa Gray, price 75 cents, is the best elementary work that we know of. It may be obtained through any Bookseller.

PORTLAND CEMENT.—"C. C." Nelson, writes:—"Will you please tell me at your earliest convenience where the Portland Cement is to be got, or how it is made. I have tried the druggist and paint shops, and they all say they know nothing about it."

ANS.—We are unable to supply the information desired by our correspondent, but some of our readers probably can.

PROFITABLE CATTLE FEEDING.—We have been favored by Mr. J. Brunskill, of Thornhill, with the following communication. "I have to-day (May 15th) turned out from my feeding stables six ordinary-sized steers, which have been fed up since the middle of November last. Their cost then was \$164; they have been fed with turnips and hay, and occasionally a few shorts, no water. The exact cost of feeding each I cannot give, as I did not attempt weighing with a view to exactness. I have realized by their sale \$600, or \$436 in advance of cost. I think that such results as these ought to be sufficient to induce our farmers to give more of their attention to cattle feeding."

TANNING SKIN.—"A subscriber," of Sarnia, writes as follows:—"In your last issue, 'A Constant Subscriber asks for a simple and effectual mode of tanning sheep or lamb skins with the wool on. The following, I think, might suit him. For mats, take two long-wooled skins, make a strong suds, using hot water; when it is cold, wash the skins in it, carefully squeezing them between the hands to get the dirt out of the wool; then wash the soap out with clean cold water. Now dissolve alum and salt, of each half a pound, with a little hot water, which put into a tub of cold water sufficient to cover the skins, and let them soak in it all night, or twelve hours; hang over a pole to drain. When they are well drained, spread or stretch carefully on a board to dry. They need not be tacked, if you will draw them out several times with the hand while drying. While yet a little damp, have an ounce of saltpetre and alum, each, pulverized, and sprinkle on the flesh side of each skin, rubbing in well; then lay the flesh sides together, and hang in the shade for two or three days, turning the under skin uppermost every day until perfectly dry. Then scrape the flesh side with a blunt knife, to remove any remaining scraps of flesh, trim off projecting points, and rub the flesh side with pumice or rotten stone, and with the hands. They will be very white and nice, suitable for a foot-mat; they are also good in a sleigh or waggon on a cold day."

The Canada Farmer.

TORONTO, UPPER CANADA, JUNE 1 1866

The Provincial Exhibition.

In the report of the proceedings of the recent meeting of the Board of Agriculture which appeared in our issue of May 1st, it is briefly stated that "the rules and regulations were considered and revised, several changes being made." Although the official prize-list has not yet been published, it may be well, briefly, to state some of the principal differences which will distinguish the coming Exhibition at Toronto from that held at London last year. In the first place, the Show will take place on the 24th September and following days—or about a week later than last year. All departments of the exhibition are thrown open to all competitors, no matter whether they hail from the States or any where else. The Prince of Wales' prize will be awarded to the best agricultural stallion. Some classes of sheep—among them the Cheviots—have been entirely thrown out, while several of the fine wool breeds have been grouped together—such as the Spanish, the French, and the Saxon Merinos. All sheep must have been shorn on or about the first of April. A special committee will be appointed to investigate this matter, before the judging commences. For the encouragement of flax culture, the Board offers additional prizes of \$20, \$15, and \$13 for the best three bushels of Riga flax seed grown from the seed lately imported, and distributed through the country by the government. Three prizes of \$30, \$20, and \$10 are offered for the three best factory made cheeses. We trust that this step will tend to develop more fully

this highly remunerative branch of our Canadian industry—dairy farming. The above comprise the principal changes effected in the agricultural department of the Fair. When the official prize-list reaches us, we may probably revert to the subject again, and, at the same time record any changes which have been determined on in the industrial and arts departments.

The Season.

In some respects the present has been a remarkable spring. Winter held away until quite late, when a sudden term of unusually warm weather melted the snow, loosened the frost, and set the ground free for the course of the plough. Generally, our "break up" is accompanied by copious rains, but the present season has been almost uniformly dry. Until the evening of May 8th, we had scarcely a shower, and then only a very gentle and moderate one. The weather has been uncommonly propitious for getting on with spring work. There has been no lost time by reason of stormy unfavourable days, and farmers generally have got their seed in early, which is, so far, an auspicious omen of a good harvest. Crops often suffer from being put in too late. This will hardly happen the present season, unless in cases where there is downright sloth.

Owing to the lack of snow during the early part of winter, and the prevalence of severe frost, the fall wheat comes out in a sadly scathed condition in most open localities. In some of our best winter wheat sections, such as the townships of Dumfries, Burford and Brant, and the counties of Waterloo and Wellington, regions which we name from acquaintance with them, the winter wheat is so patchy and thin that we hear of some farmers who have ploughed up their fields of it for spring seeding. The present high price of wheat will, however, be a source of consolation both to those who leave meagre-looking fields to do their best and those who sow again. In the newer and less-exposed sections of the country we are glad to learn that fall wheat never looked better.

During the past few days the weather has undergone a favourable change. We have had a most abundant rain, accompanied by a moderate degree of heat. Under these favourable conditions, vegetation has grown apace, and, at present, we see no grounds for prognosticating other than satisfactory results the coming season. In the meantime, our part is energetically to use the ways and means at our disposal, and then in cheerful trust commit the uncertainties of the season to the care of that superintending providence which cares for the young lions, the ravens, and the sparrows, and will not overlook the wants of his nobler creature—man.

The War of Bee-Hives.

OUR bee-keeping readers cannot fail to have been interested in the discussion which has been going on in our columns between the rival hive-makers, Messrs. Thomas and Henry, respecting the utility of certain appendages to the so-called "People's Hive." With ourselves, they doubtless begin to think the controversy has been sufficiently prolonged to bring out the salient points of the argument on both sides. We imagine the disputants themselves must also incline to this view of the case. One of them indeed, Mr. Henry, in a private note accompanying the letter which appears in the present issue, observes, "I think probably the discussion has gone as far as will be profitable." He adds, "however, I suppose I may expect my replies to be inserted as long as Mr. Thomas sees fit to write." This is equivalent to the expression of a wish to have the last word. Who shall have that is usually a knotty point in winding up a controversy. We do not want to stifle discussion on a subject of so great practical interest but deem it right to say that although Mr. Thomas contributes regularly to our apian department we are

under no obligation to print rejoinders "as long as he may see fit to write," so that Mr. Henry need not fear an interminable conflict. We must judge whether any future communications contain useful facts and arguments, and unless there be some new point of importance raised, or fresh information to be given we feel disposed to let the combatants rest in their respective corners of the controversial ring, for the present, lest the subject of bee-keeping should grow wearisome. We do not propose to act as umpire in this discussion, but rather to commit that function to the large, and we are glad to know, increasing circle of bee-keepers, who are accustomed to peruse THE CANADA FARMER. We have an opinion about the rival hives, but having only tried one of them, prefer to reserve the expression of it until we have tried the other. It is, however, only right to say that our experience with the Thomas' hive has been such that we can with the utmost confidence recommend it as a thoroughly good one. We put a late swarm into a Thomas' hive, last summer, which filled the lower part of the hive with comb and honey, and a surplus box of 20 lbs. weight, which was removed and appropriated to family use. The bees wintered exceedingly well. On setting the hive out this spring there was no trace of the moth, everything was in excellent trim, and the remaining stock of honey so abundant that we were enabled to divide with the bees. We find that there is ease of examination, perfect control, good ventilation, straightness of comb, and convenient management generally, secured by this hive, and are therefore constrained to speak well of it. It is a matter of congratulation that bee-keeping is being so extensively engaged in all over the country, that there is room for some competition in the manufacture of hives. It has been and shall still be our policy to encourage all who are displaying enterprise in this and other branches of rural economy, to endeavour to excite public interest in every department of domestic industry, and so far as we can consistently do so, to help those who are endeavouring to improve and multiply the facilities for carrying on farming pursuits with efficiency and profit. Rivalries and competitions will arise, but ultimately the public judgment and the public purse must decide the fate of the various inventions and improvements that are brought into being.

Toronto Horticultural Exhibition.

THE Spring Show of the city of Toronto Electoral Division Society was held in the Music Hall on the 22nd ult. The morning was cold and unpromising, and a raw, blustering wind recalled recollections of March and overcoats. The success of the exhibition was unquestionably marred by these unfavourable atmospheric conditions. Choice stove plants, and exotics generally, cannot be exposed with impunity to such chilling influences. The inevitable consequence was that many beautiful plants remained in the conservatories of their respective proprietors, which, under more favourable circumstances, would have been exhibited in the Music Hall. Several of the orchids shown bore sad traces of the rough usages of angry Boreas. The hardier greenhouse plants, however, such as fuschias and geraniums, looked remarkably well.

The Music Hall is generally well adapted to the purposes of a Horticultural Exhibition. There is ample wall space for the disposal of side tables, while the spacious centre of the room affords every facility for a large pyramidal display. At the same time artistically considered, the colouring of the decorative features of the Hall is unfavourable to the floral beauties of the exhibition. To be seen to advantage, flowers require a subdued and quiet-toned background. As compared with the Spring Show of the Society last year, the exhibition of yesterday was, in some respects, much superior. In geraniums for example we have seldom seen more carefully cultivated plants. The fuschias, too, formed a fine feature, although some of the specimens were not so perfect in shape as we could have desired. Calceolarias, of which there were about thirty specimens in the hall, were particularly good. We have seen larger and more graceful plants in this class, but seldom more perfect blooms. This splendid flower deserves more extended cultivation. Cut flowers were moderately represented, although the specimens shown were tastefully arranged.

Among the stove plants we observed the *Cissus Discolor* from the conservatory of the Hon. D. L. Macpherson, Chesnut Park. As most of our readers will remember a fine illustration of this specimen appeared in THE CANADA FARMER of Dec. 1st, 1865. A small assortment of really well preserved apples and pears was shown. Owing to the peculiarly ungenial weather that has prevailed during the present spring, the vegetable department was necessarily very moderately represented. The exhibition was opened to the public at two o'clock, p. m. Up to seven o'clock the attendance was very poor, but after that hour and up to closing time, ten o'clock, the hall was well filled. The Society deserves more patronage and support than it receives, and we trust its future exhibitions will be more widely appreciated by our citizens. As a move in the right direction we are glad to learn that through the representation of Major Denison, the Board of Agriculture have placed their fine Horticultural library at the services of the members of the Electoral Division Society.

Hamilton Ram and Sheep-shearing Exhibition.

THIS exhibition of rams and shearing competition took place in the grounds of the Crystal Palace, Hamilton, on the Queen's Birthday. The Clipping was evidently regarded as one of the most prominent of the many entertainments provided for the Hamiltonian holiday-makers, that day. Each man as he carefully divested his animal of the fleece, was surrounded by an ever-changing circle of critics and admirers. Prizes amounting to about \$140 in all, were offered to the best rams of the various breeds, and to the shearers who completed their work in the most workmanlike manner. The number of rams on the ground was very limited. Only about thirty appeared, and those by no means represented the choicer animals of their various breeds in the Province. The Leicesters were very creditable specimens, such as we would not hesitate to use as sires in a flock; while their fleeces were particularly fine, measuring in some instances quite twelve inches.

The officiating judges were Mr. Balkwill, London; Mr. Blanchard, Nelson; and Mr. Minhinnick, Wellington Square. Their awards were as follows:—

CLASS 1.—Best ram of any age or breed, \$12, W. Cleland; 2nd do. \$6, T. Grant; 3rd do., \$3, J. T. Nottle.

CLASS 2.—Best aged Leicester ram, \$8, W. Cleland; 2nd do., \$4, P. Grant; 3rd do., \$2, J. T. Nottle.

Best yearling, \$4, Mr. Oric; 2nd do., \$2, Mr. Hendry.

CLASS 3.—Best aged Cotswold ram, \$8, J. T. Nottle; 2nd do., John Long.

CLASS 4.—Best aged Southdown ram, \$8, J. Heslop. PRIZES FOR SHEARING. Best shearer, \$10, N. Ford; 2nd best, \$6, R. Rowing; 3rd best, \$2, Thomas Cowell; 4th best, \$1, J. Blint.

PRIZES FOR FLEECES.—Best fleece, according to value, \$5, J. T. Nottle; the shearer who made the neatest fleece, \$1, S. Day. The prizes in the Merino class were divided among Messrs. Hind, Young, Ry-mall, and Long.

Generally speaking, the shearing was creditably performed, and the fleece was quickly and neatly removed from the animal without incisions of the skin. In a few instances the reverse was the case, and we saw an unfortunate, yolk, wrinkly merino pretty much gashed. We regard sheep-shearing competitions very favourably, and would like to see them more general. They are of common occurrence among our neighbours across the lines, and we trust in the course of a few years that public trials of "clipping" skill, will become a Canadian institution.

The Hamilton Horticultural Show.

THIS fine display of vegetables, fruits and flowers was held in the Drill Shed on the anniversary of Her Majesty's birthday, and reflected alike credit on managers and exhibitors. In vegetables, quite a fine assortment was shown. No less than seventeen dishes of fine large new potatoes were entered, while onions, spinach, asparagus, and sea-kale were superb. Perhaps one of the most remarkable features of the vegetable department was a fine specimen of the new

edible-pod radish, *Raphanus Caulatus*. This peculiar specimen of the vegetable world was sent from Edinburgh by R. M. Stark, Esq., to Mr. W. Sanderson, of Hamilton. The plant in question is about three feet in height, and the pods, or eatable portions, grow out from the stalk like long distorted beans. Some of the pods, of which eight were fully formed and seventeen in course of development, were quite thirty-two inches in length.

In the fruit department, a fine assortment of apples, pears, and hot-house grapes was exhibited. The floral department was particularly fine—the principal exhibitors being John Young, Esq., Undermount; and John Brown, Esq., Highfield. Among a large display of floral beauties—the majority of which deserved more than a passing notice—the following specimens were particularly remarkable:—*Brugmansia Alba*; *Cytisus racemosus*; a splendidly flowered *Azalia Chelsoii*; and a magnificent specimen of the *Croton Tricolor*. The last named shrub furnishes the chemist with the powerful purgative known as Croton oil. It is a native, we believe, of the East Indies, and the specimen in question was fully eight feet in height. Geraniums were shown in great variety and in fine quality and shape. In fact every class of window, stove, and green-house plants was well represented. The internal arrangements reflected great credit on the managers—and the show, as we have already intimated, was a great success. The band of the 16th Regiment discoursed operatic music in the evening to a large and fashionable attendance; and the indefatigable president, Mr. Murray, and the zealous secretary, Mr. Robb, must have experienced a reward for their services in the general appreciation of their exertions.

The International Horticultural Exhibition.

OUR recent British files contain particulars of the monster tent which is now in course of erection at South Kensington, London, England, for the forthcoming International Exhibition. The surface of the ground to be occupied lies some five or six feet below the level of the surrounding roads. This circumstance has been taken advantage of to obtain a coup d'œil of the general effect, and it also places the tent in a naturally secure and sheltered position. "Entering the ground from the Cromwell Road," says the *Gardener's Chronicle*, "on a level, the visitor will presently find himself on a kind of promontory, where, during the continuance of the Show, he may feast his eyes on the blaze of beauty spread out before him—not all to be seen at once, however, for Mr. Gibson, of Battersea Park, to whom the arrangements have been confided, has cunningly contrived that the view at certain points shall be cut off, mere distant glimpses being here and there obtained of charms almost hidden, but enough to lead him onwards to examine the whole in all its details."

In the absence of plans and sections, the general arrangements are somewhat difficult to comprehend. The following particulars will however be interesting to our Canadian florists. The surface of the ground is altogether irregular; the sloping banks are cut out in terraces, to be clothed with turf, on which the plants will stand; the higher portions of each bank will be occupied by a background of some kind of evergreen; and here and there, in front of the more gaudy coloured plants, relief from the blaze of colour will be afforded by a green turf foreground.

The area to be covered by canvas, which is now in course of being put up, is 3a. 2r. 3sp. Of this large space, 2a. 3r. 29p., or 125,000 superficial feet, are appropriated for the plants and visitors, exclusive of the Orchid tent, which contains about 10,000 feet, and is to be covered with glass and oiled canvas, and to be warmed by Mr. Ormson, of Chelsea, to a minimum temperature of 50°, in order to secure the safety of the valuable plants that will be consigned to it. Of the above 125,000 feet, the walks occupy about 60,000 feet, and thus, allowing 4 square feet for each person, they will accommodate 15,000 persons under the tent without crowding. Mr. Gibson calculates that in the larger and more ornamentally disposed portion of the tent there will be a space of 55,000 feet available for the distribution of plants, and that this will accommodate at least 6000—the Orchids, fruits, and vegetables being elsewhere provided for, and that 20,000 feet will remain to be devoted to decorative effect, and for the disposal of single specimens.

Royal English Society's Cattle Show.

In looking over the Report of the Exhibition of live stock at the Plymouth meeting of the Royal English Society, by the Senior Steward, John D. Dent, Esq., M. P., which appears in the last part of the Society's Journal, a few extracts, it seems to us, will be interesting to our readers, and may be suggestive to the Directors of our Provincial and local agricultural societies.

Under the Devon class, Mr. Dent observes:—"There can be no question that the show of Devons was the feature of this year's Exhibition. The gay, lively-headed bulls, so full of grace, so active in their movements, and full of wild spirit, which more than once led to an upset of balls, herdsmen and spectators,—the cows, heifers, and calves so full of quality, so perfect in their backs and ribs, so thin in their head, so short of osial, and altogether so aristocratic in their mould, made the Devon ring a constant source of attraction. I could find no fault but one, and that was want of size; and this is a deficiency, which in those days of dear meat is not easily condoned on the plea of superior quality or purity of breed. The beef no doubt, is excellent; but there is not enough of it."

"Before closing my remarks on the cattle classes, I must again enter my protest against the mistake made by our breeders of fashionable stock, in so entirely neglecting the milking properties of their cattle. Amongst the Shorthorn, Hereford, and Devon classes, we had perfect models of female symmetry in every point but one,—that which provides sustenance for the offspring. The feminine character is lost, and we are year by year showing mere cylinders of beef. What a contrast were the two graceful well-formed udders of the Jersey and Guernsey cows to the malformations which disgraced some of the prize cattle in the fashionable classes.

"The Channel Islanders obtain early maturity for their purpose; the beautiful prize heifer, but 2 years and 5 months old, had borne a calf, and her udder was as gracefully and truly formed as any nature ever made. In the fashionable breeds we are losing fast the most beautiful characteristic of the sex, and, as I believe, from nothing but over-feeding and carelessness on the part of the breeder. Our shows would gain in interest if the bulls could step out easily and magistically; and if our cows and heifers were indeed the milky mothers of the herd. But now, amongst the aged bulls, to walk as far as the ring is a matter of serious difficulty, and to parade once or twice round it, a painful task, for they resemble some gouty specimens of the human race, whose tempers and figures are alike destroyed by over-feeding, and the sufferings consequent thereupon. But serious as are these difficulties, it would be a yet harder task to get a pail of milk from a whole class of cows."

The Channel Island breeds, usually denominated, Alderney, Jersey and Guernsey, have been astonishingly improved of late years, not only in milking qualities, for which they have always stood pre-eminent, but more particularly in size, symmetry, and aptitude to fatten; qualities which their breeds formerly possessed in a very inferior degree. It is said that the Americans now buy freely of these cattle, and that prices are steadily rising. It might be worth while to give them a trial in Canada.

In reference to the Home Department, Mr. Dent remarks:—"I may here call the attention of the Council to the question of disqualification. Ought we not in justice to our judges and to the public, whom we profess to protect by our veterinary examination, to post up the disqualification and the cause of it over the horse disqualified? No doubt the severity of our veterinary examination keeps many horses from the show-yard, and renders the show less attractive than it would be, were we not so strict; but, on the other hand, we profess to protect the public against hereditary disease, and, I believe, that though our show-yard may not have as many horses as some others, yet that we have steadily lessened the number of diseased horses exhibited. To

label a stallion as a roarer, or afflicted with hereditary disease, must of course seriously depreciate his money value, and so far inflict pecuniary loss upon his owner, which is not the case in a disqualification of pigs shown over age, or sheep improperly shown, where the money value of the animal remains unaltered, although the character of the owner may suffer. The question is a difficult one, and, although perhaps it would have been right to post up the disqualifications, yet I did not like to do it without the express sanction of the Council, and I believe it is a matter to which their attention should be directed. There is no doubt that the veterinary examination is a great obstacle with exhibitors; I am sure it is carried out carefully and prudently by Professor Varnell, and I should be sorry to see it discontinued, because I think it is the duty of the society to discourage unsound animals, rather than to bring together a great show of horses. At present the horse-show is the least successful part of our undertaking; the expense of railway travelling, and the length of time during which valuable horses are detained, and above all, the fear of the veterinary examination, rendering owners of thorough bred stallions or of first-class hunters unwilling to exhibit."

According to the Report of the Veterinary Examiner, out of 93 horses, 3 only were afflicted in the wind, and no disease of an hereditary nature was observed in the eyes of any animal exhibited; but disease of the hocks was more prevalent, including what is termed bone and bog spavins, and curbs; amounting to the large proportion of 72 per cent. Shelly, flat, and brittle hoofs were by no means numerous; only four instances were observed.

The managers of the Royal seem to have as much difficulty as we have on this side of the Atlantic, with regard to dishonest practices in the shearing of show sheep. The inherent difficulties of the case, however, should increase rather than relax the efforts of Directors to keep down such glaring improprieties. The Report says:—

"The Stewards suggest that the date of clipping sheep should be altered to 'after the first of May,' rather than the first of April. The growth of wool on highly kept sheep in three months is so great, that there is much difficulty in arriving at a conclusion whether sheep have been fairly shown. At present the duties of the inspectors of shearing are attended with much difficulty, and though the glaring cases which attracted attention at Worcester have been checked, still we feel that we have not yet arrived at a satisfactory position. I have good reason to believe that very nearly all sheep in one class had a good share of wool taken off their flanks and other points, one evening after the inspectors had seen them and proposed to pay them another visit. Indeed the marks of the shears and the different shade of wool were very visible even to an unpractised eye."

We may just observe that, in consequence of the Rinderpest, the three National Societies of the United Kingdom will forego their annual Exhibitions this present year.

Agricultural Intelligence.

New York State Sheep Fair.

THE Annual Fair of the New York Sheep-Breeder, and Wool Growers' Association took place at Rochester on the 8th, 9th and 10th ult. We find a racy article in reference to it in the *Country Gentleman* which we are sure will be read with interest by all our readers who have to do with sheep affairs, and which we insert in full.

The Fair of the New York Sheep-Breeders' and Wool Growers' Association, held at Rochester last week, called out great numbers of "American Merinos," both from this State and New England. It was probably the largest and best display of these sheep ever made.

The first thing that we heard on entering the grounds was three or four prominent gentlemen discussing the merits, not of sheep, but of agricultural papers. The *Country Gentleman*, said one, "would be the best paper in the country if it did not hate sheep!" This was very funny. Your reporter did not know how to act. You had sent him to make a full and impartial report of the Fair, and he supposed you felt a deep interest in everything pertaining to sheep-breeding and wool-growing. Is he mistaken? Have you changed so much? Have you, after lending your influence for the last thirty-five years to encourage the production of wool and mutton, suddenly fallen from grace and imbibed a hatred for sheep? If this is so, it is much to be regretted that your engagements were such that you could not personally attend this exhibition. You would have seen nothing

in these quiet, placid looking sheep that could cause you to hate them. Why, sir, there are sheep on the ground worth \$10,000. How can you hate such valuable animals? I say worth it—and they are worth it. This can easily be shown. Here is a buck that sheared 26 lbs. 9½ oz. of wool, and he is by no means the best sheep on the grounds, as he did not get the prize. Now, sir, your reporter keeps a flock of Merino sheep that averaged last year only 6 lbs. of wool. Suppose, by purchasing such a ram, he could bring up the average to 15 lbs., how much would such a ram be worth to him? His present flock probably costs him the increase and three pounds of wool to pay expenses, leaving only two pounds of wool as profit. But if it was fifteen pounds, and the expenses were the same as before, the profits would be twelve pounds of wool, or just six times as great as at present. I can keep 600 sheep on my farm, and the profits, as we have estimated, would be one thousand pounds of wool in the one case and six thousand pounds in the other; or reckoning wool at fifty cents a pound, the profits with my present flocks would be \$500, and with the "Improved American Merinos," it would be \$3,000. But this is not all. I could raise lambs of my own that would be worth thousands and tens of thousands of dollars, and I should soon be a rich man. Hadn't I better mortgage my farm and buy a ram?

Full of this idea I go to a moneyed man who happens to be a woollen manufacturer, and asks him to loan me \$10,000 on real estate security, telling him I want it at once to buy a sheep, and that I must be in a hurry before they are all sold! These capitalists are a provoking class of men. Instead of letting me have the money at once, and thus enabling me to make my fortune, he commenced a tirade against the sheep. Of course it is not true. But I will tell you what he said:

"These sheep will ruin the wool growing interest of this country. You say you saw one of the fleeces that weighed 26 lbs. 9½ oz. Now how much wool do you suppose there is in that fleece?"

"It was very clean, I said." The sheep has been housed all winter, and blanketed in summer, so that there can be little dirt in the wool."

"Perhaps not much dirt, but lots of grease."

"Oh yes, I have heard of 'Cornwall finish,' and I presume there have been cases where sheep have been smeared with grease to make the wool weigh heavier, but I am satisfied that Mr. Blank is an honest man."

"Well, perhaps so, but he has got the grease there nevertheless. He may not have smeared the sheep, but I will tell you what he has done. He has bred his sheep in such a way that they secrete large quantities of yolk or grease in the wool. He is careful not to let even the dew get on them, lest it should wash out a little of it. It is all in the wool, and I will guarantee that the fleece which you saw weigh 26 lbs. does not contain over 6 lbs. of pure wool! You go and ask him how much scoured wool his sheep shear."

I did not see Mr. Blank, but meeting a well-known Vermont breeder, he said one of his rams last year 'sheared 23½ lbs.' He was careful not to say 'of wool.' He sheared 23½ lbs., but 'how much pure wool did he shear?' 'That sir,' he replied, 'is a question we never answer.' A friend, however, told me that that very fleece was scoured, and cleansed only 3½ lbs. In other words the fleece contained 3½ lbs. of wool, and 20 lbs. of worthless matter. After talking the matter over with my friend, I concluded not to mortgage my farm. He says that this 20 lbs. of grease is not only worthless, but that it costs a good deal to produce it, and that he would rather have the grease on the kidneys.

Is this true? Have these breeders of improved "American" Merinos devoted their time, intelligence and skill to obtain a class of sheep that secrete fat among the wool rather than in the carcass. If so, it is easy to see that this grease must be derived from the food, and that it is really a very costly article, while it is worth absolutely nothing. Is this the "improvement?" They say the wool is not remarkably fine—not fine enough for making the best cassimeres, and that we have to import several million dollars worth every year.

I took but little interest in examining the American Merinos after this conversation. There were some magnificent looking sheep among them. I made full notes for the Co. GEN., but think it hardly worth while transcribing them. A gentleman, who is fully informed in such matters, and who has acted upon several previous committees, had the politeness to go around with your reporter, and he says that there is a marked change in the character of the sheep. There are fewer wrinkles, less hair, and not so much grease. The fleece is more uniform. He says this has been brought about to some extent by the discussions of the subject in the agricultural papers, and by the action of the judges in rejecting the big, greasy, wrinkled sheep, and awarding the prizes to those with better carcasses, and finer, drier, and more uniform fleeces.

I enclose a list of the entries, and a list of the prizes and also the result of the shearing. As now published the latter possesses little interest. The reports of the committees will probably give us more details. Mr Clapp's "American Merino" ewe, that took the first prize at the Canandaigua trial last year for the greatest quantity of scoured wool in proportion to live weight, was again sheared, and gave 10 lbs. 3 ozs. of wool. Her weight after removal of the fleece was 37 lbs. Last year, when two years old, she weighed 49 lbs., and sheared 9.85 lbs. of wool. Last year Mr Gazley's Cotswold, weighing 99½ lbs., sheared 8.9 lbs of wool. This year he sheared one weighing 100 lbs. that gave 10½ lbs. of wool. He also sheared a Cotswold ram that weighed 125 lbs., and gave 11 lbs. 10 ozs. of wool.

Last year, at the Canandaigua trial, the 11 Merino sheep sheared gave 176½ lbs. of wool, and after cleansing 64 lbs., or 36 per cent. of scoured wool. The Cotswold fleece, on the other hand, contained 82 per cent. of scoured wool. In other words 100 lbs of Cotswold fleece contains as much pure wool as 227 lbs. of "American" Merino wool—and that from sheep selected for the trial.

The Silesian sheep exhibited by Wm. Chamberlain, Esq., were not sheared. This we regret. They are admirable sheep, and give promise of being the most useful breed of Merinos in the country—wool of finer quality than the American Merinos, with less grease, and consequently better carcass.

There was a fair show of Cotswold, Leicester and South-Down sheep, but with the exception of the former, none of the leading breeders were represented. The "American" Merinos overshadowed all others, and your reporter left the grounds with one thought fully impressed on his mind. It was this: Had the great intelligence, care, thought, labor, skill, patience and perseverance embodied in these sheep, been devoted to the development of really valuable qualities; had the interests of manufacturers been consulted as well as the interests of sheep-breeders and wool growers; had the vital energies of these really splendid sheep, with their magnificent constitutions, been economized and directed exclusively to the production of valuable products; had fine wool, good carcass, and early maturity been the object of men who have demonstrated their ability to mould animal functions in accordance with their will; had the leading breeders of American Merinos been strictly honest and bred sheep for a worthy object, they would have been entitled to, and would have received the lasting gratitude of their fellow men.

Is it yet too late to turn these sheep to a useful purpose? A sheep that has the power of secreting 20 lbs. of yolk or grease in a year, must have immense capacity of appropriating food. Cannot this capacity be turned to a good account? Cannot it be turned to the production of wool, mutton, and tallow? Let the breeders of American Merinos take these suggestions in good part. They are worth their consideration. If they continue in their present course, they will ruin the whole wool-growing interests of the country. Let them be warned in time. Honesty is the best policy. Let us furnish an article that manufacturers want, and there will be competition enough to secure us fair prices. Your reporter is a wool grower, and keeps none but American Merinos, and he believes that half the labor that has been expended in developing this grease secreting faculty, will make them all that can be desired.

The New York State Fair is to be held at Saratoga Springs. It is to commence on the 11th of September, on the grounds of the Saratoga County Agricultural Society, eight acres being temporarily added for the occasion. This will give the Society thirty acres of ground in all.

The *Ost Deusche Post* of Vienna states that a large number of sparrows are about to be sent from that city to the Acclimatization Society of Melbourne, in Australia for propagation in the colony, to destroy the caterpillars, which commit great ravages in that country.

RINDERPEST IN THE CANARY ISLANDS.—From a letter in a British exchange dated Madrid, April 23, we make the following extract:—

"The rinderpest turns up again in an out-of-the-way corner of the earth, where its ravages might have been least expected. Some speculators recently dispatched a cargo of camels to the Canary Isles. They were landed at Fuentaventura and Lanzarote, and within a week every animal in the island was stricken with the rinderpest. Sheep, cows, and oxen, died by scores daily, and all the other camels in the islands caught the disease. The 'ships of the desert' were exported from Africa. We must therefore, be prepared to hear of the ravages of the malady in the Moorish settlements."

CHEESE MISSION TO ENGLAND.—We learn that Mr. X. A. Willard, of Little Falls, N. Y. sailed on the 12th ult., on his mission to Great Britain and the Continent, for the purpose of gathering all the information that can be obtained in relation to making as well as marketing cheese and butter, designed for foreign markets,—to be diffused on his return among all engaged in dairy-husbandry.

THE WHEAT TRADE OF THE WORLD.—A recent French calculation presents the average price of wheat per quintal at various points and in various countries as follows.—France 21f. 47c. in Belgium, 22f. 91c., at Stettin 24f. 65., at Cologne 21f., at Hamburg 25f. 40c., at Mayence 22f., at Rotterdam 21f., at Bale 23f. 25c., at Zurich 24f., at Vienna 17f. 90c., at Turin 21f. 25c., at Genoa 25f. 35c., at London 25f. 35c., at Liverpool 26f. 35c., at St. Petersburg 22f. 80c., at Odessa 19f. 15c., at New York 21f. 20c., at Alexandria 18f. 41c., and at Santander 19f. 50c. The highest price would thus appear to have prevailed at Liverpool, and the lowest at Vienna.

WHEAT IN MICHIGAN.—The *Western Rural*, Detroit, May 12th. gives the following account of wheat prospects in its state:

From our correspondence and exchanges, we learn that in Allegan, Barry, Berrien, Cass, Clinton, Eaton, Genesee—except in the vicinity of Flint,—Kent, Lapeer, Livingston, Macomb, Midland, Montcalm, Newaygo, Oakland, Ottawa, St. Clair, Shiawassee, Tuscola, and Van Buren counties, there is a good prospect for at least an average crop. From Branch, Calhoun, Ingham, Jackson, Kalamazoo, Lenawee, Monroe, St. Joseph, Wayne and Washtenaw counties, more unfavourable reports are received, but even in most of these the indications are reported as more favourable than they were a few weeks before.

British Cleanings.

IRISH EMIGRATION.—The *Mayo Constitution*, in noticing the rapid emigration of the peasantry from that part of Ireland, observes:

"This season it is rather remarkable that whole families leave for America, contrary to former experience, as in years past it was only the young men and women who emigrated, but now the decade is amongst the old and young, in family circles. It may be urged that the population is still over numerous. This we deny, as the larger portion of the lands in Mayo are only wanting the hands of man to be made to yield a return."

THE ISLINGTON HORSE SHOW.—A Correspondent of *The Field* says. "The man in 'Authority' has let the cat out of the bag in his reply to my letter respecting this show, and, in his anger at being drawn out, has shown a remarkable degree of candour. He confesses that it has no pretensions to a horse show, but was simply devised to make money and amuse the Cockneys, without any view to the benefit of breeders or the improvement of our breed of horses! Nothing can be more explicit than this. After such an admission I have only to suggest to him that, as he has discarded the horse show and is drifting down into the hippodrome, he should enter the ring, with a couple of clever clowns and a long whip, and himself conduct the horsemanship! Or perhaps he may consider it more dignified to continue the donkey show for the benefit of the directors, as he cannot expect noblemen and gentlemen either to act as judges or send their hunters in future for the amusement of the Cockneys."

THE CATTLE PLAGUE: THE RECOVERY RATE.—We clip the following interesting particulars from the *Mark Lane Express*.—"The general proportion of recoveries among animals attacked with the rinderpest continues to rise. Thus, for the week ending March 3, the general recovery rate amounted to 13.949 per cent. In the week ending Nov. 4 it was 5.235 per cent., in the week ending Dec. 2, 7.325 per cent.; in the week ending Jan. 6, 10.076 per cent.; and in the week ending Feb. 3, 12.146 per cent. The improvement in the recovery rate, comparing March, 3 with Feb. 3, 12.146 per cent. The improvement in the recovery rate, comparing March 3 with Feb. 3, was 1.03 per cent., 2.070 per cent., in January, 2.751 per cent. in December, and 2.090 per cent. in November. The experience acquired during the last four months would seem to show a progressive advance in the recovery rate of about 2 per cent. per month. At this rate, supposing the disease continued another year, the recoveries in March, 1867, would be about 38 per cent.; and the fact seems conclusively established either that the disease is not so virulent in its effects, or that it is treated with more success. Nevertheless, the idea seems to have taken hold of the public mind that it is hopeless to attempt to cure

the disease, although 26,610 recoveries had been noted to March 3. Further, the recovery rate, when stated for the week ending March 3 at 13.949 per cent., refers to the whole period from the commencement of the disease to that date. The general recovery rate is depressed by the low point at which it stood for many of the early weeks; but the actual proportion of recoveries to attacks for the week ending March 3 was 24.946 per cent.; in other words, one beast in every four attacked now recovers. Scarcely a single animal now attacked by the disease is now wholly lost to consumption—it either recovers or is killed in the early stage of the disease, when its meat is worth something. These are facts of importance."

ROYAL ENGLISH SOCIETY'S JOURNAL.—On the contents of the recent issue of this publication the *Mark Lane Express* remarks editorially:—"A new number of the *Journal* of the Royal Agricultural Society has been put into circulation during the past week. It contains a variety of tolerable articles, more or less readable, but scarcely a paper of any mark. The way in which the Part is fitted to the times may be estimated by the fact that education is clearly considered the uppermost question at present in the minds of English agriculturists. The three opening essays are devoted to this subject, as there are other contributions touching on the same topic to be found further on; while such a matter as the cattle-plague has a place just at the fig end number, where Professor Simonds' Hanover-Square lecture is reprinted from our columns, but not that delivered by Lord Cathcart though it is difficult to believe that one was not as worthy of insertion as the other. Mr. Howard Reed also furnishes a summary, or, as he terms it, "a sort of interim report, prepared at a short notice." Mr. Reed considering that "the progress and effects of the disease will be better discussed some time hence!" We should have thought the rather that, with the disease now some nine months amongst us, it was high time a half-yearly periodical had something to offer upon authority as to its progress and effects. As Mr. Gladstone has it, "be wise, but, above all, wise in time."

NEW METHOD OF SHOING HORSES.—The Paris correspondent of the *Telegraph* says:—"I went yesterday to inspect a new system of shoeing horses, the invention of a Paris blacksmith, who has tried it for a year and-a-half, and is convinced of its practical superiority over any other plan. Instead of the shoe being placed—frequently much too hot—on the hoof and burning its own resting place, the outside of the hoof is cut away round the foot to the depth of half an inch; this leaves a ledge into which the shoe fits, and is then flush with the frog, which just touches the ground; and the whole foot rests on the ground instead of being raised as of old by the shoe. The visible advantages of this are that the foot is pared and that instead of a great heavy shoe the animal is shod in what are little more than racing plates. The advantages claimed by the inventor are, that the horse never slips, that the shoe allows the foot to expand naturally, and that it lasts as long and is as cheap as the old plan. We naturally objected that the foot was less protected, and, consequently, more liable to injury, to which inventor replied, that horses in a state of nature have no shoes, that the frog hardens, and that he has been for months shoeing the Paris omnibus horses, which pass over very rough streets, in his new fashion, and with great success."

DOGS AND CATS.—A correspondent of a Scottish paper supplies the following curious bit of statistical information:—"According to the Chancellor of the Exchequer, there are three hundred thousand dogs within the United Kingdom for which their owners pay license, and it is computed that only one dog in ten is so licensed. Therefore we have amongst us no fewer than three million dogs. As for cats, we have no such clear statistics; but we may set them down at double the number—that is, six millions, as against three of their canine enemies. The sum that these animals cost their owners per annum is something prodigious, and may be computed as follows:

Dogs licensed—three hundred thousand at 12s. per annum.....	£180,000
Three million dogs' keep—say 1d. per diem, or £1 10s. 5d. per annum.....	4,562,500
Three hundred kennel keepers at £1 per week, or £52 per annum.....	15,500
Six million cats' keep, at 1d. per diem, or 15s. 2½d. per annum.....	4,562,500
	£9,320,600"

—or more than the whole revenues of the Germanic Confederation of the present day. Taking the population of the United Kingdom at thirty millions, the estimated number of dogs gives one to every ten of the population, and of cats, one to every five.

Horticulture.

New Flowers.

We notice many pleasing indications in our city gardens as well as in those of the surrounding districts, that flower cultivation is extending among

well with vigorous growth. If new soil cannot be had, a wheelbarrow of manure to every fifty square feet will be enough. If the garden earth looks gray or yellow, rotten leaves—quite rotten leaves—will remove it. If heavy add sand. If very sandy, add salt—about half a pint to fifty square feet. If very blak or rich from previous year's manurings, use a little lime, about a pint slacked to fifty square feet.

If the garden be full of hardy perennial flowers, do not dig it, but use a fork, and that not deeply.

Dig garden ground only when the soil is warm and dry. Do not be in a hurry, or you may get behind. When a clod of earth will crush to powder as you tread on it, it is time to dig—not before.

If perennial plants have stood three years in one place, separate the stools, replanting one-third, and



ZINNIA ELEGANS.

us. Seedsmen, too, experience yearly a largely increasing demand, not only for seeds, but for plants in pots. In our nurseries, so far as ornamental shrubs are concerned, the same remarks hold good. This is as it should be. The utilitarian aspects of ordinary work-a-day life should be, as far as is practicable, blended with the ornamental and the beautiful. Floriculture is not one of those luxuries that can only be indulged in by the wealthy. A few square yards of ground, and the judicious expenditure of a few cents in the purchase of the seeds of such delightful plants as we have illustrated in the two last and present issues of THE FARMER, are all that is necessary.

Zinnia elegans, shown in one of the accompanying cuts, is a recently introduced double flowered variety of the well known *Zinnia*. It is a hardy annual, very elegant in its habit, and attains a height of about three feet. Mr. Simmers states in his *Cultivators' Guide* that "at least one-half of the seeds from double flowers will reproduce double flowers."

Clarkia elegans flore albo pleno shown in our next illustration is a much valued little hardy annual, with double white flowers. There are several varieties of the *clarkia* species, but they are all similar in habit, and they are all easily cultivated.

The *Victoria Aster*, represented in our last cuts, is a new and splendid variety of this deservedly admired flower. Each bloom is as large as the so-called Giant Asters, of elegant habit; very regular globular form, extremely double, and of bright rosy crimson colour. The plant grows very robust, one and three quarter feet high, and owing to its robust and regular growth it is self-supporting.

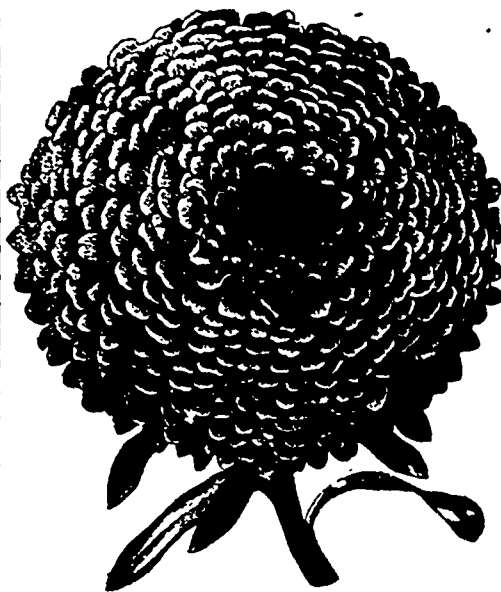
Hints for the Flower Garden.

PREPARING the ground is, of course, the first thing in order.

If flowers have been growing in the ground for many years, new soil does wonders. Rich manure makes plants grow, but they do not always flower



CLARKIA ELEGANS.



VICTORIA ASTER.—(Half Natural Size)



VICTORIA ASTER.—(One-tenth Natural Size.)

give the balance to your neighbour who has none. Set out the annuals you have got forward in windows or frames—that is hardy ones. The plan is barbarous. No wonder with such old fogyish rules, our handsome young ladies are disgusted with gardening. Let the girls lift the seedlings carefully from the soil in the pots, set the roots in a saucer of water, take them to their assigned places in the garden, and from the water dibble them at once in. Cover for twenty-four hours with an inverted flower pot, next day cover only six hours during the middle of the day—next but an hour or so during hot sun, if there be any; and the plant is safe. Study the difference between hardy and tender annuals. The latter must be set out only in April. In the north—extreme north—also of course, our rules are too early.—*Maryland Farmer*.

My Asparagus Bed.

ONE year ago this spring I planted an asparagus bed. I ought to have done so years ago, and since the duty is performed, I have greatly regretted that I neglected it so long. How seasonable a luxury has been lacking from my table by putting off from year to year a little timely labour. And is not this remark true in an extended sense of most of us farmers? How much of the toothsome products of the garden we might enjoy, of fruit we might gloat over, of flowers we might smell, of delicious shade that might spread its coolness on our beavers, if we would only expend this bit of timely labor. But I planted my asparagus bed, at least, as to save time; and I did it. I have gained a year. Generally they do not yield for the table until the third season, but on the 22nd of April of the second year in the calendar of the asparagus bed, I made the first cutting; and in a week's time the shoots were up again, of a dark green color, and as thick as my finger. I planted in this way: In a sunny corner of the garden I made a hot-bed the previous year. The manure, well rotted, remained in it. This I trenched deeply, and mixed the manure well in the soil. On the top I took care to have three or four inches of nice loam, not over rich. In this I planted strong, two-year old asparagus roots, and hoed them faithfully all summer. This is all. The result is, this year I shall have asparagus enough for my own table; next year I expect to have some for my neighbours.—*Rural New Yorker*.

Management of the Rose.

We copy from the October and November numbers of the *Horticulturist*, the following excellent practical directions, for successful rose culture, by the author of "The Book of Roses," F. PARKMAN of Jamaica Plain, Mass. :—

POT CULTURE. Many of the ever-blooming roses cannot, in our climate, be cultivated in the open air without extreme precaution to protect them from the cold. To grow them most successfully the aid of glass is necessary. Many of the hardy perpetual roses also may be grown with advantage in pots, by which means their bloom may be prolonged into the early winter months, or they may be forced into premature flowering long before their natural season of bloom. The first essential in the pot culture of roses is, the preparation of the soil. Those of delicate growth, like most of the China and Tea roses, require a lighter soil than the more robust varieties, like most of the hardy perpetuals. A mixture of loam, manure, leaf-mould and sand, in the proportion of two bushels of loam to one bushel of manure, one bushel of leaf-mould, and half a bushel of sand makes a good soil for the more delicate roses. For the more robust kinds, the proportion of loam and of manure should be greater. In all cases the materials should be mixed two or three months before they are wanted for use, and turned over several times to incorporate them thoroughly. They are frequently, however, mixed and used at once. The best loam is that composed of thoroughly rotted turf. A very skillful English rose grower, Mr. Rivers, recommends the compact turf shaved from the surface of an old pasture, and roasted and partially charred on a sheet of iron over a moderate fire. We have found no enriching material so good as the sweepings from the floor of a horse-shoe, in which manure is mixed with the shavings of hoofs. It is light and porous, and furnishes, in decomposing, a great quantity of ammonia. For the more delicate roses it is particularly suited, while the stronger kinds will bear manures of a stronger and denser nature. The light black soil from the woods is an excellent substitute for leaf mould; or, to speak more correctly, it is a natural leaf-mould in the most thorough state of decomposition. Young and thrifty roses which have been grown during summer may be potted for the house in September. They should be taken up with care, the large straggling roots cut back and all bruised ends removed with a sharp knife. The ends of the branches should also be cut back. They may then be potted in the compost just described, which should first be sifted through a very coarse sieve. The pots must be well drained with broken crocks placed over the hole at the bottom. Care must be taken that the pot be not too large, as this is very injurious. A sharp stick may be used to compact the soil about the roots, and from half an inch to an inch in depth should be left empty at the top to assist in thorough watering, which is a point of the last importance.

When the roses are potted, they should be placed in a light cellar or shed, or under a shady wall. They must be well watered, and it is well to syringe them occasionally. In a week or two they will have become established, and may then be removed to a green-house, without fire and with plenty of air, care, however, being taken to protect them from frost at night.

The roses so treated are intended for blooming from mid-winter to the end of spring, and we shall soon speak further of them under the head of forcing.

A great desideratum is the obtaining of roses in the early part of winter. This may be done by growing ever-blooming roses in pots in the open air during summer, plunging the pot in the earth and placing a tile or brick beneath it to prevent the egress of roots and ingress of worms. Towards the end of August, cut off all the flowers and buds, at the same time shortening the flower stalks to two or three eyes. Then give the roses a supply of manure-water to stimulate their growth. If they are in a thrifty condition, they will form new shoots and flower-buds before the frost sets in, and may then be removed to a cold green-house, where they will continue to flower for several months.

FORCING.—"Forcing" is the very inappropriate name of the process by which roses and other plants are induced to bloom under glass in advance of their natural season. We say that the name is inappropriate, because one of the chief essentials to the success of the process, consists in an abstinence from all that is violent or sudden, and in the gentle and graduated application of the stimulus of artificial heat.

Roses may be forced in the green house, but not to advantage, because the conditions of success will be inconsistent with the requirements of many of the other plants. The progress is best carried on in a small glass structure made for such purposes and called a forcing pit.

A pit ten or twelve feet long and eight or ten wide will commonly be large enough. It may be of the simplest and cheapest construction. In a dry situation there is advantage in sinking the lower part of it two or three feet below the surface of the ground. The roses may be placed on beds of earth or wooden platforms, so arranged as to bring the top of the plants near the glass, and a sunken path may pass down the middle. The pit may be heated by a stove enclosed with brick work, and furnished with a flue of brick or tile passing along the front of the pit and entering the chimney at the farther end. The lights must be moveable, or other means provided for ample ventilation, and, if these are such that the air on entering will pass over the heated flues and thus become warmed in the passage, great advantage will result. A pit may be appended to a green-house, in which case it may be heated by hot water pipes furnished with means of cutting off or letting on the water.

The roses potted for forcing as directed in the last section should be kept in a dormant state till the middle of December. A portion of them may then be brought into the pit and the young shoots pruned back to two or three eyes. The heat at first must be very moderate, not much exceeding forty-five degrees in the daytime, and, throughout the process, the pit should be kept as cool as possible at night, great care, however, being taken that no frost is admitted. With this view the glass should be covered at sunset with thick mats. Syringe the plants as the buds begin to swell, and lose no opportunity to give air on mild and bright days. Raise the heat gradually till it reaches sixty degrees, which is enough during the winter months, so far as fire heat is concerned. The heat of the sun will sometimes raise it to seventy or eighty degrees. Syringe every morning, and if the aphid appears, fumigate with tobacco, then syringe forcibly to wash off the dead insects. As the plants advance in growth they require plenty of water, and as the buds begin to swell, manure-water may be applied once or twice. When the buds are ready to open, the pots may be removed to the green-house or drawing-room, and another supply put in their place for a second crop of flowers. When the blooms are faded the flower-stalks may be cut back to two or three eyes, and the plants placed again in the forcing-pit for another crop. This, of course, is applicable to ever-blooming roses only.

The most common and simple way, however, of obtaining roses in winter is, to grow them on rafters in the green-house. Some of the Noisette, China and Tea roses thus treated, will furnish an abundant supply of excellent flowers. By pruning them at different periods during the summer and autumn, they will be induced to flower in succession; since, with all roses, the time of blooming is, to a great degree, dependent on the time of pruning.

Roses potted in the manner described for forcing, may also be brought into bloom in the sunny window of a chamber or drawing-room. They will bloom much better if allowed to remain at rest in a cool cellar for a month or two after potting.

PROPAGATION OF THE ROSE.—There are five modes of propagating the rose; by layers, by cuttings, by budding, by grafting, and by suckers.

PROPAGATION BY LAYERS.—This is, perhaps, for the amateur, the most convenient and certain method. The best season for layering is the summer, from the end of June to the end of August, and, for some varieties, even later. The rose which is to be multiplied should be in a condition of vigorous growth. Loosen and pulverize the soil around it, and, if heavy and adhesive, add a liberal quantity of very old manure mixed with its bulk of sharp sand. The implements needed for the operation are a knife, a trowel, and hooked wooden pegs. Choose a well ripened shoot of the same season's growth, and strip off the leaves from its base a foot or more up the stalk; but by all means suffer the leaves at the end to remain. Bend the shoot gently downward with the left hand and insert the edge of the knife in its upper or inner side six or eight inches from its base, and immediately below a bud. Cut half way through the stem, then turn the edge of the knife upward and cautiously slit the stem through the middle, to the length of an inch and a half, thus a tongue of wood with a bud at its end will be formed. With the thumb and finger of the left hand raise the upper part of the stem erect, at the same time by a slight twist turning the tongue aside, steadying the stem meanwhile with the right hand. Thus the tongue will be brought to a right angle, or nearly so, with the part of the stem from which it was cut. Hold it in this position with the left hand, while with the trowel you make a slit in the soil just beneath it. Into this insert the tongue and bent part of the stem to a depth not much exceeding 2 inches. Press the earth firmly round them and pin them down with one of the hooked pegs. Some operators cut the tongue on the lower or outer side of the stem; but this has a double disadvantage. In the first place the stem is much more liable to break

in being bent, and in the next place, the tongue is liable to reunite with the cut part and thus defeat the operation. When all is finished, the extremity of the shoot should stand out of the ground as nearly upright as possible, and should by no means be cut back, a mistaken practice in use with some gardeners.

In a favourable season most of the layers will be well rooted before the frost sets in. If the weather is very dry, there will be many failures. Instead of roots a hard cellular substance will form in a ball around the tongue. In the dry summer of 1864 the rose-layers were thus "clubbed" with lumps often as large as a hen's egg, but cases like this are rare.

In November, it is better in our severe climate to take up the rooted layers and keep them during winter in a "cold frame," that is a frame constructed like that of a hot-bed without the heat. Here they should be set closely in light soil to the depth of at least six inches, and covered with boards and matting, or they may be potted in small pots and placed in a frame or cellar.

Layers may be made in spring from wood of the last season's growth; but laying the young wood during summer, as described above, is much to be preferred.

New Dahlias.

INTRODUCED IN SPRING 1866.

Annie Austin (Keynes), height 4 to 5 feet; bright light amber; beautiful form; constant and first-class Keynes.

Arrah-na-Pogue (Fellowes), height 3 feet; soft pale lilac, good petal and outline. Turner.

Artemus Ward (Fellowes), height 3 feet; bluish striped and spotted with deep purple; high centred, constant, novel, and early. Turner.

Arthur (Fellowes), height 4 feet; deep lilac, full size, a good black-tire flower, constant. Turner.

Attractive (Wheeler), height 3 feet; white ground, striped and spotted with purple, flaked with rose, full size, good outline, and very constant; a novel and beautiful fancy flower of first-rate quality. Wheeler.

Blushing Fifteen (Thornycroft), height 5 feet; rosy lilac; a large, full, and finely-formed show flower. Turner.

Bullion (Fellowes), height 5 feet; deep golden yellow, of the finest form and symmetry; the best of its class. Turner.

Chang (Keynes), height 3 to 4 feet; yellow striped and mottled with scarlet; flowers of enormous size and perfect shape. Keynes.

Couslip Ball (Fellowes), height 3 feet; bright yellow, tipped and edged with bright red; of good form. Turner.

Dairy Maid (Barnes), height 4 feet; of a quite new cream colour, perfect shape, and constant habit. Barnes.

Damecroft Hero (Barnes), height 4 feet; clear rose lilac; of fine form and habit, throwing the blooms well out. Barnes.

Epaulette (Fellowes), height 5 feet; pale yellow, edged and tipped with purple; a large finely-shaped show flower. Turner.

Fair Imogene (Fellowes), height 4 feet; white, delicately tinged and shot with lavender; large, full, and fine. Turner.

Funny Sturt (Pope), height 3 to 4 feet; red, tipped with white; constant, and of exquisite form and quality. Is as great an advance in fancies as *Lord Derby*, by the same raiser, was in selfs. Turner.

Frank Tiffin (Keynes), height 3 feet; yellow, heavily striped with red, beautiful, chaste, and striking. Keynes.

Free Mason (Turner), height 4 feet; light purple, changing to lilac; a very deep, finely-formed flower of full size. Turner.

George White (Keynes), height 3 feet; deep purple large and always good. Keynes.

Gladiator (Church), height 4 feet; white, very deeply laced with deep pink, like a picotee; unsurpassed in its class. Keynes.

Golden Ball (Legge), height 20 inches; bright yellow and splendidly formed; a fine free bedder. Legge.

Golden Empire (Legge), height 3 feet; deep yellow; very constant and good. Legge.

Helen Potter (Keynes), height 5 feet; bluish white; very large; very full and constant. Keynes.

James Backhouse (Goodwin), height 3 feet; very deep plum or mulberry. The finest show flower of last season. Keynes.

Jeanie Deans (Keynes), height 3 to 4 feet; orange, striped purple; large, and very constant. Keynes.

John Burn (Keynes), height 3 feet; white, striped, and mottled purple; very full centre. Keynes.

John Downie (Keynes), height 4 feet; yellow, tipped with red; beautifully formed, first class, and always good. Keynes.

Lady Mary Wilks (Eckford), height 3 feet; white, with purple-rose tips; a very useful flower. Keynes.

Lady of the Lake (Goodwin), blush, edged with purple; large, constant, and a fine show flower. Keynes.

L'Africana (Fellowes), height 3 feet; rich dark claret and finely formed. Turner.

Le Domin Noir (Turner), height 2 to 3 feet; maroon tipped white; fine petal and outline. Turner.

Lilac Perfection (Legge), height 1 foot; rosy lilac; extra fine and constant. Legge.

Lolly Atkins (Keynes), height 3 feet; blush, tipped with lilac; chaste, and always good. Keynes.

Margais of Winchester (Keynes), height 3 feet; bright crimson; the flower of the season. Keynes.

Master of Arts (Turner), height 3 feet; fawn, shot with purple; very novel, with stout fine smooth petals; constant. Turner.

Miss Tollemache (Barnes), height 3 to 4 feet; peach rose, or Solferino of extra shape and habit; quite constant. Barnes.

Mrs. Savory (Church), height 3 feet; a laced flower, like *Bird of Passage*, but larger, and rather deeper pencilled with purple lilac. Keynes.

President Lincoln (Keynes), height 3 feet; buff, striped red and orange; very fine. Keynes.

Pride of the World (Legge), height 4 feet; golden yellow, tipped with crimson; large and fine. Legge.

Princess Alice (Turner), height 4 feet; blush, heavily edged and tipped with purple; a constant and useful show flower of good habit. Turner.

Queen of Roses (Barnes), height 3 to 4 feet; bright rosy pink of beautiful form and habit; constant. Barnes.

Remarkable (Barbury), height 1 foot, fancy dark stripe; extra fine.

Royal Robe (Turner), height 4 feet; deep plum colour; constant, and of good form. Turner.

Sunbeam (Wheeler), height 2 feet; white, edged with bright scarlet; very showy and brilliant; an attractive show flower, and effective as a bedder. Wheeler.

T. p. Sawyer (Keynes), height 3 feet; white, striped and mottled with purple; full in centre. Keynes.

Ultimatum (Keynes), height 3 feet; blush, tipped with rosy crimson; of perfect form. Keynes.

Yellow Triumph (Wheeler), height 4 feet; clear yellow; extra fine in petal and outline, with a beautiful compact centre, and most constant. Wheeler.

BLACK KNOT ON PLUM AND CHERRY TREES.—A correspondent of the *Gardeners' Monthly* has used a solution of salt and sulphite of iron as a remedy for the black-knot on cherry and plum trees. The two ingredients were dissolved in water. He considers it a perfect success as it invariably destroys the disease, but it seems to us a somewhat tedious process, although it may furnish a hint as to the right treatment.

FRUIT TREES.—A writer in the *British Whig* asserts that the apple trees in Canada are everywhere decaying, particularly in the old orchards. The cause of this, according to him, is that fruit trees are generally planted in cultivated ground, whereas they should never be planted except in virgin soil which plough or spade has never entered. Perfectly new ground, he says, has a bright porous nature, which is completely and forever lost once the plough enters it, and such ground alone is fit for the growth of fruit trees.

GRAPES IN WINCONSIN.—A correspondent of the *German town Telegraph*, writing from Burlington, Wis., says:

When we are asked what is the best grape to plant we generally say Concord, because the Concord is not only a good grape, which grows and ripens here, but we can grow them by the bushel; while Delawares and Dianas, although better in quality, are slow to produce, and need a great deal of patience, especially when you buy them of these patent grape growers, who send out little roots that have to be nursed two or three years before they will begin to grow, and need an affidavit to prove they are grape vines. It is true, a great many grape vines are propagated by steam heat, and have very little vitality. We grow all ours in the open air.

TO PRESERVE A BOUQUET.—A florist of many years' experience, sends the following receipt for preserving bouquets to the *American Artisan*:—When you receive a bouquet, sprinkle it lightly with cold water; then put it in a vessel containing some soapuds which nourish the roots and keep the flowers as good as new. Take the bouquet out of the suds every morning and lay it sideways in fresh water, the stock entering first into the water; keep it there a minute or two, then take it out and sprinkle the flowers lightly by the hand with pure water. Replace the flowers in the soapuds and the flowers will bloom up as fresh as when gathered.

Miscellaneous.

LITTLE THINGS.—The preciousness of little things was never more beautifully expressed than in the following morcean by B. F. Taylor:—

"Little martin-boxes of homes are generally the most happy and cozy; little villages are nearer to being atoms of a shattered paradise than anything we know of; and little fortunes bring the most content, and little hopes the least disappointments.

Little words are the sweetest to hear; little charities fly furthest, and stay longest on the wing; little lakes are the stillest, little hearts the fullest, and little farms the best tilled. Little books are the most read, and little songs the most loved. And when nature would make anything especially rare and beautiful, she makes it little,—little pearls, little diamonds, little dews,

Everybody calls that little that they love best on earth. We once heard a good sort of a man speak of his little wife, and we fancied that she must be a perfect little bijou of a wife. We saw her, and she weighed 210; we were surprised. But then it was no joke; the man meant it. He could put his wife in his heart and have room for other things besides; and what was she but precious, and what was she but little?

Multum in Parvo—much in little—is the great beauty of all that we love best, hope for most, and remember the longest."

THE FIRST OYSTER-EATER.—Once upon a time—it must be a prodigiously long time ago, however—a man of melancholy mind, who was walking by the shores of a picturesque estuary, listening to the monotonous murmur of the sad sea waves, espied a very old and ugly oyster, all covered over with parasites and seaweeds. It was so unprepossessing that he kicked it with his foot, and the animal astonished at receiving such rude treatment on its own domain, gaped wide with indignation. Seeing the beautiful cream-coloured layers that shone within the shelly covering, and fancying the interior of the shell to be beautiful, he lifted up the "aged native" for further examination, inserting his finger and thumb within the shells. The irate mollusc, thinking, no doubt, that this was meant as a further insult, snapped its pearly door close upon the finger of the intruder, causing him some little pain. After releasing his wounded digit, the inquisitive gentleman very naturally put it into his mouth, "Delightful!" exclaimed he, opening wide his eyes. "What is this?" and again he sucked his thumb. Then the great truth flashed upon him that he had found out a new delight—had, in fact, accidentally achieved the most important discovery ever made up to that date. He proceeded at once to the verification of his thought. Taking up a stone, he forced open the doors of the oyster, and gingerly tried a piece of the mollusc itself. Delicious was the result; and so, there and then, with no other condiment than the juice of the animal—with no reaming brown stout or pale Chablis to wash down the repast, no nicely-cut, well-buttered bread—did that solitary anonymous man inaugurate the oyster banquet.—*Bertram's "Harvest of the Sea."*

Poetry.

I am the Family Cat.

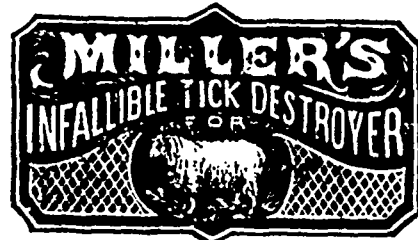
I can fold up my claws,
In my soft velvet paws,
And purr in the sun
'Till the short day is done—
For I am the family cat.

I can doze by the hour
In the vine-covered bower,
Winking and blinking
Through sunshine and shower—
For I am the family cat.

From the gooseberry bush,
Or, where bright currants blush,
I may suddenly spring
For a bird on the wing,
Or dart up a tree.
If a brown nest I see,
And select a choice morsel
For dinner or tea,
And no one to blame me,
Deride me or shame me—
For I am the family cat.

In the cold winter night,
When the ground is all white,
And the icicles shiver
In a long silver line,
I stay not to shiver
In the moonbeam's pale quiver,
But curl up in the house,
As snug as a mouse,
And play Jacky Horner
In the cosiest corner.
Breaking nobody's laws,
With my chin on my paws,
Asleep with one eye, and awake with the other
For wails from the children, kind words from the mother—
For I am the family cat.

Advertisements.



A CERTAIN cure for Tick, and all skin affections in Sheep
No stock master should be without it.

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Chemists, Toronto.

Toronto, Jan. 1.

v3-1-11

PRIZES! PRIZES! PRIZES! PRIZES! PRIZES!

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THE BEST TOOL IS THE CHEAPEST

A. S. Whiting & Co., Oshawa, C. W.,

Manufacturers of the Celebrated Premium

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THE superior excellence of these Tools is indicated by their high and unequalled popularity, and its rapid growth. Every article from this establishment is SPECIALLY MADE FOR USE. They have invariably won the HIGHEST HONORS at Exhibitions, and amongst their many prizes are the following:—

First Prizes at Provincial Exhibition in Toronto in 1858.

First Prizes at Provincial Exhibition in Kingston in 1859.

First Prizes at Provincial Exhibition in Hamilton in 1860.

First Prizes at Provincial Exhibition in London in 1861.

First Prizes at Provincial Exhibition in Toronto in 1862.

Did not exhibit, there being no competition at the

Provincial Exhibition in Kingston in 1863.

First Prizes at Provincial Exhibition in Hamilton in 1864.

First Prizes at Provincial Exhibition in London in 1865.

Medal and Diploma for First Prizes at the Provincial Practical Test Exhibition, or grand special trial of Agricultural Implements at work, held under the direction of the Board of Agriculture on Mr. Logan's Farm, near Montreal, in August, 1859, at which those TOOLS COMPLETED VICTORIOUSLY, not only with Canadian makes, but with those from some of the best makers in New York, Vermont and others of the United States.

The Proprietors have also the honor to state that these Tools obtained the FIRST PRIZE AT THE WORLD'S FAIR or Exhibition of all Nations in London, England, in 1862, for which they now hold the Bronze Medal. Also First Prize and Medal at the International Exhibition in Dublin, Ireland, in 1863, at which they were specially commended for "their excellence of manufacture and their moderate price."

Caution to Farmers.—As every tool of this make is thoroughly reliable, purchasers should always be particular in seeing to the stamp, (A. S. Whiting & Co., Oshawa, C. W.,) to make certain of getting the genuine article.

A. S. WHITING, & Co., PROPRIETORS,

Oshawa, C. W.

v3-3-m. 11.

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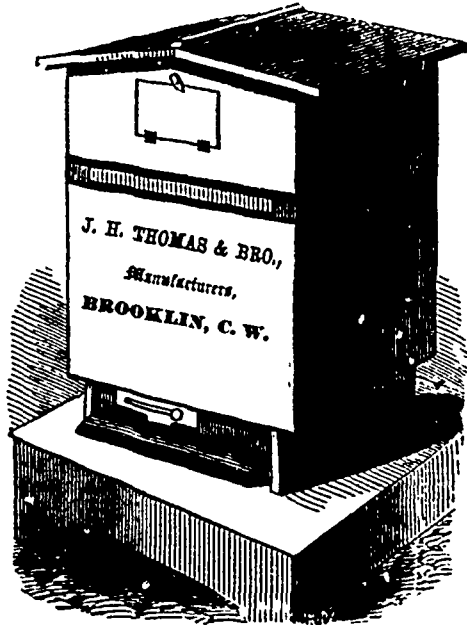
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CASH Paid for any quantity of Bones, delivered in Boston, or at our Bone Flour Manufactory, in N. Y. Address, C. H. GARDNER, AGENT

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HAVING increased facilities for manufacturing J. H. THOMAS' FIRST PRIZE DOUBLE AND SINGLE BOARDED BEE-HIVES, we are prepared to offer them, to those having previously purchased a hive and right of us, at the following rates. D. B. Hives \$3 50. S. B. Hives \$2 50. If ordered in lots of three to one address, D. B. \$3 25. S. B. \$2 25. In lots of six or more to one address, D. B. \$3 00. S. B. \$2 00.

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J. H. THOMAS & Bros., Manufacturers, Brooklin, C. W.

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This well known Machine is manufactured by Seymour Morgan & Allen, of Brockport, N. Y. It is the result of twenty years' careful practical and successful experience. It is a combined self raking reaper and mower. The self rake saves one man in delivering the grain, and much labor in the binding, by the perfect manner in which it does its work. Price of Machines, \$155, delivered per railroad; extra knives and pieces liable to wear, sent on with the machines, and is warranted in every particular, and to perform well in every capacity. A fair trial is given with all machines, and if they do not perform as represented, they will be removed free of expense to the person ordering them.

All orders and letters promptly attended to by SAMUEL FOWLES, Peterboro', Agent for Canada.

LANDS FOR SALE.

TWENTY THOUSAND ACRES OF LAND, both wild and improved, and at all prices, for sale in various townships throughout Upper Canada, cheap and on easy terms. For lists and particulars, apply to the proprietor, T. D. LEDYARD, Barrister, etc., South-west cor. of King and Yonge-sts., Toronto, Oct. 2, 1864.

BLACKSMITH'S TOOLS.

Peterson's Patent Tyre Upsetting Machine. Patent Regulating Blast, Tuyere Iron. Patent Double Geared Tyre Bender. And other Blacksmith's Tools. FOR SALE BY ARCHIBALD YOUNG, Janitor, General Agent, Sarnia, C. W. AGENTS WANTED. County Rights for sale. Send for an Illustrated and Descriptive Circular.

Markets.

Toronto Markets.

'CANADA FARMER' Office, Friday, June 1, 1866. We have had a heavy fall of rain on Sunday and Monday with occasional showers since. The weather is now fine and clear. By the City of Boston we have later news from England. The financial panic was subsiding; the bank-rate of discount remains nominally at 10 per cent., though 12 per cent. is charged for advance on stocks. Consols 87 1/2 to 87 3/4.

Primo cattle are very scarce in our market, so scarce that several carloads have been brought from Chicago within the past week to supply the wants of our butchers. The cattle in the hands of farmers are, as a rule, of very inferior description. First-class cattle sell at \$10 per 100 lbs, dressed weight; 2nd class \$8 50 to \$9 per 100 lbs, dressed weight. Inferior \$7 to \$8 per 100 lbs, dressed weight. Sheep scarce and in demand at from \$6 to \$7 each; clip ped sheep \$4 50 to \$5. Calves plentiful and lower at from \$5 to \$7 each. It would be for the interests of farmers to feed their calves better, as extra calves bring as high as \$8 to \$10 each, in our market. Best cuts of roast beef and steak sell at 20c per lb retail.

In flour there is little doing. Prices have nominally declined, with no buyers open at reduced rates, except to fill orders for local consumption. In wheat quotations are almost nominal in the almost total absence of transactions. Other grains remain without material change. The provision market remains unchanged. Cincinnati and Chicago markets have not been quite so active, but the market here remains quite unaffected. Butter is rather scarce. The cold and unseasonable weather, lately prevalent, has tended to lessen the quantity made.

The following are quotations of the prices of produce, &c.:- Fall Wheat-The market is well supplied. Carloads selling at \$1 85 to \$1 95; on the street, \$1 55 to \$1 95. Spring Wheat-Cargoes are offering at \$1 40, f. o. b., without buyers; a lot choice choice quality sold to-day at \$1 44.

Barley-Few transactions, prices are nominal. Carloads sell at 50c to 60c.

Peas-Dull and declining, 65c to 70c.

Flour-No transactions; prices nominal.

Oats-Firm and unchanged, freely offered on the street at 32c; holders asking 34c f. o. b.

Rye-Prices, in the absence of transactions, are at present nominal at 50c to 60c per bushel of 56 lbs.

Provisions unchanged. Pork, mess unchanged, \$23 per barrel; prime mess, \$20 to \$21 per barrel. Hams, in salt, \$12 50; smoked do., \$14. Dried Hams, \$13 per 100 lbs. Lard, 15c to 15c. Country Lard 10c to 12c. Bacon, unchanged, at 10c to 12c per lb. Beef hams, \$13 to \$14 per 100 lbs. Butter-Firm 15c to 16c for store packed; no dairy in the market; choice dairy rolls from 16c to 18c per lb. Eggs in abundance at from 8c to 10c.

Salt-Liverpool, in bags, held at \$1.

Hay-\$9 to \$10. Straw, \$6.

Freights-Dull. Grain to Oswego by vessel, 2 1/2c per 100 lbs. American currency. Flour to Montreal by steam, 25c to 30c, gold.

Grain-Uwen bound to Toronto by Northern Railway 10c; Milwaukee to Kingston, 22c American currency. Lumber to Oswego \$1 50, United States currency.

Montreal Markets, May 23.-Laidlaw, Middleton & Co. report:-Flour-Receipts 8 1/2 barrels; market dull; considerable sales, ordinary Canada and W. Canal superfine \$0.50 on spot, \$0.60 all June; Strong Canada superfine, \$0.60 to \$0.65; Coarse grades dull, at \$2.50 to 3.00. Wheat-No transactions. Peas-Small sales, 86c 50 lbs. Athol-Lower and nominal.

Milwaukee Markets, May 23.-Wheat-Receipts 70,000 bushels; No. 1, f. o. b., \$1.82. Flour-Equal to No. 1, Montreal inspection, \$9.50 and nominal. Freights-On wheat to Kingston, 11c; pork, 31c.

Chicago Markets, May 23.-Wheat-Receipts 30,000 bushels; No. 1, f. o. b., \$1.63 1/2 to \$1.68 1/2. Corn-Easter, at 54 1/2c to 54 3/4c; receipts, 350,000 bushels.

Oswego Markets, May 23.-Flour-Market firm and active at \$10.25 for brands from No. 1 spring, \$12 from red winter, and at \$15 for double extra from prime white wheat. Grain-The market for wheat closes a shade easier; No. 1 Milwaukee club at \$2.12 1/2; No. 2 do., at \$2; No. 3 Chicago spring at \$1.45. Corn-Quiet, and quotations nominal. Other grains also quiet. Canal Freight, dull; flour 40c, wheat 9 1/2c, and corn 8c to New York, Lumber \$3 to the Hudson, and \$1.50 to New York.

Buffalo Markets, May 23.-Flour-Market steady, with light stock of winter wheat flour, the demand mainly for spring extra and Western State, Fancy State, \$10, XX Western, \$13, \$11.37 1/2, and \$11.75, Extra state, Queen City Mills, \$9.75, Western, \$11.75, \$12.50, and \$13. Wheat-The market rules dull; stock light; prices rule firm, Wisconsin spring, per sample, \$1.85, held No. 1 Milwaukee spring, boat loads, \$2.10; car lots, \$2.12; white Canada and Michigan, \$2.90 to \$3; amber Michigan, \$2.75, car lots. Corn-The market lower, with fair demand at decline; No. 1, 73c, and No. 1 mixed, 71c, one cargo to arrive, 70c; one, do, 70 1/2c. Oats-Quiet but firm; parties apart; held at Chicago at 48c; Milwaukee, 60c; with 46 1/2c to 48 1/2c bid. Barley-Quiet and nominal, no sales and no enquiry. Rye-Held at \$1.10, and \$1.05 bid for No. 1 Milwaukee. Peas-Last sales at \$1.10 for Canada. Beans quiet and nominal at \$1.25 to \$1.50.

New York Markets, May 23.-Cotton quiet at 41c for middling. Flour-Receipts, 13,733 bbls.; dull, common grades 10c to 15c lower. Sales 8,000 bbls., at \$7 30 to \$8 30 for superfine State, \$8 35 to \$8 50 for extra State, \$8 55 to \$9 80 for choice do., \$7 30 to \$8 30 for superfine Western, \$8 40 to \$9 80 for common to medium extra Western, and \$9 40 to \$9 80 for common to good shipping brands extra round hoop Ohio Canadian flour dull, 5c to 10c lower, sales, 300 bbls., at \$9 15 to \$10 for common, and \$10 to \$13 45 for good to choice extra. Wheat-Receipts 13,824 bus.; very dull and nominally lower; sales, 4,700 bushels prime new No. 1 Milwaukee at \$2 20-an outside price-and 7,000 bushels Chicago spring at \$1 75. Rye quiet and firm. Barley dull. Corn-Receipts, 22,462 bushels; 1c to 2c lower, and quite active at the decline; sales 180,000 bushels at 78c to 82 1/2c for unsound new mixed Western, 83c to 85c for sound new do. soft, and 86c to 87c for Western yellow. Oats, new 1c to 2c lower, steady for old, sales at 52c to 54c for new Western, 58c for choice Wisconsin. Pork opened firmer and closed heavy, sales, 11,300 bbls., at \$30 75 to \$31 for new mess, closing at \$30 87, regular, and \$29 25 to \$29 60 for old do.

Latest Markets.-Flour closed dull and 10c to 15c lower on common grades. Wheat closed dull and nominally lower. Corn closed 1c to 2c lower, and quite active at the decline. Pork closed heavy; new mess, \$30 87 regular. Lard closed quiet and steady at 19c to 22 1/2c.

Contents of this Number.

THE FIELD: Turnip Cultivation, three cuts... 161. Familiar Talks on Agricultural Principles... 162. Thin Sowing... 162. The Sowing of Barley... 163. Artificial Irrigation of Grass Crops... 163. Top-dressing Oats... 163. Winter-Mulch... 163. CANADIAN NATURAL HISTORY: The Fox, two illustrations... 164. Age of Animals... 164. THE HOUSEHOLD: Homedale Farm, with a cut... 165. Hair Wash for Dandruff... 166. Wooden Shoes... 166. Plants in the Kitchen... 166. STOCK DEPARTMENT: Short-horns-Bates versus Booth Breed as Milkers... 166. Milk as Food for Stock... 166. Washing Sweated Horses... 166. A Roaring Horse... 166. THE DAIRY: An Ohio Cheese Factory... 167. Milk for Cheese Factories... 167. American Cheese in England... 167. ENTOMOLOGY: The Leaf-Cutting Bee... 167. POULTRY YARD: Curculio and Chickens... 167. A Duck House... 167. THE APIARY: Management of the Apiary for June... 168. Miller Traps, Comb Guides, and Condensers... 168. CORRESPONDENCE: Canadian Wool and the American Tariff... 169. Cattle Duty and Fat Hogs... 169. Four Lambs at a Birth... 169. Work on Botany... 169. Portland Cement... 169. Profitable Cattle Feeding... 169. Tanning Skins... 169. EDITORIAL: The Provincial Exhibition... 169. The Season... 169. The War of Bee-Hives... 170. Toronto Horticultural Exhibition... 170. Hamilton Ram and Sheep-Shearing Exhibition... 170. The Hamilton Horticultural Show... 170. The International Horticultural Exhibition... 170. Royal English Society's Cattle Show... 171. AGRICULTURAL INTELLIGENCE: New York State Sheep Fair... 171. New York State Fair... 172. Rinderpest in the Canary Islands... 172. The Wheat Trade of the World... 172. Wheat in Michigan... 172. BRITISH GLEANINGS: Irish Emigration... 172. The Islington Horse Show... 172. The Cattle Plague-Recovery Ratio... 172. Royal English Society's Journal... 172. New Method of Shoeing Horses... 172. Dogs and Cats... 172. HORTICULTURE: New Flowers, four cuts... 173. Hints for the Flower Gardens... 173. My Asparagus Bed... 173. Management of the Rose... 174. New Dahlias... 174. Black Knot in Plugs and Cherry Trees... 175. Fruit Trees... 175. Grapes in Wisconsin... 175. To Preserve a Boquet... 175. MISCELLANEOUS: Little Things... 175. The First Oyster Eater... 175. POETRY: 'I am the Family Cat'... 175. THE CANADA FARMER is printed and published on the 1st and 15th of each month, by GEORGE BROWN, Proprietor, at his Office, No. 26 and 28 King Street East, Toronto, U. C. where all communications for the paper must be addressed. Subscription Price \$1 per annum, (POSTAGE FREE,) payable in advance. Bound volumes for 1864 and 1865 may be had for \$1.30. Subscribers may either begin with No. 1, receiving the back Nos. for 1864 or 1865, or with the first No. for 1866. No subscriptions received for less than a year, and all commence with the first number for the respective years. CLIPPINGS will be furnished at the following rates:- TEN COPIES for... NEW DOLLARS. TWENTY COPIES for... SIXTEEN DOLLARS. FORTY COPIES for... THIRTY DOLLARS. ONE HUNDRED COPIES for... SEVENTY DOLLARS. To Agricultural Societies ordering more than 125 copies, the FARMER will be sent at SIXTY CENTS. THE CANADA FARMER presents a first-class medium for Agricultural advertisements. Terms of advertising, 20 cents per line of space occupied, each insertion-one inch space being equal to 12 lines. No advertisement charged less than \$2, being ten lines of space. Communications on Agricultural subjects are invited, addressed to 'The Editor of the Canada Farmer,' and all orders for the paper are to be sent to GEORGE BROWN, Proprietor and Publisher.