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THE ONTARIO FARMER,

A MONTHLY JOURNAL OF

Agriculture, Horticulture, Country Life, Emigration, and the Mechanic Arts.

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The Farm.

HINTS FOR THE MONTH.

November is a month of very uncertain character in this climate. It is hard to say how it will behave. Sometimes it begins with a rough cold snap that startles us into a conviction that winter does really mean to come again, and, as if to make amends for its rough behaviour at the outside, closes with that delightful reminder of a departed season which we call "Indian Summer." Or this order is reversed, in which case summer in pretence begins the month, and winter in earnest closes it. The well-known March proverb is not inapplicable to November. If it came in like a lamb it will go out like a lion, and *vice versa*.

"Preparation for winter" may be written as the motto and watchword for November. It is to be presumed that the potatoes are all dug and housed either in cellars or pits. We are liable to have frosts about the first of November, severe enough to do great damage to potatoes. If any are left in the ground at so late a date as this, by all means let them be got out of it forthwith, if Jack Frost is not playing jailer with them.

All the root crops should be taken care of at once: carrots, beets, mangolds, and turnips. Carrots are beginning to be raised extensively, chiefly as winter food for horses, and they are very valuable for this purpose. But they are equally good for other animals. Boiled and mixed with meal they are excellent for fattening hogs. Mangolds may be alternated with turnips in feeding cattle. Thus used for milch

cows, they correct the turnipy flavour which is apt to be given to the milk by the exclusive use of turnips. But mangolds are especially useful towards the close of winter, and by their peculiar qualities, are an excellent preparation for turning out to grass. In taking up turnips, the best plan is to remove the tops before lifting the roots. This can be done most expeditiously by means of a sharp hoe. Care must be had not to cut a slice off the turnip along with the top. The tops may either be fed to cattle or ploughed in. We prefer the latter course, chiefly because the tops are rather too unsubstantial and loosening diet to be a good preparation for winter, while they are an excellent green manure. Some farmers are in the habit of tearing their turnips out of the ground with harrows. We do not commend this practice. It cuts up and wounds the bulbs considerably. A light tool, somewhat like a pick, made for the purpose, does the work much more satisfactory, and the process is not so slow as might be imagined. One of the best farmers we know, who usually raises about twenty acres of turnips each year, pursues this plan in preference to all others. The most convenient way of storing them for winter, is in the root-house close to the cattle stabling, but they will keep well in pits. Care must be taken to provide ventilation, and to avoid the extremes of warmth and cold. Turnips keep best just above the freezing point.

All animals should be well housed this month. Nothing is more unprofitable than to let stock suffer inconvenience from the cold. It is a great waste of feed, for shivering animals eat voraciously, and after all

their food does them far less good than if they were kept comfortable. It is especially bad policy to let young stock suffer exposure. Keep them warm and they will improve in flesh, appearance and constitution. No prize animal was ever produced by being treated to a straw stack for both shelter and food. Colts will show the effect of care and good stabling more decidedly perhaps than any other description of young stock. It is a total mistake to suppose that exposure makes them hardy. Shelter, good food, ventilation and exercise, are what impart toughness of muscle and power of endurance. Fattening hogs should be well housed in good season, and got ready for market by settled cold weather. Better prices usually prevail early in the season, before the market is glutted with pork. Poultry intended for the table or market should be cooped, and fed with scalded meal, and the like. The addition of a little suet will hasten the fattening process, especially in the case of geese and ducks. The practice of converting poultry into food without preliminary fattening is to be reprehended quite as much as the practice of slaughtering lean beef, mutton or pork.

Manure-making is an important November job. Collect stores of muck, leaves, dry tan bark, sawdust, and any sort of litter that can be used as an absorbant, that all the droppings, both liquid and solid, may be secured. "Waste not, want not." The yards should be cleaned now and then, the manure thrown up loosely into heaps, and coated with muck or soil. The value of manure depends largely on the food eaten by the animals; the richer the food the better the manure. A large proportion of the food of well-fed animals finds its way into the manure, and hence that made from fattening animals is of the greatest value. Hogs are the best fed of any animals on the farm, and next to night soil, hog manure is the richest of fertilizers.

Until frost comes, the plough should be kept going upon land meant for spring

crops. All soils are benefited by exposure to the action of frost in a loose condition, clay soils particularly. Many a tough, unpromising soil in the fall, has become loose, friable, and pleasant to work by spring, under the influence of alternate freezing and thawing.

It has been well observed that "there may be great slaughter of biennial weeds this month with a 'spud.' Every coarse-leaved flat-growing plant in the meadows and pastures (and many that have fine leaves in close bunches), and green at this time, are plants that make root one year and bloom the next. Cutting an inch or two below the surface is fatal to most of them, and damaging to all."

Orchard and garden work the present month also comes principally under the head of preparation for winter. Some recommend planting fruit trees as late in the season as it can be done without danger from a too cold and frosty air, which is apt to injure the roots. We prefer to heel in the trees now, and wait for a favourable time to plant in early spring. The orchard may be top-dressed with manure to advantage the present month. Some are absurd enough to expect continuous crops of fruit without enriching the ground in which the trees grow; but fruit is like everything else, it must be cultivated and manured if it is to yield satisfactorily. Where field mice abound, it is necessary to bank up young fruit tree with soil ten or twelve inches high, making the surface firm and smooth, to prevent them from girdling the trees—a favorite trick with them. It is well to spade or plough gardens late in the fall. Some recommend pruning grape vines before winter sets in, others advise until just before the sap begins to flow in early spring. Grape and raspberries are best laid prostrate, and ever covered with an inch or two of soil before winter. A loose covering of cornstocks, straw, litter, or leaves, is advisable in the case of strawberry beds. Tender bulbs should be lifted and put in the cellar, if that has not already

been done. In short, everything animal or vegetable, that requires winter quarters, must without further delay go into them.

STORING ROOTS.

A few words on the subject of storing roots, in addition to the hints already given in the article on the month, may not be unacceptable to young Canadian farmers. With regard to the modes of harvesting the various root crops, it is not always possible, for want of sufficient help, to do this in the best manner. The necessity of using the most expeditious means is sometimes more pressing than the desirableness of employing the most approved plan. Pulling by hand, topping, and tailing, are no doubt the cleanest and altogether thriftiest processes; but with a number of acres to gather and a very few hands to do the work in but a short time, this tidy method is not always practicable. The implement adverted to in the foregoing article, will be found to effect a great saving of time in harvesting turnips. If the work is still more pressing, it may be expeditiously and not badly done with a plow. It is sometimes necessary to use the harrow; but these rough methods are objectionable, as they tend to wound and bruise the roots, and so render them more liable to decay. The less they are knocked about the better.

It is the practice with some good farmers to pile the turnips in heaps in the field, and cover them over with leaves, and let them remain for some days to "sweat" before hauling them to the root-house or pit. It is contended that the after heating in the bulk is thereby diminished.

The root-house is no doubt the most convenient receptacle for storing roots. It should be located near the stables, so as to diminish as much as possible the labors of carrying food to the animals during the winter. Experience will soon teach the farmer the importance of attending to these apparently trifling details. A few minutes saved in operations that recur frequently during each day, will amount in the aggregate to a very considerable item. It is not well, however, to build root-houses under the main portion of barns, for the steam and moisture from turnips especially, will speedily rot the timbers in the roof of the apartment in which they are stored, and when these support the floor of the barn or

stables, they have soon to be replaced, and perhaps at considerable inconvenience and outlay.

Great attention should be paid to thorough ventilation, a moderately cool temperature should be secured, and free egress allowed for the steam and vapor to escape. Generally speaking, the door and other apertures of a root-house where turnips are stored should be kept open during a large portion of the time till Christmas or thereabouts; and even afterwards, whenever there is any considerable rise in the temperature, the access of external air and a thorough draught should be permitted, due caution, of course, being exercised to guard against freezing. Potatoes are not so liable to heat as turnips, nor indeed are mangolds; and both these roots, mangolds and potatoes, are more delicate, more liable to be injured by frost than turnips. Some practical inconvenience therefore occasionally arises from storing the different kinds of roots together. This may be partly guarded against by partitions in the root-house, and by setting apart the warmest portions of the space for the more tender roots.

Where the farmer has not the convenience of a suitable building, or where such accommodation is insufficient for the whole crop, roots may be kept with perfect safety in well-constructed pits. These need be but little dug below the surface, though sometimes they are stored in pretty deep trenches. We prefer a shallow excavation, such as can be made by loosening the soil with a plow, and using a shovel afterwards. A slope of ground should be selected to facilitate drainage, and the length of the pit should correspond to the inclination of the ground. Regard must, however, be had to the aspect. It is not well to have one side facing south and the other north. One will have the full force of the sun, and the other always the shadow, and exposed to the keenest winds, would be doubly cold. The floor of the pit should be so graded that no water can lodge in it, and trenches should surround it outside in such a way as to carry off all melting snow or rain-fall.

The inexperienced are sometimes apt to make these pits too wide, by which the danger of heating is greatly increased. Five or six feet is quite wide enough. The length is a matter of less consequence.—The turnips should be piled up to ridge. If boards are handy they will be found serviceable to place next the roots, in such a way as to prevent the dirt falling in when

the roots are removed from beneath. A good covering of straw should next be packed evenly over the whole. Use plenty of straw. Then cover all with a coat of soil well pressed and beaten down. A thorough ventilation should be secured by chimnies near each end and at regular distances between. These pipes can be conveniently made out of inch fence boards, six inches and four inches wide. Two opposite sides should be about six inches longer than the others, and over the longer a short board can be nailed. This will cover in the top and keep out rain and snow, while a sufficient opening will be left at the sides for ventilation. Sometimes it is desirable at first to leave the ends of the pits open for a time to keep down the temperature, and allow a readier escape of vapor. After a while more earth should be piled on, and before the winter fairly sets in a pretty thick coating of earth should be packed upon the straw. Some persons are afraid of covering too deeply for fear of keeping the turnips too warm, but there will be no fear of this if due attention is paid to the ventilation. Potatoes require a warmer covering and less ventilation than other roots, and should, if possible, be stored away dry. In very cold weather, all openings should be stopped up with straw, which may be removed again when the weather moderates.

TENANT HOUSES.

Tenant houses on the farm should be more common. Farm labourers, those we pick around or who come along looking for a job, and hired for a few months of the year, are very often of indifferent character. Married men, on the contrary, have responsibilities, hence are steadier. These latter are the ones to employ on long terms, and for such tenant houses are necessary. The mechanic, when his day's work is completed, goes to his own home, not that of his employer. The same we may say of other trades, all, except in cases of apprenticeship, leading a distinct and separate life. That charm of life, the privacy of the domestic circle, is not broken in upon, as it must unavoidably be where the help is under the same roof. Little family affairs, nothing in themselves, but annoying when made common, are thus left at home; and your man cannot hire out to your neighbour next year and complain of the poor living he had at farmer A's, for his living he makes to his taste.

One great end attained by the tenant system is the lightening of the cares of the housewife. When I call on my farmer friend and take the noon meal with him, while watching the troop of hungry helps stowing away great heaps of food, I glance at his overworked, delicate wife, and begin to calculate how many more seasons she will grace and

serve his home. I fear that the machinery of the farm is not properly adjusted. Most of the men married, he tells me, and to women of far stronger constitution than the one his wife is blessed with. Put these men in tenant houses, and let their wives cook and wash and mend for them.

By furnishing his help with houses, the farmer is also enabled to supply them with provision with profit to both. Our townsman, Mr. Geddes, widely known for his writings on agriculture, and a practical and successful farmer, provides houses for his laborers, and considers it the best economy.

While writing about hired men I will just tell a little story and then close. Two seasons ago there was a sort of agency in New York city for supplying farmers with men. It seemed a good thing, and some farmers about here made application to the agency. Well two men were sent to one farmer, and were put to work. A few weeks afterward I enquired of him how he liked his help. "Good for nothing, and worse than nothing" was the reply. "Being city men, you see they have city habits. As there is no saloon on the farm to spend the night hours in when the day's work is done, they start for the village tavern. Now, what are those men worth to me for work after a night's carousal? I must rid myself of them immediately." And they went.—*Car Germantown Telegraph.*

THE USES OF CLOVER.

It would be very difficult to over-estimate the importance of this crop to all farmers engaged in mixed husbandry. Its introduction in England produced an entire revolution in the Agriculture of that country. Clover laid the foundation of all those wise systems of rotation that have since made the Agriculture of England a model, and a marvel to the world. Nor is its importance much less in those sections of America where its values are appreciated and rightly applied.

Clover is valuable:

1. As a forage plant.
2. As a fertilizer.

As a forage crop, its special value is in the quantity and quality of the hay that it produces, and the rapidity with which it comes to maturity after being sown. Clover properly cured, is almost equal to good Timothy, for beef cattle, and much superior to all other hay, for milch stock. In pasture, the same relative values hold with the addition that, for hogs, clover is a grand specific, superior, perhaps, to all other grasses.

The specific value of Clover, however, lies in its wonderful powers as a fertilizer. In this respect it is unequalled to any crop grown on the farm. The different ways in which it adds to the fertility of land are chiefly:

1st. Shading the surface of the soil. Owing to its rapid and luxuriant growth it soon forms a close and heavy covering over the soil, that acts as a mulch in protecting it from the scorching rays of the summer sun. At the same time that the soil is protected the weeds are smothered out, and the land cleared up.

2nd. By aerifying and disintegrating the soil. Clover possesses peculiarly long and powerful tap-roots, that penetrate deep, loosening the soil and admitting the air. Thus rapidly changing the physical condition not only of the soil, but of the subsoil also.

3rd. By effecting important chemical changes, necessary to enrich the earth with plant food. Its abundance of foliage enables Clover to gather from the atmosphere immense stores of grass that give life to the plants, which its far-reaching roots send deep down into the earth. Thus a clover field becomes, as it were, a great reservoir for plant food. And clover itself becomes a great commissary, collecting food from the earth and the air for whatever crop that may follow.

4th. By preventing washing. The Clover mulch breaks the force of the hard beating rains while the roots hold the soil in a mat as it were, thus preventing it from washing.

5th. As a green manure. Perhaps no crop is so valuable for turning under in a green state, as Clover. In addition to the immense amount of rich vegetable matter in its abundant roots, the plant itself is extremely rich in all the materials necessary to the healthful growth of succeeding crops.—*Dixie Farmer.*

PRESERVATION OF FENCE-POSTS.

Any kind of timber, when employed for fence-posts, will be more than twice as durable if allowed to become thoroughly seasoned before being set in the ground. The durability of seasoned posts may be promoted, so as to make them last an age, by the application of a heavy coat of coal-tar to the portion buried in the earth, and a few inches above the surface of the ground. Some farmers set the ground-end in hot tar, and let it boil fifteen minutes. When cool, cover with coal-tar, thickened with ground slate or ground brick. The boiling stiffens the albumen and causes the pores to absorb tar. The coating prevents the action of moisture.

But this treatment of green posts would do very little good, and, perhaps mischief. A boiling in lime-water is also beneficial. Timber that is first water-logged and then well dried, lasts well; because the water soaks out the acid that hastens the decay. Others contend that the better way is to season the post well before setting it; and when the post-hole is filled within ten inches of the ground, to apply a heavy coat of tar and fill up with earth.

As fence posts always decay first near the surface of the ground, it is only necessary to protect the post a few inches above the surface, and about a foot below it. The timber begins to decay, usually, on the surface of the posts. Therefore, if the surface can be protected by some antiseptic material, posts will last a lifetime. Many kinds of timber will not last five years if set in the ground while green.—*Manufacture and Builder.*

ADVANTAGES OF UNDERDRAINING.

WARING, in his "Elements of Agriculture," states that the advantage of underdraining are many and important and enumerates the following:

1. It entirely prevents drought.
2. It furnishes an increased supply of atmospheric fertilizers.
3. It warms the lower portions of the soil.

4. It hastens the decomposition of roots and other organic matter.

5. It accelerates the disintegration of the mineral matters of the soil.

6. It causes a more even distribution of nutritious matters among those parts of soil traversed by roots.

7. It improves the mechanical texture of the soil.

8. It causes the poisonous excrementitious matter of plants to be carried out of the reach of their roots.

9. It prevents grasses from running out.

10. It enables us to deepen the surface soil.

By removing excess of water—

11. It renders the soil earlier in the spring.

12. It prevents the throwing out of grain in winter.

13. It allows us to work sooner after rains.

14. It keeps off the effects of cold weather longer in the fall.

15. It prevents the formation of acetic and other organic acids which induce the growth of sorrel and similar weeds.

SPLITTING RAILS.

Almost every farmer can split rails, but there is considerable science in the work after all. One man will rive them out with apparent ease, while another will tug away and exhaust his strength in a few hours. The reason of this difference is owing to the weight and shape of tools, and the knowledge of their use. One man makes a constant outlay of strength, while another will apply it only at an essential point, and that is when the beetle is descending and near the wedge.

An experienced rail-splitter tells us that the best maul is made of a knot, and should be of medium weight, not so heavy but that a man can swing it with ease. One iron wedge, quite slim, should be kept and used for starting the split; it is not apt to rebound, and if it should, it may be easily prevented by making a few checks with an axe near together, and starting the wedge between them, or by rubbing the wedge in dirt.

It is hard enough to split rails at the best, and we believe it a sin for any man to attempt the work without proper perquisites, for he has no right to exhaust physical powers and ruin his constitution by using poor tools, when the best can be obtained at a trifling expense. Great advantage is gained, when making rails, by opening large logs with a charge of powder.—*Ohio Farmer.*

BOYS ON THE FARM—The author of *Work and Play* pays the following tribute to farmers' boys:—Say what you will about the general uselessness of boys, it is my impression that a farm without a boy would very soon come to grief. He is the factotum, always in demand, always expected to do the thousand indispensable things that nobody else will do. Upon him fall all the odds and ends, the most difficult things. After everybody else is through he has to finish up. His work is like a woman's—perpetually waiting on others. Everybody knows how

much easier it is to eat a good dinner than to wash the dishes afterward. Consider what a boy on a farm is required to do; things that must be done, or life would actually stop.

GO TO FARMING.—A good living is what comparatively few men succeed in making in village or city life, and yet nothing is more easy of accomplishment on the farm. Besides, there is a pleasure in cultivating and embellishing the earth, improving and increasing its products, and thus adding to the aggregate of human happiness. Why, then, should young men hesitate to be farmers? It is both profitable and honorable. It is the nearest approximation to independence that man as a member of society can make. A gentleman farmer—and all farmers are or should be gentlemen—belonging to an order of nobility that is not indebted to place-holders for installation and may, if he chooses be ranked among the greatest benefactors of the human race. Let all the idle young men go to work on farms and quit seeking third and fourth rate clerkships. In short, go to farming and quit begging. —*Ex.*

FLOWERING MEADOWS.—A correspondent of the New England Farmer, writes: In 1864 I built a short dam and flowered a small meadow of three or four acres, letting the water remain on all winter. The ice carried the dam off in the spring and it has not been since rebuilt. The succeeding summer I found the hay crop increased from two o: loads to five; but the quality of hay was far inferior—most of the high ground grasses being killed out. Since that time the crop has gradually decreased till the present season, when I have secured the two ox-loads that it usually cut before the dam was built.

BOARDING FARM HANDS.—A great many farmers are coming to the conclusion that it does not pay to run their homes as boarding houses for hired help, and are building tenant houses and getting married laborers. Said a New York farmer: "I have always boarded my help until the present season but I shall never do it again. I built a tenant house yonder" and he pointed to neat little domicile twenty rods from his own "and it has paid its cost already in the added privacy and quiet it has enabled me to enjoy and in the great blessing of work for the women folks."

FARM GLEANINGS.

—It is said that if a tree is felled while in leaf, and allowed to lie until the foliage withers, the wood will be the soonest seasoned, as the leaves will draw all the sap before they die.

—Ditching and Draining may be continued this month with good success, as the season is so dry. The material taken from the ditches will often pay for the trouble of digging.

—Weeds are still to be persistently fought. They never surrender until the frosts of autumn, or even winter, shut down upon them. Every farm should be kept as free as possible from such pests.

—The *Farmers' Union* urges upon the farmers of Minnesota to make a general exchange of seed wheat next Spring, and not sow the same wheat on the same land which produced it for the past few years.

—Late feeding on pastures is the worst possible policy. It leaves the ground comparatively bare,

exposes the roots of the grass to the freezing cold and winds of Winter, by which a large per cent. of plants are killed outright, and the Spring growth is necessarily late, stunted and meager.

—The Flint (Mich.) *Citizen* says that Prof. S. Brickley Jr, had forty bushels of Diell wheat to the acre this year. His corn crop of 16 acres is considered one of the finest in his neighborhood.

—The Hillsdale *Standard* says that George R. Trumbull, of Wheatland, raised this season 225 bushels of black Norway Oats upon three acres of land sown with six bushels of seed, seventy-five bushels to the acre.

—A Massachusetts man has raised nearly three pecks of potatoes this year from one potato of the Early Rose variety. A Bucks Co., Pa., farmer raised this year a potato of the Early rose variety which weighed three pounds.

—Although the area of the State of New Jersey is about 200 square miles less than that of Massachusetts, it has 240 000 acres more of improved land and the cash value of the farms is more than double that of those in Massachusetts.

—A Scotch agriculturist says he has long been of the opinion that ball smut in wheat is a fungus propagated by adhering to the seed and unless this fungus is destroyed before being sown all the grains infected by it are sure to produce diseased ears.

—Four California turnips raised near Sonora weighed eighty pounds. One from the same patch weighed twenty-four pounds.

—The editor of the Canton (Ill.) *Register* claims to have seen a stalk of corn in Banner township, Ill., bearing nine perfect ears of corn.

—The *Practical Farmer* says that in Pennsylvania there is rather a prejudice against orchard grass, chiefly owing to its growing in bunches and rather coarse stem and leaf. These may be obviated by thick sowing—not less than two bushels to the acre. It ripens early, and for this season would make a good mixture with clover. Dairymen value it highly both for hay and pasture. Rapid growth, after frequent and close cropping or cutting is the speciality of orchard grass.

—An English writer says that for fourteen years in succession he never exceeded two pecks or sixteen quarts of seed wheat to the acre, and sometimes used less than one peck, and yet, in each of two of those years, he harvested fifty-six bushels of wheat to the acre and the average of fourteen crops in fourteen years was forty-four bushels to the acre. The seed was sown with a drill. One of the conditions necessary to the production of large crops from thin seeding he states to be sown of the seed early in the Fall that the plants may have a fair start before the setting in of Winter. Thorough drainage he also deems an essential condition.

Farmers are very apt to let their bright tools, especially plowshares, become rusty. Now, this cannot take place if these bright surfaces be kept either perfectly dry, or from contact with the air. The experiments of Dr. Calvert have proved that carbonic acid is the principal agent in causing metals to rust. This is always present in the air, but it cannot take effect upon any substance unless moisture is present. Also, and for this reason, we see tools that are left in the rain, or lying out at night, soon become rusty. Keep the bright surfaces, when not in use, painted with something that will

exclud moisture and air. Carbon oil and lamp black: are good, and easily removed when the tool is wanted.—*Interior.*

Some idea of the injury caused by insects to agricultural products may be formed from the statement that, from seventy-four tons of Spanish wheat stored in a granary, ten hundred-weight of beetles were screened out in one instance, and in another thirty-five hundred-weight were removed from 145 tons of American corn. The offender in both cases was a weevil, known as *Colandra orise*.

An exchange says that a fire proof fence can be made by following these directions:—"Make a wash of one part fine sand, and one part wood ashes, well sifted, and three parts lime ground up with oil, and mix them well together. Apply this to the fence with a brush—the first coat thin, the second thick. This adheres to the boards or planks so strongly as to resist either an iron tool or fire, and is, besides, impenetrable by water."

A correspondent of the *Rural Gentleman* is strongly in favor of ashes to prevent rust in wheat, and has proved them of great value otherwise. He says ashes operate as a manure upon the wheat, even in the limited quantity of eight bushels per acre; they strengthen the stem, giving it substance and solidity; and they afford just that kind of pabulum or food which is best for the development and perfection of the grain, and will, in his opinion, prevent the ravages of the fly in wheat.

The *Germantown Telegraph* says that of all the crops raised in the United States, Indian corn, or maize, which is a better name, is the most important and valuable, as it is the largest in extent, and commands the greatest cash value, and is applied to more useful purposes than any other. It may be regarded, too, as the most wholesome. Every animal, and every granivorous bird, from the partridge up, prefers it to all other grains; and as to man, if not popularly upon an equality with wheat, as an article of diet, it is next to it. In pork-making it is indispensable.

To aid farmers in arriving at accuracy in estimating the amount of land in different fields under cultivation, the following table is given:—Five yards wide by 968 yards long contains 1 acre; 10 yards wide by 484 yards long contains 1 acre; 20 yards wide by 242 yards long contains 1 acre; 40 yards wide by 121 yards long contains 1 acre; 80 yards wide by 60 1-2 yards long contains 1 acre; 70 yards wide by 69 1-2 yards long contains 1 acre; 220 feet wide by 198 feet long contains one acre; 440 feet wide by 99 feet long contains one acre; 110 feet wide by 360 feet long contains one acre; 60 feet wide by 726 feet long contains one acre; 120 feet wide by 363 feet long contains one acre; 240 feet wide by 181 1-2 feet long contains one acre.

The *New England Farmer* says that soils which are made up of less than fifty per cent. of sand, drained and plowed twelve inches in depth, finely pulverized and well-manured, will bring a fair crop every year, be the weather wet or dry.

A farmer in Clayton Co., Iowa, has raised three acres and a half of tobacco this season, the yield of which was a ton to the acre, and \$1,000 for the crop. He thinks this is better than wheat at sixty cents a bushel, and only sixteen to twenty bushels to the acre.

Charles Carter, went into Iowa county only six years ago, young, with his soul full of pluck, and

\$300 in his pocket. Now he can stand on the veranda of a fine residence on a slightly elevation, look over a cultivated farm of 600 acres worth thousands of dollars, all his own.

The highest farm in the world is said to be situated four miles from Sherman Station, on the Union Pacific Railroad. It has an elevation eight thousand feet above the sea-level. Vegetables and grain thrives well on the farm, and two hundred young apple trees have been set out as an experiment.

A California writer says:—"We find in California no wood for a lever or a pick handle, better in quality than a pine limb. In the whole western half of our country no timber is grown suitable to make a carriage, a wheelbarrow, or any kind of farm implement. All these are supplied from the East."

A lady writing from Salem, Oregon, says there is an abundance of the finest and largest cherries, apples, peaches, plums, and apricots. No wormy fruit there. The curculio is not known. The sky is very clear, and the air, though the thermometer is up to eighty-five or ninety degrees, is not oppressively hot. The nights are cool. No dew falls. She has put cloths on the grass at evening, and in the morning they were dry. Flowers of great beauty are found wild.

A correspondent of the *New England Homestead* has for the last twenty-five years, planted potatoes, not larger, on an average, than an ordinary hen's egg, and they yet produce as sound and as large a product as at first. Potatoes inadvertently left undug, if they do not freeze during Winter, invariably left produce sound ones, larger and more abundant than those kept in the cellar through Winter. This has lately suggested to him the plan of keeping potatoes excluded from the air from the time of digging and planting, which has invariably prevented rot.

The Santa Clara, Cal., *Farmers' Club* says:—"In dry seasons, the poorer soils yield better grain in proportion, than soil which is richer. It seems from the reports that have reach us, that the farmers generally have been astonished at the unusual quantity of grain from unpromising fields. The reason assigned is that the rapid growth of the straw in the better land, exhausts the moisture in the soil, before the head fills out, and hence a light shrivelled grain; while the upland, not so good, has produced less straw, and thus retained a sufficiency of its moisture to mature plump and healthy seed."

The Live Stock.

THE WINTER COAT OF HORSES.

Hairs and all strictly analogous formations are periodically produced, increase by continuous deposition of fresh matter at the base, and are at length shed, and replaced by a new, and precisely similar growth. When this happens simultaneously all over the skin, the whole coat is changed. The bird moults and comes forth with new and brilliant plumage, and the quadruped casts off its old covering, and acquires a new, fine and glossy garment. These changes are so timed, moreover, as to correspond to the varying temperature of the seasons.

The fine short hairs, when first formed, composing a comparatively cool covering for the summer heat, become, by the advent of winter, when they have acquired their full length, a warm and sometimes a shaggy coat, well adapted to defend the body against the rigours of this period of the year. In the horse, and especially in those that are natives of such a climate as ours, this change in the coat is very marked. The increased warmth of the winter covering is ordinarily set off, as it were, by a more glossy appearance. This is partly obviated by the practice of blanketing, whereby the moisture of the skin and an abundant secretion of its natural oils are promoted. The extra artificial covering is also in most cases advantageous as a fit and grateful protection to the animal, in the peculiar circumstances attending domestication and the service of man, against the extreme severity of our winters. In this climate, and with such stables as are found in most farm steadings, the blanket is of essential service, if it is properly employed; but too often it is irregularly used, and serious mischief results.—The blanket should not be used upon a horse at all in the winter, unless it is used faithfully. The great trouble in its use arises in this way. When a team has been driven a few miles to market, or the same distance for pleasure, blankets or robes are put on; but when drawing logs to the saw-mill, or doing other heavy work, they are made to haul large loads a mile or two, and return at a brisk trot, then stand unblanketed while another load is being put on. Or perhaps while driving upon the road—sleighing good, speed high—a friend is met and half an hour spent in talking; the horses cool suddenly, take cold, and the owner wonders how it happened. By such inconsiderate treatment more harm results in the use of the extra clothing than if it were omitted altogether. With due care, nevertheless, it is of essential service in the trying winters of Canada.

While the additional covering seems the consistent supplement of the warmer natural coat, it is somewhat strange that the practice of clipping or singeing the hair, before the advent of winter, so as to reduce the protection of the skin against the cold to its very minimum, should find many strenuous advocates. We do not think the custom adapted to this climate, though in the milder and moister atmosphere of England it may be really beneficial. The English hunter, and even, at times, the roadster, are called upon to make violent exertions, which will necessarily excite a profuse perspiration. If in this condition, with the natural thick winter coat of hair, the animal is brought into a warm stable, it will be a long time before the coat will become dry, and the horse is very apt to take cold, from long standing with a wet skin. The

clipped coat obviates this danger, 'saves the groom a vast amount of trouble, gives the animal a degree of life and sprightliness very agreeable to the rider, and apparently exhilarating to the horse, for the same reason that a human being if turned out into the cold with scarcely any covering would be forced to "step lively" in order to keep up the circulation of the blood. To our taste, the practice even in England is no improvement as regards appearance; we prefer nature's finish to man's fantastic docking and shaping. But tastes differ, and fancy in horse-flesh is not guided by artistic rules. In this climate, however, on the ground of the severe cold and the sudden and extreme changes of temperature, we cannot think the practice in question either safe or judicious.

A CHEAP AND USEFUL PIGGERY.

Mr. Editor,

There are very many farmers who consider that it is a very difficult thing to know how to provide a pig house that will be at once convenient, comfortable, and in the right place. The custom, and withal a very desirable one, of having a furnace or other means of cooking their food attached to it precludes the possibility of having it in proximity to any of the other outbuildings; while during winter many would like their pigs to have the run of their barnyards for exercise or otherwise. If your space will permit I will briefly describe a very cheap, simple, and portable piggery which may be placed during winter in the barnyard, and in summer may be hauled round into the pasture or any other field adjoining the house which the pigs may have the run of.

For half a dozen swine a space 8 feet by 10 is sufficiently large to afford them room for a lair and for feeding purposes.

Lay down 2 pieces 5x8 inches 12 feet long turned up sleigh fashion at the ends. For joists 2x4 is quite strong enough, with 4x4 for the end ones, fixed into the sills or runners in a dovetail form to bind them together.

Studs 2x4, 5 feet long, plates 2x4, rafters ditto. Board up the sides with half inch clap boards, and line it on the inside to prevent them from shoving the outside boards off. Roof in with good shingles nailed to strips, and floor it with inch boards well nailed down to the joists, which should not be more than two feet apart. The door, 27 inches wide, should be cut horizontally through the middle, the upper half hung in the usual way, the lower one swinging from the upper by means of hooks.

As for a courtyard, three common fence stakes set the form of a square with their corners secured to the house will answer. Now you may have a

boiling house attached to it furnished with an agricultural furnace, a mixing tub, and any other convenience which may be required. The feeding trough should be at the end to which the boiler house is attached, with the common board to slide their food down into the trough. The advantage of this arrangement, irrespective of its manifest cheapness, consists in the fact that it can be moved about and placed in any spot which may be deemed most convenient for the time being. And as for the materials used, 700 feet exclusive of the shingles would construct every thing about the main building, which could easily be moved about by an ordinary span of horses in slippery weather.

EXTRAORDINARY COMPETITION FOR THOROUGHBRED STOCK.

We have often had occasion to call attention to marvellous sales of thoroughbred horses. In 1866, as M. Blenkiron and Messrs. Tattersall are likely to have forgotten, the purchasers of racing stock went mad simultaneously all over the world. The yearlings disposed of during that culminating year of the Turf's "Hasting's Era," on the occasion of the Middle Park Sale, and at the Hampton Court Paddocks, brought the largest average ever realized by Mr. Blenkiron or by the managers of the Royal Stud. Scarcely had Englishmen recovered from the astonishment provoked by the Duke of Hamilton's venture of 2,590 guineas for the Lady Elcho colt, when tidings reached us that at Maribyrnong, near Melbourne, an Australian breeder had sold 43 thoroughbred animals of all ages—and among them nine foals—for the enormous average of £500 or £600. It has passed into a proverb that in all Anglo-Saxon nations, wheresoever their home may be, highbred horses are better housed than low-born human beings, and command prices which, the days of the Crusaders, would have sufficed for a King's ransom. But the commercial supremacy of that peerless animal, the British thoroughbred, is already seriously menaced. Within the last two decades, another four-footed rival has arisen which threatens to dethrone the sons and daughters of Stockwell, Beadman, and Parmesan from their pride of place. It is now some sixty years since one of England's choicest animal products—the pure bred—"short horn"—first sprang into existence. In 1840 the first great price ever given for a high-born bull was paid to Mr. Collins, for a magnificent animal which brought him what was then deemed the unheard of sum of £1,000. About the same time a famous herd was started in Yorkshire, which has filled America and Australia, no less than Europe with its fame, and has produced sons and daughters to which for many years the premiums at the Royal shows have constantly been awarded; while the bulls are annually let out for the enormous rent of £200 to £300. Wherever in England, Scotland, Ireland, France, Germany, Russia, the United States and Australia, short horns are bred, the name of Mr. C. Booth, of Warlsby, near Northallerton, is a household word. Nor does the other great herd of England, that which the late Mr. Bates raised near Irlklevington, upon the confines of Yorkshire and

Durham, pale its ineffectual fires when compared with the Warlsby prodigies. Between them, Mr. Bates and Mr. Booth divide the palm of short-horn supremacy. Other herds there are which occasionally call for notice, such as the Townley, the Knightley, or Spencer breeds. But whenever and wherever human names are proudly mentioned in connection with short-horns, the race for superiority is between the two famous Yorkshire breeders; while any other stock-raiser who attracts attention—be it the late Sir Charles Knightley or the late Lord Spencer, or Sir William Maxwell Stirling of Keir—is spoken of as coming next to Mr. Booth or Mr. Bates, and as *proximus his, longo set proximus intervallo*.

Rather more than forty years since Ireland caught the contagion of breeding "pedigree cattle." In 1829 Mr. Robert Holmes, by introducing into our sister island some excellent specimens of thoroughbred horses and pure bred cattle, laid the foundation of a trade which will probably make the trade of the Emerald Isle richer than Orms or Ind before many years have passed. The thoroughbreds imported by Mr. Holmes has given us many famous Irish race horses, which have graduated with distinction at Epsom, Newmarket and Doncaster. But latterly the British Turf has seen no Harkaways, no Barons, no Faugh-a-Balagh's, and no Mincepies; nor has the laudable effort of Lord Mayo to establish a large stud farm at Palmerston been hitherto successful. The importation, however, of short horns into Ireland, of which Mr. Holmes was the originator, has already born noble fruit, and last week it gave us two specimens sale in County Meath and County Donegal that have scarcely been surpassed by any record which the books of our two great short horn auctioneers—Mr. Straiford and Mr. Thorton can exhibit. It has long been the fashion across St. George's Channel to speak of Mr. Thomas Barnes, of Westland Kells, in Meath, as the "Booth of Ireland." The late Mr. Barnes—for he died last spring—was a devout worshipper of shorthorns at the knee of Mr. Holmes, by whose advice he bought two animals of the renowned Matalini tribe. Mr. Barnes' next step was to hire a celebrated bull named Hamlet from Mr. John Booth, and in rapid succession many of the best bred cattle to which Warlsby gave birth followed Hamlet across the Irish Sea. When in 1853, the heard of Mr. Holmes was dispersed upon the death of its owner, Mr. Barnes was admitted to be the owner of the finest cattle in Ireland. His blood was much sought by English breeders, and in 1861 Lady Pigot astonished the world by giving £500 for a Matalini heifer named Victoria. Within the last ten years, the celebrity of the herds owned by Mr. Barnes in Meath, and by his friend Mr. Grove in Donegal, has been justly and universally admired. Nor is it of much moment that a few Irish maniacs should try to blow up the *George the Fourth Obelisk* at Kingstown, when simultaneously we can point to two Irish sales of shorthorns in which 88 head of cattle have been sold at an average of over £100 apiece, and in one of which a roan yearling heifer of pure Booth blood has brought the remunerative figure of £750. At the moment when, in 1866, Mr. Lowe was thundering, in his anti-reform speeches, against the perils of democracy and the insecurity of property in Australia and the United States, one of the Melbourne papers quietly quoted the prices fetched at Maribyrnong by Mr. Fisher's thoroughbred mares and yearlings, and

asked whether property was insecure or in jeopardy where such figures could be realized. When next Mr. Martin and Mr. Butt shall tell us that the value of Irish property is declining, it will be sufficient for Mr. Gladstone merely to point to these great sales of cattle in Meath and Donegal, and to enquire whether Fenianism or nationalism can be making much headway in a country which can exhibit such figures as Mr. Thornton secured under the hammer on the 23rd and 25th of August, for Mr. Barnes and Mr. Grove.

Nothing can be more desirable than the widest publicity for two Irish cattle sales, of which the prices have never been surpassed except in England and which have rarely been surpassed even in England itself. Just as our thoroughbred horse-dealers exultingly point to Mr. Blenkiron's or her Majesty's average in 1865, so do men learned in the herd-book quote the historical sales of short-horns at which Mr. Bates' Duchesses, Mr. Booth's Great Commanders, Colonel Townley's Royal Butterflies, have realized fabulous figures. To show how rapid has been the rise in the value of short-horns, it will suffice to state that Mr. Bates died in 1850, and that his stock, sixty-eight in number fetched an average of £67 per head. The principal purchaser at the Kirklevington sale was the late Lord Ducie, who himself died in 1853, when his herd of sixty-two heads brought an average of £151 apiece. This high figure was principally due to the competition of our Transatlantic kinsmen, who have since astonished us by the magnificent sums at which they acquire "Duchess blood." But the two champion sales took place in 1867 the stock of Mr. Betts, at Preston Hall, in Kent, brought an average of £180 for sixty-three head; and, upon the death of Mr. Eastwood, his fifteen head of cattle fetched, in Lancashire, more than £181 apiece. It has, however, been reserved for an English nobleman and a Canadian millionaire to electrify us by the magnitude of the sums which they have not scrupled to give for the blood of Booth or of Bates. In 1870 Mr. Cochrane, of Montreal, gave to Captain Gunter, of Weatherby, no less than 2,500 guineas for a couple of Duchess heifers. The two precious animals were conveyed across the Atlantic waste of waters to Canada, where they gave birth to two heifer calves, which are destined in October next to find their way back again to the home of their parents. During the past winter Lord Dunmore, who within the last three years has become the most spirited of our English stock raisers, sent an emissary to Canada and purchased the two Duchess calves for 2,500 guineas, or in other words, at the same figure which in 1870 Mr. Cochrane had given for their dams. The good wishes of all who admire pluck will accompany these two horned beauties when they traverse the stormy Atlantic in October next. But we have said enough to show that Mr. Blenkiron, Sir Lydston Newman, and other breeders of horses, must look to there averages, unless they wish to be left behind in the race of prices by Booth bulls and Duchess heifers. Australia, the United States and Canada, no less than Great Britain and Ireland, are all entered for the competition race of short-horn acquisitiveness. Nor is it the least hopeful of anguries for our trouble and erratic sister island, that the animal product which of all countries Ireland is best qualified to raise is daily becoming a greater object of attraction in every corner of the civilized globe.—*London Telegraph.*

TAME CODFISH.

Mr. Buckland, in a recent number of *Land and Water*, gives an interesting account of a visit paid by him to a pond containing tame codfish at Port Logan, Wigtonshire. The property in question belongs to a gentleman by the name of McDougall, and consists of an amphitheatre about one hundred feet in diameter, hollowed out of the solid rock by the sea. All egress from this is prevented by a barrier of loose stones, through which water passes freely. On approaching the shore of the pond, many codfish of great size were seen; and when a servant woman who had charge of the fish approached with some mussels, the surface was perfectly alive with the struggling fish. They came close to the edge, and after a little while permitted Mr. Buckland to take hold of them, scratch them on the back, and play with them in various ways. Among other experiments tried by him was that of holding a mussel in his hand, and allowing the fish to swallow his hand in the effort to obtain the mussel. These fish furnish to the proprietor ample supply of excellent food, the flavor being considered much superior to that of the cod taken in the open sea.—Whenever needed for the table, a selection can easily be made from the most promising of those at hand, and the fish secured without any difficulty.

A correspondent of *Land and Water*, referring to this account of the codfish at Port Logan, remarks that when he visited the pond, fifty years ago, there was a blind codfish in the pool, which the woman who had the pond in charge used to feed with limpets taken from the rock. When this fish came to the surface with the others, she caught it in her fingers, sat down with it upon a stool, having a pail of the limpets, shelled in her lap, with which she fed it out of an iron spoon, the fish seeming to enjoy it very much. After feeding, she returned it to the pond. The writer avers this to be a fact, although he evidently scarcely expects it to be believed.—*Harper's Magazine.*

WINTER FEED FOR MILCH COWS.

Hay for the cow in the winter is the main food, and there is nothing so good as early cut hay, or that can or will take its place. A cow will do well on hay if she is dry, and hay plenty and good. But here comes the pinch—plenty and good. A cow that has all the hay she can eat from morning till night, given in three or four feeds, has plenty, and if the hay is green and fine, and will tie in knots without breaking or shaking, we will call it good; if not we call it poor, and the cow needs better feed if she is dry. But for cows in milk, they require something more than this good hay added to their feed.

Now, we believe that feed that will make the most beef in the shortest time, will also make the most and best milk in the shortest time. This is our experience. We would say feed corn meal and roots mixed, and would prefer the potato to any other root. But the weather has a great deal to do with feed. Corn meal being a hot food, or generating heat, and roots cool food, to feed right we should mix more meal in cold weather, and less in warm weather, with the roots.—*Country Gentleman.*

TROUBLES IN BEE-KEEPING.

At the meeting of the American Bee-Keepers' Association at Cincinnati, the sixth topic discussed was: "What are the troubles to be met with in bee-keeping?"

Rev. E. Van Slyke of New York, Rev. W. F. Clarke of Canada, Messrs. A. F. Moon of Michigan, N. C. Mitchell of Indiana, R. Porter of Minnesota, E. Gallup of Iowa, Dr. L. J. Dallas of Kansas, Rev. L. L. Langstroth of Ohio, Mr. A. H. Hart of Wisconsin, and others, spoke on this subject. During the whole discussion, the moth was mentioned but once, and then barely alluded to, while Mr. L. C. Wait, in a paper which he read, said that the moth was a benefit to apiculture, as it caused the bee-keeper to look after and attend to his bees; and that any man who could not or would not give them the little attention necessary to keep them in a condition to repel the moth, ought to loose them. It is only when the colony is weakened down below a living standard that the moth can gain a footing in the hive, and when this is the case, all the moth traps in the world will not keep them out.

Bees become weak from several causes;

1. If it be a bad honey season, colonies dwindle from the fact that when no honey is being gathered the queen ceases to lay eggs, and the natural mortality among the bees reduces their number rapidly. Feeding will remedy this.

2. A queen becomes too old to lay enough eggs to keep up the strength of the colony. The remedy is to furnish a young queen and destroy the old one.

3. Colonies from many causes become queenless. Remedy—give the bees a queen, or means to rear one.

4. A queen fails in being fertilized, and produces only drones. Substitute a fertile queen.

5. If honey is very abundant and the bees have no room to store it any where else, they will fill up the brood cells, even destroying the eggs, and brood in them, and leave the queen no place to lay. By Fall we have a hive full of honey and not bees enough to guard it. The remedy here is to use the mel extractor, or give more room in the proper place.

9. If bees be permitted to swarm more than once, or swarming is late, a colony may fail to recover its strength. This may be remedied by returning the swarm, or by feeding.

Anything that will reduce the number of bees below a working standard, produces disorganization and places the colony at the mercy of the moth. In a majority of instances the bees would all die without the assistance of the moth in hastening it.

—D. L. Adair, in *So. F. mer.*

THE AGE OF BEES.

Mr. Quimby, in *Hearsh and II. me*, says:—"Many erroneous ideas are prevalent concerning the age of bees. The queen will live a number of years, averaging about three. The workers are supposed by many to live as long, but this is a mistake. They never live a year, and in the busy season many die, and are replaced every few weeks.

Drones live a precarious life, never surviving the Summer and are often destroyed at the first scarcity of honey."

HOW TO CHOOSE A COW.

On this subject, the *Working Farmer* says:—"There is always some risk in buying a cow, of whose previous character and history we know nothing, for there are no infallible signs of excellence. A rough, coarse, ill-shaped cow is often a noble milker. Yet there are a few points, generally agreed upon by experienced farmers, which it is well to consider before purchasing. A small boned head and light horns are better than large. Long legs make too wide a gap betwixt udder and milk pail, and long-legged cows are seldom quiet feeders, but wander about too much. A slender rather than a thick neck, a straight back, wide ribs and broad brisket, are to be sought for. The body of the cow should be large in proportion to head, neck, and legs, though not excessively large; and the hind quarters if large out of proportion indicate good milking qualities. Medium sized cows, all things considered, prove the best milkers for the amount of food they consume. The color of the hair has probably nothing to do with the milking qualities, and good looks should be regarded but little in purchasing dairy animals. As to the color of the skin, a bright yellow, approaching that of gold coins, creamy color within the ears—this and good rich milk are very apt to go together; and, withal, a soft flexible hide, loose over the ribs and rump, is also to be sought. The udder should be large, soft, and full of veins, which ramify over it, with full sized milk veins stretching forward along the belly, and the teats be large and not crowded together. Test the cows disposition and inquire about it. Irritable and nervous cows are unpleasant to handle, and almost always scanty milkers. Something can be ascertained from the looks and motions. Large, mild eyes, easy quiet motions when driven, and gentleness when handled, indicate good nature. What butchers term 'good handling' is an important quality in a milch cow, for it indicates not only good milking properties, but easy fattening, when services in the dairy are over."

HARNESING A HORSE CORRECTLY.

When harnessed correctly, a strong horse is a powerful animal; but by an imperfect adjustment of the gearing, many strong teams are shorn of half their strength; and many are often worried more by an improper fit of the harness, or by a decidedly bad attachment to the vehicle they are drawing, than by all the service they perform. But few teamsters have ever been taught how to harness a horse correctly, and fewer still have learned that there is a right and a wrong way to hitch a team to a carriage. When a harness is taken from the shop every part should be adjusted to fit the horse that is to wear it. The backband should be let out or buckled up until it will be neither too long nor too short when the animal is drawing a load. Many a good horse has had a large sore made on his back simply because the backband of the harness was buckled up too far.

The breeching should also be adjusted properly, so that the horse will not seem like a man in a boy's coat, nor like a colt wearing the harness of a full grown horse. The collar should fit as neatly to the animal's neck as an easy pair of shoes set on one's feet. The collar should never be so long that a man can thrust his arm easily between the neck of the animal and the lower end of the collar. Many horses, especially old ones, when thin in flesh, require collars so small that they cannot be put over the heads of the horses that wear them. It is of eminent importance that the proprietors of teams should see such minor points, and provide collars that are open at the top or bottom. Every horse should have his own collar and harness, as much as every man his own boots and coat.

The lines are often adjusted in such a manner that the heads of both horses are hauled away from each other so far that the team cannot travel easily. At other times their heads are drawn too far inward toward each other. The lines should be adjusted so that the heads may be held just as far apart as the length of the double whistle-tree. When a team is attached to a carriage or lumber wagon, the breast-straps, stay-chains, or neck-yoke should be so adjusted that the pole or tongue cannot strike either horse. The tongue is often allowed to have so much play that it whangs the arms or shoulder of the team with terrible force when the vehicle is being drawn over rough ways. The neck-yoke, straps or tongue-chains should be drawn up so as to elevate the tongue between the shoulders, where the lateral jerking or thrusting will be received by the gearing on the necks of the animals rather than against the unprotected arms or shoulders of the team.—*Practical Farmer.*

RAISE MORE DUCKS—I could never understand why our farmers through the State did not keep ducks; as a matter of profit they are more profitable than hens. It may be the impression that in order to keep ducks a person must have a pond or stream of water near by, has deterred many from keeping them, but there is no need of anything of the kind. It is true that it is better to have a pond or stream,—but you can raise ducks just as well elsewhere. I know of parties that are very successful in raising them—they have only a shallow tub set in the ground and filled from the pump occasionally. In fact, the trouble in raising ducks and about the only one, is letting the young ducks go into the water too soon after they leave the nest. When I speak of the profits from ducks, I do not have reference to the common duck that is seen every day. I mean a breed of ducks that will weigh twelve pounds to the pair, alive, such as the Rouen and Aylesbury, and both excellent layers, easily kept and reared, and being very large and excellent for the market, and it costs no more to rear them than the common duck that will only weigh on the average about eight pounds to the pair. The Rouen is a very handsome duck in plumage; the drake has a glassy green head and neck down to a white ring on his neck, and the lower part of the body is a beautiful green brown gray, and shaded with brown, on the back. The duck is of a beautiful brown with about every feather shaded on the outer edge with black. They are acknowledged the best of the varieties, laying very early and continuing through the season, and

late in Winter. The Aylesbury is pure white, both the duck and drake, and about the same size as the Rouen. Both becomes very familiar, and being very large and heavy, do not care to roam as much as the common kind.—*Maine Farmer*

HOW TO MANAGE A HORSE—A groom mounted on a high mettled hunter, entered High street of Coldstream, and when opposite Sir John Majorbank's monument the horse began to plunge and rear to a fearful extent, swerving to the right and then to the left, but go forward he would not, nor could all the exertion of the groom overcome this obstinacy. The street was filled with people expecting to see the animal destroy himself on the spikes of the iron railing round the monument, when Mr. McDougall, saddler, walking up to the groom, and said: "I think, my man, you are not taking the proper method to make the horse go; allow me, if you please, to show you a trick worth knowing." "Well," said the groom, "if you can make him go, it's more than I can do," when Mr. McDougall took a piece of whip cord, which he tied with a knot on the animal's ear, which he bent gently down, fastening the end of the string to the check buckle of the bridle; this done, he patted the horse's neck once or twice and said, "Now let me see you go quietly home, like a good horse." Astonishing to relate, the horse moved off as gently as if nothing had happened. Mr. McDougall says he has seen horses in London which no manner of force could make go, while this mild treatment was always successful.—*Kelso Chronicle.*

HOG CHOLERA CURED.—We find in the last monthly report of the Department of Agriculture, the following about hog cholera in Georgia, from one of its correspondents. "The hog cholera has prevailed to a considerable extent among the hogs in Dooley county, and no remedy for a cure has yet been discovered. We believe that it is contagious; and the best preventative I have found is the free use of spirits of turpentine, mixed with tar and a small quantity of camphor. It can be used either externally or internally. I prefer the latter, by soaking corn in it for ten or twelve hours. I have never failed in arresting the disease."

LIVE STOCK GLEANINGS.

—Four cattle of wonderful size were exhibited in a side show at Kalmazoo during the Horse Fair. One pair of twins, five years old weigh 3,230 and 2,780 lbs, respectively. A pair of oxen eight years old, weigh 4,210 and 3,999 lbs.

—The *Ohio Farmer* says that many farmers, for an extra dollar or two, sell their best calves to the butcher and raise such as are not so valuable, and think they gain by the practice; but the few dollars they think they make would in many cases be worth at the milking age of the stock if the best had been kept, more than thirty dollars, instead of a dollar or two.

—A correspondent of the *Rura New Yorker* says:—"Flies have been so bad on my horses that I found it almost impossible to work them. I took smart weed and soaked them in water, and in the morning applied it to the horses with a sponge, all over them, and found the horses to work along

without any further trouble, the flies not annoying them in the least."

—The cattle in the neighborhood of Wandena, Fayette Co., Iowa, are dying of a disease that manifests itself by the animals scratching and rubbing the jaw until they exhibit symptoms of madness, by running and bellowing, and invariably die in about twelve hours. Milch cows appear to be the most subject to the malady, which seems to be spreading. Various remedies have been tried to arrest the disease without effect.

—An exchange says that rusty straw is one of the most dangerous of blood poisons. It induces distemper, it vitiates the blood, reduces the condition of the animal, takes away the appetite, and opens the door for colic, skin diseases, swellings, and fevers. It is only fit for litter.

—A correspondent of the Wilimette (Oregon) Farmer feeds his stock a tablespoonful of sulphur to each animal, with their salt, once in two weeks. When he has done so, no vermin has troubled them, and his cows have not been affected with garget, nor his sheep with grub in the head. He has practiced this twenty years.

—The *Western Farmer* says it is now claimed that the terms of Dutch and Holstein as applied to cattle are not synonymous; that the cattle in this country so called are, so far as known, all Holsteins, and that this name should be used to the exclusion of the other as the cattle properly called "Dutch" belong to quite a different breed.

—For cramps in horses, an exchange recommends the rubbing of the affected parts with a wisp of hay for ten minutes as beneficial; and should friction alone not remove the tendency to cramp, the parts affected should be rubbed occasionally with a solution of camphor and olive oil, in the proportion of one part of camphor to four of olive oil.

—Recent observations in Prussia have shown that the eating of green flax by cattle may be seriously injurious. A well-kept cow suddenly became ill, with high fever and violent diarrhoea, accompanied with trembling of the muscles, anxious look, drying up of the milk, and a lowering of the temperature of the extremities. On enquiring into the cause of this sudden attack, it was found that the animal had eaten a great quantity of the weedings of a flax field. Strict diet, without any medicine, improved her condition during the day, but the next morning, epileptic convulsions ensued, her owner had her killed, when, on examination, solid masses of flax were found within the stomach.

—Messrs. P. & G. F. Martin, of Monroe Co., New York, writes to the *County Gentleman*, that their eighty-five American Merino sheep clipped, in May last, 1,203 pounds of unwashed wool, that sold, as soon as taken off, for thirty cents per pound. Their flock consists of seventy ewes and fifteen rams; the ewes averaging thirteen and a half pounds, and the rams seventeen. Forty loads have been raised from that portion of the flock old enough to breed. The ewes were fed, last Winter, clover hay, without grain, until lambing, when they were fed grain and root, additional. The rams had oats and wheat bran with hay.

—A man in Green Co., Ill., had recently lost five valuable horses from some disease heretofore

unknown in that section of the country. The disease first shows itself in the weakening of the legs of the horse attacked, which increases until the animal is unable to stand, and soon thereafter he dies.

—The Springfield (Ill.) *Journal* says that complaints come from various sources concerning the ravages of bees upon grapes. The hot dry weather seem to have destroyed all other sources of food, and in consequence, the bees swarm in every vineyard. Some grape-growers have already suffered severely.

—In Brittany, if a person who keeps bees has his hives robbed, he gives them up immediately, because they never can succeed afterwards. This idea arises from an old Breton proverb, which says, being translated, "No luck after the robber." But why the whole weight of the proverb is made to fall on the bee-hives, it might be difficult to determine.

In other parts of France, they tie a small piece of black stuff to the bee-hives, in case of a death in the family; and a piece of red on the occasion of a marriage—without which, it is believed, the bees would never thrive.

Although nothing is more simple in theory and practice than the history and care of bees, it yet requires constant and unremitting attention, if we aim at either instruction or profit. Can anything be well done and to advantage without these?

—The *Utica Herald* says that the farmer's of Dutchess Co., N. Y., are greatly excited over a disease of singular virulence which has broken out among the cattle on some of the farms. The animals when first taken seem to drop their heads, refusal to partake of food; when urged to walk about, they do so with much apparent difficulty, dragging their toes on the ground, expiring after a short sickness, ending their lives with fearful gasps for breath. It is not yet known the nature and seat of the disease.

—We see it stated in an exchange that horse radish is an excellent condiment to mix with the feed of cows to give them an appetite, and make them sleek and thrifty. It should be fed freely to all animals that are not well, and it will be of great service to working oxen troubled with heat. If given to cows in doses of a pint a day, mixed with potatoes or bran, it will prevent or relieve them of the disease called cake in the bag. Few animals refuse to eat it, and some will eat greedily as much as half a peck at a time.

—As a remedy for lice on hogs, a correspondent of the *Rural New-Yorker* says:—"Put about one gill of kerosene oil in any old dish, and with a paint brush or old woollen rag rub the oil up and down the back of the animal and behind the fore leg on the flank. Be particular about the two last places, for it is there the lice deposit their eggs which, if not destroyed, will hatch out in about five days. No one need fear to use the oil freely, as it will not injure the hog in the least. Hot water will not kill these lice, for I have seen them crawl after the hog had been scalded in a barrel after being butchered."

The Garden.

THE SELF-TAUGHT BOTANIST.

One day in spring, about the years 1725, John Bartram, after ploughing awhile in one of his fields in Pennsylvania, paused under the shade of a tree to rest. While sitting upon the grass near his panting beasts, he cast his eyes upon a daisy, which he plucked mechanically, and began to look at it with a certain languid curiosity. The more he looked, the more interested he became, observing the various parts, some perpendicular, some horizontal, some white, some yellow; and he fell to wondering what could be the purpose and functions of the several parts of the flower. For the first time he was struck with his ignorance of the common things about him.

"What a shame it is," said he to himself, "that I should have employed so many years in tilling the earth, and destroying so many flowers and plants, without being acquainted with their structures and their uses!"

In relating the events of this day, he would declare his inability to account for such thoughts. He said it was like an inspiration, for he had never had such reflections before in his life. After pulling his daisy to pieces, and musing on the parts awhile, he took hold of his plow again and resumed his labor.

But his new thoughts did not cease, and a strong desire arose within him for some knowledge of the plants and flowers around him. When the bell summoned him to dinner, he related these circumstances to his wife, and made her acquainted with the desire for knowledge which had sprung up in his mind. She did not encourage him. He was not rich enough she said, to spend any of his time in such pursuits, and she advised him to stick to his farm, which, being recently hewed out of the wilderness, demanded all his time and care.

But he could not overcome his new desire. It haunted him continually, whether he was at work or at rest, at table or in bed. He resisted the impulse for four or five days, and then, finding his desire unconquerable, he hired a man to plow for him, saddled his horse, and rode to Philadelphia. Arriving at the city, then a town of ten thousand inhabitants, he went to a book store.

Not knowing what book to ask for, he told the bookseller his story, and said he wanted a book which would give him the botanical knowledge of which he was in search. The bookseller provided him with a work upon botany written in Latin, and a Latin Grammar as well. This was sorry comfort to a mind so eager, but he was fain to put the books in his saddle-bag and return to his farm with them. There was a school-master in the neighborhood who taught Latin, and under him this enthusiastic student made such progress that in three months he found himself able to translate, slowly and with difficulty, the Latin, of his botanical work.

Then he began to botanize all over the farm. In a short time he became acquainted with every plant, shrub, tree, and flower in his neighborhood. Then, as opportunity favored, and the work of his farm allowed, he made botanical tours in Maryland, Pennsylvania and Delaware, being entertained

by the members of the religious body to which he belonged, the Society of Friends. Ere long, his circumstances improving, he extended his journeys into Virginia, the Carolinas and New York, until, in fact, he was acquainted with the nature and habits of every plant that grew between the Alleghany range and the Atlantic ocean, and had recorded his observations with scientific exactness.

He owned the leisure which enabled him to pursue these extensive studies to his excellent treatment of his servants and his superior management of his farm. At a time when almost every other farmer of any wealth cultivated his land with negro slaves, John Bartram set his negroes free, paid them eighteen pounds a year wages, taught them to read and write, sat with them at the table, and took them with him to Quaker meetings. One of his negroes was his steward and man of business, who went to market, sold the produce, and transacted the business of the farm and family in Philadelphia. Thus, during the last thirty years of his life, John Bartram was able to devote almost his whole time, and a large portion of his revenue to beloved science.

Early in his botanical career, he conceived the project of establishing a botanical garden in which to deposit and cultivate the plants which he collected during his tours. On the beautiful Schuylkill, three miles from Philadelphia, he bought five acres of ground for the purpose, upon which with his own hands he built a large and comfortable residence of hewn stone. In the course of his long life he gathered such a variety of curious plants American and foreign, that his garden became one of the chief curiosities of the country, to which foreigners of distinction were taken.

Bartram was appointed botanist to the King of Great Britain, at a salary of 50 pounds a year,—one of the wisest expenditures a King ever made, for it introduced into English parks and gardens every vegetable production of North America which could be of value. Nor did he confine his services to Great Britain. He sent American plants and seeds to European botanists.

EARLY TULIPS.

Doubtless these showy flowers will some day or other be grown extensively by all classes, but at the present day they are neither grown nor appreciated one-tenth part so extensively as they should be; one-hundredth part would, perhaps, be nearer the mark, for it is quite a rare occurrence to meet with a few beds of tulips, even in gardens of considerable pretensions, instead of their occupying a position in the parterre worthy of their merits. Here we must grow large numbers of Spring flowering bulbs of all kinds, but the tulips, taking all things into consideration, are the most useful, and they are grown by thousands. Crocuses and hyacinths are very well for flower-garden decorations, but the flowers of the first named are of such short duration that their beauty is past almost as soon as it is expanded; whilst the latter are hardly showy enough for the time of year in which they flower, besides being expensive. The stock also requires regular renewal of purchase, as the bulbs degenerate very rapidly, and after the third year are of very little use. On the other hand, with moderately careful attention the stock of tulips will increase,

so that, after the purchase of stock in the first instance, no further outlay is required, excepting where the cultivator is anxious to add new varieties to his list. The collection here comprises examples of all the best kinds of out-door work, and when the flower garden is at its best, no arguments from me are wanted to convince those who see it that in the tulip the flower gardener has a most valuable aid. To describe the magnificence of the display which tulips, when properly arranged with respect to the heights and colors, are capable of producing, is impossible, and I will not attempt it.

We have adopted a plan somewhat different to that pursued in many gardens, and instead of planting the bulbs thickly in beds by themselves, we first plant the beds with such things as white arabis, yellow alpsium, blue forget-me-nots, etc., and then plant the bulbs between the other things, at a distance of nine or ten inches apart. Each bed is filled with one color, or, at the most, two colors; and beds filled with plants producing yellow flowers are filled with scarlet flowered tulips; with white flowers, rose and pink tulips; blue flowering plants, white tulips, and so on; and the effect produced is at once most effective and pleasing. The advantage of employing them with other classes of plants are many, and so obvious that it does not need any lengthened explanation. In the first place, the beds have a more cheerful aspect throughout the Winter, when the surface is carpeted with green foliage; secondly, the foliage of the carpeting plants affords a very efficient protection from the cold winds just as the young leaves are peeping above the surface of the soil; and thirdly, the brilliancy of the flowers is brought to better advantage by the groundwork of white, yellow, pink, and crimson, in much the same manner as the appearance of precious stones is increased by their golden settings. The carpet serves a fourth purpose, for it not only keeps the beds gay until the time for filling them with Summer bedders, but it keeps the old flower stems out of sight, and the bulbs are able to complete their growth without being an eye-sore to any one.—*Gardeners' Magazine*

WINDOW GARDENING AND HOUSE PLANTS.

Plants which last a considerable time in bloom, and which, when out of bloom, form pretty objects, are not very numerous, and a little care in their selection may be useful. The most ephemeral plants if bought before they are fully bloomed will last some time before the unbloomed flowers are developed, and therefore no one ought to be captivated by a plant in full flower, as it will soon lose its attractions. Geraniums are general favorites. If one flower has opened, so that the character can be seen, no more need be wished for at the time of buying, for it is better to have all the blossoms open with the purchaser, than for him to pick out a full blossomed plant which will soon fall into the "sere and yellow leaf." But there are many plants better than geraniums for window gardens. Mignonette lasts a considerable time, but it is not grown for its beauty, but its fragrance. The Fuchsia ought to continue in bloom for a long time, but it requires the greatest care in purchasing, and managing after it is purchased. If it comes out of a warm house, the change of temperature will throw off every bloom. The same thing will happen if the plant receives too much water, or is allowed to

stand in a wet saucer. Too much wet is the bane of house plants.

The Cineraria is a prolific bloomer, and if it can be procured when the first flowers are beginning to open, it will bloom for several weeks. Cockscombs are lasting flowers, and when properly dwarfed, make ornamental window plants, but they are considered too common for choice collections. China and other pot roses seldom bloom well in close cities, and generally fade soon after being obtained from the greenhouse. Evergreens form excellent ornaments for the balconies of houses in winter, but purchasers of suitable plants for this purpose, generally find that they do not stand the Winter well. The fact is, that those brought to market are merely taken out of the ground and put into pots, the only care of the sellers being to have them look well until they are sold. Evergreens intended to live, must be established in pots; and when this is the case, they may be grown for years in large pots or boxes in city balconies, provided hardy sorts are selected and watering and adding fresh mold is properly attended to. The shifting into larger pots or boxes must be regulated by the growth of the plants. The Dwarf Box when taken care of, makes one of the best evergreens for balconies and it has the merit of being easily grown, but is liable to damage from severe frost. There is a variegated variety which is very ornamental.

The best way of managing window and balcony plants is to keep them, upon the whole, rather dry than otherwise; never to let them flag, but never to let them be soddened with water. A small syringe to wash dust and insects off the leaves will be useful. The watering should always be done with rain water, if it is available; if not, soft water of some kind should be used. Cold, hard water deteriorates plants rapidly. Whether it is the cold, or the absence of that peculiar nourishment which is supplied by soft water, has not been ascertained, but the evil effect to such, of the cold bath is well known. In selecting plants it is always better to go to the nurseries than to the markets; for in the former the plants may be seen in the places where they were grown, and there is a large number to choose from. There the buyer will have a chance to select those which are coming into flower and to reject those which have arrived at perfection.—*Western Rural.*

WILD STRAWBERRY.

Mr. J. J. Van Kirk, of Ramsayburg, N. J., has a fine strawberry bed which he says has yielded abundantly the last two Summers, all from a few wild plants that grow on uncultivated ground. Four years ago he planted them in the garden, and by a little attention and transplanting both old and new plants both Spring and Fall, he had them in fine bearing condition in two years from setting. The past season, and the one previous also, the first picking averaged in size 2 1-2 inches in circumference, while there were berries that were much larger. They were pronounced of excellent flavor.

Upon this hint it would be well for others to act; for who that has tasted the rich, sweet flavor of the strawberry as the fruit grew in its natural state in the early history of Northwestern civilization, can fail to mark the striking contrast between it

and most of the popular kinds of to-day? There was an aroma in this which is missed also is most of the cultivated sorts. The Wilson, sour and unpalatable, except with plenty of sugar, although cultivated more than any all and other kinds, in only valuable by reason of its hardness, adaptation to all latitudes, and its shipping qualities; as for its flavor, to say nothing of its acidity, it is not to be compared with the wild fruit.

ENGLISH IVY.—The use of English ivies for the decoration of living rooms, is becoming more extensive every year, and cannot be too highly commended. Being very strong, they will live through almost any treatment; but study their peculiarities, and manifest a willingness to gratify them, and they will grow without stint. Most houses are too hot for them, as indeed they are for their owners. Neither plants nor people should have the average temperature over sixty-five degrees Fahrenheit. Take care and not enfeeble your ivies by undue heat or excessive watering, and you will find that they will not seem to mind whether the sun shines on them or not, or in what position or direction you train them. Indeed, so much will they do of themselves to render a room charming, that we would rather have an unlimited number of them to draw upon, than anything else in nature or art. Do you wish the ugly plain doors that shut off your tiny entry from your parlor to be arched or curved, like those in the drawing rooms of your richer neighbor? Buy a couple of brackets, such as lamps for the burning of kerosene are sometimes placed in, and screw them on the sides of the door. Put in each a plant of English ivy, the longer the better; then train the plants over the top, against the sides, indeed any way your fancy dictates. You need not buy the beautiful but costly pots the flower dealer will advise; common glazed ones will answer every purpose, for by placing in each two or three sprays of Coliseum ivy, in a month's time no vestige of the pot itself can be discerned through their thick screen.—*Journal of Horticulture.*

CULTIVATED PATCHES ALONG RAILWAYS.—It is now no unusual thing to see potatoes and other crops planted on the strips of land by the side of railroads. When we reflect how much land could be added to the acres already under cultivation by utilizing these strips between the road bed and the fences, the plan seems both economic and desirable. Throughout England, we learn from a correspondent of one of the daily papers, gardens along the sides of railways are the rule instead of the exception. The space between the track and the fence on both sides is either seeded down to grass or laid out as a vegetable garden, unless too steep to hold soil. Often the name of the station is marked out on the bank in colored stones or in flowering plants; or the letters are cut out of the sod, and the borders so made are gay with flowers or green with vegetables. If this plan were more generally followed in this country, it would not only tend to the benefit of railroad employees, but would give a pleasing variety to the belts of land which now are generally given over to weeds or any wild plant which will grow on them.

PLANTING TREES.—The scarcity of timber in all parts of the country accessible to railroads is becoming a serious question; and it is necessary to take immediate steps to supply a want that in a

few years will become serious. Much rough land has been cleared of timber, and is allowed to grow up in scrub oaks and pine, which if planted, would in a few years furnish a valuable supply. Fencing and building timber will be our greatest want in the future, the question of fuel being satisfactorily settled by our abundant coal deposits. If these thousand acres now neglected were cleared of scrub growth, and planted to European larch, Norway spruce, chestnut, or locust, in ten years, with proper care, fencing material would be plenty. On every farm space could be found for ample plantations of timber. The advice of the canny Scot to his son, "Jock, when ye hae naething to do, be aye sticking in a tree—it will grow whiles ye're sleeping," might be followed by many of our farmers without much trouble, and with a certainty of a profitable return within ten or fifteen years.—*Health and Home.*

THE ART OF PRESERVING LIVING FLOWERS.—Heat fine white quartz-sand in an iron pot, and stir in some stearic acid and spermaceti, in proportions of half-ounce each, to every five pounds of sand. Taken from the fire, the whole is well mixed, and used as follows: A small box, with a drawer lid, with the bottom knocked out, is inverted, and a coarse piece of wire gauze placed inside, over the lid, which now forms the bottom. This sieve is then covered with a layer of the prepared sand. The flowers properly trimmed, are then placed on this sand, and completely embedded in more of it, to keep them in position. The box, covered with paper, is then placed in a room or oven, in which a temperature of one hundred to one hundred and ten degrees Fahrenheit is kept up, in which they will soon be dried. When this point is reached, the lid of the box is drawn, which causes the sand to fall out, leaving the dried flowers on the gauze.—*Bright Side.*

FRUIT CULTURE.—The *Country Gentleman* sums up a few leading points in fruit culture in the following comprehensive remarks:

- "1. Instead of 'trimming up' trees, according to the old fashioned, to make them long-legged and long rimed, trim them down, so as to make them even, snug, and symmetrical.
- "2. Instead of manuring heavily in a small circle, at the foot of the tree, spread the manure, if needed at all, broadcast over the whole surface.
- "3. Instead of spading a small circle about the stem, cultivate the whole surface broadcast.
- "4. Prefer a well-pulverized clean surface in an orchard, with a moderately rich soil, to heavy manuring, and a surface covered with a hard crust and weeds of grass.
- "5. Remember it is better to set out ten trees with all the necessary care to make them live and flourish than to set out a hundred trees and have them all die from carelessness.
- "6. Remember that tobacco is a poison, and will kill insects rapidly if properly applied to them, and is one of the best drugs for freeing trees rapidly of small vermin; and is better used in this way than to make men repulsive and diseased."

DOES GARDENING PAY?—You might as well ask, "Does a sunset pay?" I know that a sunset is commonly looked on as a cheap entertainment; but it is really one of the most expensive. It is true that we all can have front seats, and we do not

exactly need to dress for it as we do for the opera; but the conditions under which it is to be enjoyed are rather dear. Among them I should name a good suit of clothes, including some trifling ornaments—as back hair for one sex, or the parting of it in the middle for the other. I should add also a good dinner, well cooked and digestible; and the cost of a fair education, extended, perhaps, through generations in which sensibility and love of beauty grew. What I mean is, that if a man is hungry and naked, and half a savage, or with the love of beauty undeveloped in him: so that it appears that the conditions of the employment of a sunset are as correctly as anything in our civilization.—*Warner.*

GARDEN GLEANINGS.

California has produced a watermelon weighing seventy-three pounds and nine ounces.

The largest melon patch in Illinois is probably that in Seymour, which covers 700 acres of ground.

Plants from the garden should be put in pots for winter flowering.

Bu'bs intended for next spring's flowering, should be set the last of the month. Purchase of reliable dealers.

Cuttings should be prepared and set. Such plants will flower towards spring, and will be ready to go into the ground next May.

A bouquet made of grasshoppers strung on wires took a premium at a county Fair in Massachusetts, recently. Where is the Society for the Prevention of Cruelty?

The Niles (Mich.) *Demo-rat* says that William Kelly, living in West Niles, left at the office of that paper a very remarkable cluster of pears. One quite a small twig were thirty well-formed pears, the stems of which did not occupy a space of more than four inches. The fruit was of medium size and delicious flavor.

Mr. C. L. Allen, of Queens, L. I., has a flower farm of seventy acres, where, during the last season, were 150 varieties of peonies of different colors, 100,000 lilies in bloom at one time, and nearly 1,000,000 specimens of gladiolus. He has now 750,000 tuberoses. The taste for flowers is largely on the increase, rendering horticulture an important branch of business.

There are now forty millions of grape vines in California, which it is estimated will produce ten million gallons of wine this year. There are no predatory insects damaging the fruit of that State. The peach of California is as good as any raised in New Jersey or Delaware, and grows to a monstrous size. Strawberries are produced in fabulous quantities, and are in the market the year round.

A correspondent of the *New York Observer* says:—"Never give up a choice but decaying rose-bush till you have tried watering it two or three times with soot tea. Take soot from a chimney or stove in which wood is burned, and make tea of it. When cold, water the rose-bush with it. When all is used, pour boiling water a second time on the soot. The shrub will quickly send out thrifty shoots, the leaves will become large and thick, and the blossoms will be larger and more richly tinted than before. To keep the plant clear of insects syringe

them with Quassia tea. Quassia chips can be obtained at the apothecaries."

The *American Rural Home* advises each tree-fancier to plant at least a specimen or two of English walnuts, and says it will thrive in sheltered locations in Western New York but further South needs a rich deep soil. It is a native of Persia, and was brought to Europe about three hundred years ago, and thence to the middle portion of the Eastern States of this country, where it flourishes tolerably well. The timber is valuable. It wears abundantly in most parts of England, requiring little attention. The nut has a good flavor when well matured; yet the same kind grown in Spain is quite superior, brighter, and of richer flavor. It partakes of the fine flavor of the shagbark hickory of the West (white walnut of the East), with other fine, delicate properties of its own. The *California Farmer* says no nut tree is more certain in California than the English walnut.

A private letter from a lady traveling in Ireland describes the growth of garden favorites in the neighborhood of Killarney as something wonderful. It may be owing to our own lack of information concerning the Hibernia flora, but it certainly surprised us to learn that the common varieties of haliotrope grow vine fashion against the walls of houses, climbing in some instances as high as the second story, and diffusing their exquisite fragrance in proportion. As for the fuchsias, they do not exhibit climbing propensities, but are content with developing tree-like proportions their usual practice being to attain the height of lilies in New England, putting forth their gorgeous blossoms even as we have heard they do in California where they grow out of doors to what may be described as an umbrageous size. The climate of the Killarney region is notoriously and superabundantly rainy, which, perhaps, accounts in some degree for the remarkable growth of certain shrubs.

If those who have plantations of strawberries would mulch them late in the fall before severe frost comes, by laying over the rows of plants a good coating of straw or dry cornstalks three or four inches deep, they would insure the plants being protected from the severity of our winters. It is not so much the actual cold as the variations of temperature in winter that kills. Exposure to the rays of the sun on mild days in winter and early spring, followed afterwards by cold snaps, is what most injures the crowns of the strawberry plants when exposed, thus destroying the embryo blossom, even when the plant survives. All hardy and half hardy shrubs and perennial flowering plants are also greatly benefited by the mulching of their roots during winter, either with straw or strawy manure or dead leaves.

At a recent meeting of the Academy of Natural Sciences, of Philadelphia, Mr. Thomas Meehan exhibited a small plant of the common ragweed, *ambrosia artemisiifolia*, which had grown in a pot in his hot-house. The plant little more than an inch in height, was already provided with fertile flowers and little bulblets. He remarked that it was a common impression that when land was put down to grass the ragweed disappeared, and when the ground was broken up the ragweed appeared, as is supposed, from seeds that have lain dormant in the ground. If such pigmy plants as the one exhibited can perfect seeds, it is evident that a number of them

might perpetuate themselves in the grass, unnoticed from year to year.

A good deal of discussion has been going on lately amongst our neighbors in the United States, on the subject of growing plants under blue or violet coloured glass. The practice, on a small scale, is an old one in England, but we were never satisfied that any extraordinary results were attained, and we doubt whether the revival of this plan on the large scale now proposed will repay the cost and trouble.

Editorial.

NATIONAL THANKSGIVING.

Slowly, and by degrees, we are getting along towards the establishment of a yearly day of thanksgiving as a national institution. This year the movement that way originated with the Churches, and was purely a voluntary matter. By concert of action, in which denominationalism was forgotten, and all irrespective of party or sect, heartily joined. Nov. 16th was chosen for this use, and then at length though somewhat tardily, the same day was set apart by public proclamation. In our view such an observance is eminently proper, and the bounden duty of a Christian people. It is meet that one day in the year should be hallowed to this end, and the whole country unite as one man in grateful acknowledgement of the Divine mercies. While many will keep such a day merely as a holiday, the great majority of the population will mingle in religious worship with their festivities, and present thankful homage to the giver of all good. We hope to see this good custom maintained from year to year, as a national "best home."

It is comparatively easy to be thankful in the midst of prosperity and abundance, and this is our agreeable condition. We have gathered another plentiful harvest, so that our granaries are full, affording all manner of store. Business is good, public improvement are going forward rapidly, and the country is evidently in the midst of an era of growth and progress, awhile since we were in the tight grip of hard times. A succession of good harvests and the inflow of population have gradually improved the state of things, until now every commercial interest flourishes and all departments of industry bring a generous return.

The foundation of all this prosperity lies in the success of our agriculture. "The profit of the earth is for all, even the King himself is served by the fruit of the field." Every other class depends ultimately on the farmer. There must be bread for the worker or the sound of labour must cease. How much cause then has our entire population to rejoice and be thankful in view of an abundant harvest. Not the farmer alone who has been

permitted to plow and sow, to till and reap, but all who look to the farmer for supplies, have reason to be grateful when a bountiful providence is pleased to send a year of plenty.

In nothing, perhaps are we so prone to absolve ourselves from responsibility, as in regard to our harvests. Yet there are more dependent on human agency than we are apt to think. We do not now refer to skilfulness in farming, although, unquestionably, failure often results from want of proper culture. Much may very justly be said about unwise cropping,—neglect of proper rotations,—manuring, drainage,—care of stock, &c., and we are accustomed in these columns to give "line upon line and precept upon precept" in reference to such topics. But we have now more particularly in view moral responsibility. Every attentive reader of the Bible must have been struck with the forcible utterances of the ancient prophets on the connection between the discharge of religious duty by people, and the enjoyment of bountiful seasons. What applied to Jewish agriculturists, applies no less truly to the farmers of Canada. That voice of Divine majesty which said of old: "I called for a draught upon the land;" "I smote you with blasting and with mildew, and with hail;" is not wholly silent in those days. It was not a superstitious feeling which in the olden time traced blasting and mildew, drought and caterpillar, to a superhuman agency. In this age there is a tendency to an opposite extreme. Nature and a second causes are alone looked at, and there is too little recognition of that resistless and omnipresent power, to whose behests all human plans and labours are subject. Man may plant and water, but God giveth the increase. We are far from affirming that every failure of the crops is a Divine judgment for national sin; but we do not hesitate to say that there is a principle involved in this matter which is well worthy our attention, and of which we are too apt to lose sight.

Some one has remarked that "the course of nature is a standing miracle." An eloquent writer observes:—"If we could see the wheat woven by fairy spinners, apples rounded and painted and packed with juice by elfin fingers; or if the sky were a vast granary or provision store, from which our needs were supplied by invisible hands in response to verbal prayers, who could help cherishing a constant undertone of wonder at the miraculous forces that encircle us? But consider how much more amazing is the fact! Consider how out of the same moisture the various flowers are compounded; the dew that drops in the tropics is transmuted into the rich orange liquor and banana pulp, and sweet substance of the fig; the pomegranate stores itself with fine fragrance and savour from it; the various colours and qualities of the grape are drawn from

it; and in the temperate orchards, the rain is distilled in the dark arteries of trees—into the juice of the peach and the pear, the apple and the plum." All nature proclaims our dependence on the Great Father above us. Not all the skill of man could make a single grain of wheat germinate, or a blade of grass shoot, did heaven withhold the fructifying influences which are its gift. It surely befits us, helpless pensioners upon the Divine bounty as we are, devoutly to recognize the hand that supplies us, than to espouse the cold, blind, atheistic philosophy of which there is so much in the present day,—which talks with wise look and learned phrase about "nature's law's but never lifts a loving trustful, thankful eye to nature's great and glorious Law-giver.

We have other causes for thanksgiving besides those connected with the processes of nature and the procession of the seasons. Our lot is cast in a good and pleasant land. Its natural scenery, varied resources, and ability to support a teeming population, its free, civil and religious institutions; its antecedents and privileges as a part of the British Empire;—the justice of its laws, the security it enjoys as to life and property, the wisdom of its rulers, its virtue-crowned monarch, and stable throne;—are all causes for devoted thankfulness. Immunity from pestilence; deliverance from war, by which we have been repeatedly menaced; and the long list of personal and family blessings of which such individual and household must make their own enumeration: surely these things loudly call on us to present our united gratitude to Him from whom "cometh every good and perfect gift," not only on a day set apart for the purpose, but at all times.

The adjacent republic has been scathed with devastating fires. One of its chief cities, the pride and glory of the west, has been laid in ruins. Many forest villages in the lumber regions have been swept away by the devouring element, and not a few of the inhabitants have perished in the flames. It is estimated that not much less than two thousand people have lost their lives in these terrible conflagrations. The loss of property has been enormous, but this has paled into insignificance before the appalling fact that hundreds of precious lives have become a prey. We are not of these who interpret these things as judgments. If Chicago deserved an out pouring of fiery judgment for her sins, there are other cities and some in our own Dominion that might justly expect like retribution. Our land cannot boast of its virtue or purity in comparison with the neighboring and kindred nation. Let us be thankful that we who have merited the judgments of heaven as justly as others, have been exempted from the dreadful

visitations that have befallen them. We have had fires in rural and unrural places that have not been unattended with loss, but our exemption in this particular may well be written light upon "our list of blessing infinite."

Farmers, as class, have been charged, whether justly or no we will not undertake to say, with giving way to a spirit of grumbling and complaint. Their calling not unnaturally awakens at particular seasons no little anxiety, and it is easy for this to degenerate into distrust and misgivings. It is well to watch against tendencies. A cheerful, hopeful disposition is worth a great deal to the man who must earn his bread with the sweat of his brow. It is indeed a treasure to every man who has it; whatever his occupation. Despondency and repining, sever the sinews of industry, and paralyze the arm of toil. Better than silver and gold, houses and lands, is a contented mind, for that we are assured on the highest authority, "a continual feast."

A WORD ABOUT TREES.

It is not natural that such calamities as the great fire of Chicago and those which have devastated so wide a stretch of country and destroyed so many lives in Wisconsin and Michigan, should set men to thinking. Thinking, first, of the causes of those calamities, and, secondly, of means by which they may be prevented. The cause of the Chicago fire and the means necessary to be taken to prevent others in its class in the future, have engaged public attention already—if not sufficiently at least to as full an extent as the public seems disposed to tolerate; but of forest and prairie fires we have not heard so much.

The New York *Evening Post* starts the subject, however, and its discussion promises to prove interesting. The denudation of the country of its trees is, according to the *Post*, to the cause not only of such calamities as fires, floods, drouths, and failure of crops, but of more enduring and more disastrous effects. The loss of energy in man and the decadency of empires are attributed to the same causes. How great an effect trees have in retaining moisture in the soil and attracting moisture from the clouds, breaking the force of winds, and, mediately, of swelling the volume of rivers few people know or care to learn. In this country, as the land is cleared up, and the forests are cut down to give the agriculturist room for his operations we see and deplore the drying up of streams, and the older inhabitants note changes in the climate; but fortunately, we have not yet so thoroughly uprooted our forests as to make the country a treeless waste or

to bring upon us the calamities which have visited other lands. The *Post* cites the case of Spain, which, when first visited by the Romans, maintained a population of forty millions, but now has only twelve millions. The cause is said to be the destruction of forests. "In Castile, especially on the plains, the traveler may not see a tree during a whole day's journey. Hail storms drouth lasting, without a drop of rain, from April to October, or sudden and destructive inundations, are the consequence. The same thing is observable in every land of southern Europe where the conditions are similar." Confirmations of the truth of this theory are abundant. From the Western prairies come accounts of dreadful hurricanes, fierce thunder storms, devastating floods and long-continued drouths. But, as settlements invade the plains, and trees begin to spring up around the habitations of man the violence of these phenomena decreases, and the Great American Desert, which used to fill so large a space on our maps, is nearly obliterated. The reason is that the settlers of the West, reversing the common insanity, has come to know the value of trees, and their Legislature, by remission of taxes and in other ways, encourage their planting, so that already, if the wilderness does not blossom as a rose, it bids fair to wave with joyous groves of green, which, while they supply the first demand of fuel for the inhabitants, will also alleviate the rigors of the climate—decreases alike the cold of winter and the burning heat of summer, call down the gentle showers upon the fainting land, and breaks the force of the desolating tornado.

In Canada we have not yet gone the insane length of destroying utterly our beautiful forest trees. While the pioneer has been compelled to look upon the woods as an enemy to be conquered, he has not imbibed a dislike to the trees themselves. On the contrary, he loves and reverences them. In most cases he leaves a few to shade and grace his dwelling, and quite commonly lets a patriarch of the forest stand here and there through his tilled fields to shelter the cattle when they pasture there.

But how easy it would be now, when the forests are near at hand in all places, to plant trees by the roadside. What beautiful drives our common roads would make in a few years if every farmer should line the highway in front of his farm with trees. Leave the selection to him. All trees are beautiful and few mistakes would be made. The patriotism which has adopted our beautiful maple as Canada's own tree would doubtless select that in the majority of cases; but the graceful elm and the swarthy oak would doubtless find thousands to plant them for the sake of the variety and of the traditions which cling to them, especially to the latter.

Will some of our country readers adopt this plan? All know the effect of good example; and such an example, once set, would soon grow into a habit. There would be this good in it too, that the occasional trees now left in the fields might be cut down and so much arable land saved. There would then be no danger of our land growing bare, of our water-courses entirely drying up; and no danger of our ever inheriting the storms, the fires and the drouths which other countries are so frequently called upon to deplore.

PRESIDENT WILDER'S ADDRESS.

The address of Pres. Wilder, at the late meeting of the American Pomological Convention, at Richmond, Va., was very interesting. The following are concluding portions of it:

'The importance and value of our calling in developing the resources of our country, in the occupation of unimproved lands, adorning our homesteads, enhancing the value of real estate, multiplying the blessings and comforts of life, and promoting a great source of national wealth, cannot be too highly appreciated. The more I reflect upon the progress we have made, the more am I confirmed in the belief that this branch of culture will ere long become second only to the growth of the bread and meat of our country. The enormous production of strawberries and other small fruits, the millions upon millions of baskets of peaches—not to speak of the apples, pears, and other fruits that are now annually produced,—give promise that the time is fast approaching when all classes of society may enjoy this health preserving condiment as a portion of their daily food. Nor can I refrain from referring once more to the benign influence which our employment has upon the moral and religious instincts of the heart, the refinement of taste, and the welfare of society. Whatever pleasure may be derived from other pursuits, there is surely none that has afforded stronger evidence of a high and progressive state of civilization, are a more ennobling influence than the culture of fruits. 'This,' says Gen. Dearborn, must have been the first step in the march of civilization, while the method of ameliorating their character and multiplying the varieties may be considered as taking precedence of all human efforts in the industrial arts.'

"From the day when God gave our father in Eden trees, 'pleasant to the sight and good for food,' down to Solomon, who said, 'I made me gardens and orchards, and I planted in them trees of all kinds of fruits,' and through the successive generations of men, the cultivation of trees and plants has been the criterion of taste and refinement. No object of attachment is more naturally allied to the instincts of the soul, and truly did Emerson remark:—"He Who knows the most, he who knows what sweets and virtues are in the ground, and how to come at these enchantments, is the rich and royal man." And what greater benefactions can you leave for posterity than these memorials, which shall grow, which shall tell of your love of the most beautiful works of nature, kindred, and

home, when you are slumbering in the grave? Far better these for the perpetuation of your memory and the benefit of the advancing millions of coming time than all the monumental shafts and pillars of polished marble that ever graced the hero's tomb.

"With the deepest sense of gratitude do I rejoice in the presence of a few of the founders of this society, whose lives have been prolonged to this day. Ere long all those who were present at its first meeting, and he who by your indulgence has occupied this chair so long, will vacate their seats. Others will fill the places which we now occupy, but our society and the cause it seeks to promote will live on to bless the generations which shall succeed us.

"Long may the members of this Society meet together as friends and mutual helpers, dispensing and receiving good, and may your efforts for promoting the most beautiful of all arts—this health-preserving, life-prolonging industry—be crowned with continued success. May the Society go on conferring blessings on our country, until every hearth-stone and fireside shall be gladdened with the golden fruits of Summer and Autumn; until thanksgiving and the perfume of the orchard shall ascend together like incense from the altar of every family in our broad land, and the whole world realize, as in the beginning, the blissful fruition of dwelling in the Garden of the Lord. And when at last the chain of friendship which has bound so many of us together in labor and in love shall be broken; when the last link shall be sundered, and the fruits of this world shall delight us no more; when the culture training, and sorrows of earth shall culminate in the purity, perfection, and bliss of Heaven, may we all sit down together at that feast of immortal fruits—

"Where life fills the wine cup and love makes it clear,
Where Gilead's balm in its treachery shall flow
O'er the wounds which the pruning-knife gave us
below."

ENTOMOLOGICAL SOCIETY OF ONTARIO.

The annual meeting of the Society was held at Kingston, Sept. 27, at Queen's College. In the unavoidable absence of the President, Mr. W. Saunders, of London took the chair.

The President's address, and the Secretary-Treasurer's report having been read, the following officers were appointed for the year 1871-72:

President—Rev. C. J. S. Bethune, M. A., Fort Hope.

Sec-Treas—Mr. W. Saunders, London.

And a Council of five Directors—Professor Croft, Toronto; R. V. Rogers, Kingston; Johnson Pettie, Grimsby; J. M. Denton, London; Professor T. Macoun, Belleville.

Auditors—Mr. C. Chapman, London; Mr. S. Griffiths, London.

ANNUAL ADDRESS OF THE PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO, 1871.

To the Members of the Entomological Society of Ontario:

GENTLEMEN,—It is with no ordinary feelings of pleasure and satisfaction that I offer you my congratulations upon the continued success and pros-

perity of the Entomological Society of Ontario. We are now met together to hold our first annual meeting under our Act of Incorporation, and as a public society duly recognized by the Government of the Province, and closely associated with the Agricultural and Arts Association of Ontario, who are now holding their great annual exhibition in the city of Kingston. As we have now attained to a position so much superior to anything we anticipated a few years ago, it may not be amiss to give a brief account of the origin and progress of the Society, and of the work it has been able to accomplish.

The origination of the Society may be traced to the publication in the number of the *Canadian Naturalist and Geologist*, for June, 1862 of a "List of Entomologists in Canada," prepared by Mr. Saunders of London, Ont., and myself. As this list contained the names of thirty-six persons interested in the collection and study of insects, it was resolved to hold a meeting and endeavour to form a Society or Club of those engaged in this branch of Natural Science. In the following September, accordingly, ten gentlemen assembled at the residence of Prof. Croft in Toronto, and decided upon the formation of an Entomological Society, whose objects should be (1) the preparation of as complete a collection as possible of Canadian insects, to be kept in some central place for general information and reference; (2) the charge of a depository of duplicate specimens contributed by entomologists for distribution amongst its members; and (3) the holding of meetings from time to time for mutual information and the advancement of the science throughout the country at large. As so few were present at this meeting, no definite organization was attempted at the time, but the matter was laid over until the following spring.

On the 16th of April in the following year (1863), the Society was at length duly organized under the Presidency of Prof. Croft, and with Mr. W. Saunders as Secretary-Treasurer, and the late Rev. Prof. Hubbert as Curator. The names of about twenty-five persons were enrolled as original members. During the year meetings were held from time to time, and several more names were added to the list of members.

The next year (1864) was one of great progress, being signalized by the formation, in March, of a branch, with ten original members, at Quebec, Canada East; and of another in July, at London, Canada West, with thirteen original members. A preliminary list of Canadian Lepidoptera, embracing 144 species of Butterflies, Bombyces, and Springes, was published by the Society during the year. In 1865 many additions to the roll of membership were made and much good work was done, including the publication of a second list of Canadian Lepidoptera, containing the names of 350 more species. During the following year (1866) the society held but few meetings and effected but little, owing to the disturbance caused by the Fenian raid, and the call made upon many members to leave their homes and join the ranks of the volunteer service. The year 1867 was marked, in the annals of the Society, by the publication of a valuable list of Canadian Coleoptera, which included no less than 55 families, 432 genera, and 1,231 species, being many times more than had ever been previously enumerated in a Canadian list.

In August, 1868, the Society issued the first number of the *CANADIAN ENTOMOLOGIST*, a small monthly

periodical devoted to the publication of original papers on the classification, description, habits and general history of insects. This little serial has been received with much favor by the leading entomologists of America, many of whom have from time to time contributed to its pages. It has now reached the middle of its *third* volume, and has increased to three times its original dimensions; it has also improved much in style and typographical appearance, as well as in the excellence of its illustrations.

Until December, 1869, the Society received no extraneous assistance nor public recognition, but depended wholly for its maintenance upon the efforts of its members. At that time, however, it was voted a grant of \$400 for the year 1870 by the Board of the Agricultural and Arts Association of Ontario, on condition that it furnished an Annual Report, formed a cabinet of insects useful or prejudicial to agricultural and horticulture, and continued the publication of the *Canadian Entomologist*. These conditions were severally complied with by the continuance and improvement of our periodical, the formation of a cabinet of insects arranged in an economical point of view, and placed in the rooms of the Association at Toronto, and by the publication of a report upon the insects affecting the apple, grape and plum, prepared by Messrs. Saunders and Reed and myself. The singular favour accorded by the public to this report, and the fact that an addition of three thousand copies were speedily exhausted, sufficiently attest its value.

The present year (1871) has been signalized by the incorporation of the Society by the Legislature of Ontario, at the instigation of the Bureau of Agriculture, and the grant to its funds by the Government of \$500 a year. By the same Act, moreover, your President is entitled to take his seat as an *ex officio* member at the Board of Agriculture and Arts.

Among the marks of progress of the year, mention must by no means be omitted of the formation of a *third* branch of the Society at Kingston, which we trust will long continue to grow and prosper.

Such, gentlemen, is a brief account of the origin and progress of our Society, the recital of which has not, I trust, proved uninteresting to you. When we look back upon our growth and development, we must all, I am sure, feel cheered and encouraged to continue our work and strive by our united efforts to make the ENTOMOLOGICAL SOCIETY OF ONTARIO a credit and a blessing to our land.

Before concluding, I feel that it is my painful duty to remind you of the loss which our Society, and the cause of natural science generally in this Province, has sustained in the recent death of Prof. Hincks, of University College, Toronto. He joined us in our first attempts at organization, and continued our steady friend and supporter till a few months ago. Though his special studies were chiefly devoted to another department of Nature, he yet took a lively interest in entomology, and was a frequent attendant at our meetings. He died at a ripe old age, and has left a mark upon the scientific records of our country which will not soon be effaced.

Thanking you, gentlemen, for the honour you have done me in calling upon me to preside over you during the past year, and trusting that our Society will continue to grow and prosper, and be zealously maintained by us all,

Your obedient servant,
CHARLES J. BETHUNE.

Agricultural Intelligence.

CROP REPORTS.

From the Globe.

The demands of the numerous exhibitions that have crowded together within the past few weeks have prevented an earlier notice of the crop returns that have been collected and published by the Grand Trunk and Great Western Railways. These are almost the only reports of the kind that we receive until the interest and chief utility of such reports are past; and though they are far from being complete and accurate, they may be received as a fair indication of the harvest in those sections—and they are widely extended—to which they refer. When, moreover, there is a general uniformity and consistency in the various accounts transmitted from different localities, it may safely be inferred that the information is correct. Such has been peculiarly the case with the reports this year, and the general voice of the country will endorse the favorable statements that appear in these published documents.

From all parts of the country where fall wheat is grown (and the breadth of land sown with the crop is unusually large), an almost unvarying account of a large crop is given—only seven stations reporting under average. Spring wheat has experienced greater variation, and has turned out in some sections unfavorably, in consequence of the drought. Still, the proportion of the returns over average, or a good average, is larger than the season would seem to warrant. The same remark applies to barley and peas. Oats, however, with even fewer exceptions than fall wheat, have been reported as an unusually heavy crop. Hay has been generally light, yet in some districts, even this crop has been exceedingly good. The statistics were collected almost too early in the year to be of much reliance in regard to root crops generally, with the exception perhaps of potatoes. These are variously estimated. In some places considerable complaint is made of the rot; and both the yield and the keeping quality of most sorts will, on the whole, be inferior to the product of average years. Very little is said about the damage of the Colorado Potato Beetle. Hitherto this destructive insect seems to have inflicted far less injury than was anticipated. Farmers should not, however, on this account, allow their vigilance to slumber, or neglect any reasonable precautions against the incursions of next year's broods. Flax, in the few places where it is cultivated, appears to have done well. Amid the general favorable character of the reports, it is curious to note a singular exception, which we cannot help partly ascribing to the mood of the reporter, for the district round does not seem to be less favored than the country generally. If there is no mistake, Beamsville must be peculiarly unfortunate, for we are told that the average yield of "fall wheat is 3 bushels to the acre; of spring wheat, 10; barley, light, hay very light; while there is an abundance only of straw and oats.

The following tabular statement will give a general idea of the character of the returns. The coun-

try through which the Grand Trunk Railway passes is divided into districts as follows:—The Buffalo and Goderich District, embracing the country between Goderich and Fort Erie—The Western District, extending from Detroit to Weston—The Central District from Toronto to Montreal—The Eastern District, including the country between St. Lambert and Lachine. Besides these chief divisions there are a few stations included in the Montreal and Champlain District, and the Richmond and River du Loup Districts. The Report of the Great Western Railway embraces the country lying along the main line from Windsor to the Suspension Bridge. We have divided the returns under three heads, in regard to the average which we set down—for fall wheat, at from 20 to 25 bushels to the acre; for spring wheat, from 15 to 20; for barley, from 20 to 25; for peas, from 20 to 25; and for oats, from 25 to 30 bushels per acre.

GRAND TRUNK CROP RETURNS.
BUFFALO AND GODERICH DISTRICT.

	Over Average	Average	Under Average
Fall Wheat	12	3	0
Spring Wheat.....	8	6	0
Barley	9	5	1
Peas	11	4	1
Oats	12	2	4
Roots	4	6	4
Hay	0	3	6

WESTERN DISTRICT.

	Over Average	Average	Under Average
Fall Wheat	25	6	0
Spring Wheat	12	15	3
Barley	19	9	1
Peas	18	8	1
Oats	21	3	2
Roots	5	12	17
Hay	0	3	17

CENTRAL DISTRICT.

	Over Average	Average	Under Average
Fall Wheat	18	12	0
Spring Wheat.....	15	15	0
Barley	21	10	1
Peas	13	8	0
Oats	21	9	0
Roots	3	13	12
Hay	1	7	15

EASTERN DISTRICT.

	Over Average	Average	Under Average
Fall Wheat	8	0	1
Spring Wheat.....	14	12	3
Barley	11	10	3
Peas	19	8	1
Oats	19	7	1
Roots	1	22	2
Hay	1	7	19

MONTREAL AND CHAMPLAIN—RICHMOND AND RIVIERE DU LOUP.

	Over Average	Average	Under Average
Spring Wheat.....	8	7	4
Barley	7	10	1
Oats	13	5	0
Potatoes	1	9	5
Hay	9	3	2

GREAT WESTERN CROP REPORT.

	Over Average	Average	Under Average
Fall Wheat.....	26	20	4
Spring Wheat.....	19	21	9
Barley	18	21	2
Peas	21	18	1
Oats	25	17	3
Roots	0	30	7
Hay	0	12	15

THE HARVEST OF 1871.

We (*London Economist*) may now take a survey of the results of the harvests and the general position of the English farmers, with a fair hope of arriving at correct conclusions, so far as possible on subjects so complex. As to the wheat, the general opinion certainly is the yield will prove deficient, and various thrashings have been cited as corroborating that view; on the other hand, there have been so many instances in which the yield has more than answered the anticipations, as in some degree to modify the current notion of a large aggregate deficiency. That the corn is well got in free from sprouting, and generally in good condition, is admitted, while the bulk of straw is very considerable. Probably the most correct statement as to the yield will be found to be of this kind—i. e., that in proportion to the straw the yield will, in average farming, prove deficient, but that, taking the bulk of straw, there will not be a great acreable deficiency. At all events, the grain will be fit for immediate use. The gradual downward tendency of prices for wheat, which was going on before the advance of the rate of interest by the bank of England had checked speculators, also serves to confirm that view. That farmers with their actual crop and probable prices will find their wheat fairly remunerative is, we believe, a reasonable conclusion. Barley is generally a good crop, and oats, though not so universally good as barley, are, for the most part, very abundant. Peas and beans have grown with remarkable luxuriance this year; and even if the yield be only moderate in proportion to the straw, the pulse crops are certainly beyond the average. In the general economy of the farm, and in relation to stock (now so profitable to farmers) the great abundance of all kinds of straw of the present season is a vast boon to farmers. This will supply some of the defects in the quality of their hay, which, though abundant was not in general well saved.

Another point of remark is the immense luxuriance of the after grass. Few recollect so much. In this respect the contrast with last year is extreme

and unless the coming winter should prove severe, the stock will be maintained on the meadows and pastures with far less help from the manger and rack than in ordinary open seasons. Indeed, the abundance of keep has so forced up the prices of store stock, that at present few purchases of store stock can be made without considerable risk. The prices of fat stock are extreme, and are likely to continue high, as the supply is decidedly insufficient to meet the current demand. Perhaps nothing could better illustrate the advantage, nay, the necessity, to farmers of possessing some reserve of capital beyond that actually employed on the farm. For instance, the great majority of farmers were last year compelled by want of keep to sell off very much of their cattle and sheep at a loss, whereas had they kept them on by outlays, entailing much immediate loss, they would have found themselves during the present year in a position of having a heavy stock of the most profitable description. Again we may note, as we have often before done, that farmers whose land is in high condition have very little to complain of as to the yield of their wheat. The scarcity of hands has caused much delay in getting in the harvest, and has proved to the farmers the importance of machinery, and the necessity of retaining on their farms a greater number of permanent workmen, as well as men who are skilled in all the various kinds of farm work. The prevalence of foot-and-mouth disease amongst cattle and pigs has been the greatest drawback of the present autumn, the loss of produce from this cause amongst dairy cows has been very great, while the condition of all cattle attacked by the complaint has been seriously lowered. There can be no doubt that the spread of this disease has been mainly caused by the culpable negligence of butchers and dealers, and in less degree of farmers themselves. We do not believe that it is derived from imported cattle, but that it is probably the result of the low condition to which many of the cattle were reduced during the summer and autumn of 1879 and the past winter, followed by the abundant pasturage of the present season.

GREAT ENGLISH DAIRY SHOW.

A great show and fair of dairy products was held at Frome, England, during the last week in September, at which there were ninety-four entries in the cheese department and fifty-six in the butter department. There was a very large attendance, and great enthusiasm was manifested. The success that attended the exhibition ought to show manufacturers in this country that it would be very much to their interest to hold similar shows.

The last number of the *Mark Lane Express* in commenting on the exhibition says:—To an observant visitor to the show of Wednesday last it was interesting to note that in the case of the prize cheese symmetry of shape and maturity of external appearance were almost unerring guides to excellence of internal quality. This, be it observed, is one of the instances where science approves and explains what practical experience has worked out with infinite labor and difficulty. The matter is thus explained by Dr. Voelcker: "When the whey has been ill-separated from the curd, in the process of cheese-making, no amount of after pressure will squeeze out the excess of whey, which then causes

the cheese to heave and blister, and imparts to it a somewhat sweet and at the same time strong taste. This taste is always found in an ill-shaped cheese, which bulges out at the sides, the interior being found to be full of cavities and far from uniform in texture. Many American cheeses are evidently spoiled in this way, for they are often full of holes, have a strong smell and contain too much moisture—such indications that the whey was not properly separated. This sweet taste is given to the cheese by part of the sugar of milk, of which a good deal is found in whey; another portion of it, on entering into fermentation, forms amongst other products, carbonic-acid gas, which, in its endeavor to escape heaves up the semi-solid curd, and causes it to blister, producing the numerous apertures of considerable size which are found in badly made cheese. If the cheese be colored with annatto, the excess of whey at the same time causes a partial separation of the coloring matter, so that more color collects in some parts than in others and the cheese assumes that unequal condition in which it is called tallow. A uniform color and perfect shape are therefore to a certain extent indications of superior quality, whilst mottled ill-shaped cheese almost invariably proves tallow to appearance, and anything but agreeable to the palate."

At the show of Wednesday last there were twenty-six exhibitors of large best cheese, open to the counties of Somerset, Wilts, and Dorset; 12 entries of best cheese, each weighing not less than a quarter cwt., restricted to dairies of 25 cows, or under, in the same counties as the former class; 22 entries of the best full cheese, open to the United Kingdom, of any system of make, and of any size; 6 entries of loaf cheese, not exceeding 16 lbs. each, made in Somerset, Wilts or Dorset; and 28 entries for the sweepstakes, open to all the world, for the best cheese of any make or size; making a total of 94 of which 66 were from the county of Somerset, 13 from Dorsetshire, 4 from Wilts, 1 from Gloucestershire, 2 from Warwickshire, 5 from Scotland, and 2 from Derbyshire, including one of factory-made cheese on the Cheddar system.

No better criterion of the quality of the cheese exhibited could be adduced than the fact that a celebrated Somersetshire maker who has hitherto succeeded in carrying off nearly all the first prizes at the leading English and Continental shows, and who exhibited on Wednesday in the three principal classes, was entirely overlooked by the judges, although in the classes alluded to they awarded not less than 8 prizes, 5 high commendations, and 5 commendations. The truth appears to be that never until now have the best makers in the Cheddar district cared to incur the expense and trouble of competition: and it is highly probable, as was confidently stated in the show by those who ought to be well-informed in the matter, that a better lot of cheese has seldom, if ever, been brought together in England, or on the Continent, under the most favourable conditions. On this occasion the winner of the prize for the best large cheese produced in the three western counties was Mr. C. Welch, of Ditchent, Evercreech, whose farms in the Cheddar district properly so termed; he also received a high commendation for cheese in the class open to the United Kingdom, and took the first prize of twenty-five pounds six shillings and eight pence in the sweepstakes, open to "all the world," making a total of forty five pounds six shillings and eight pence.

At the cheese fair, which was held at the same time as the show, but in a different marquee, it is calculated that at least 250 tons were pitched, the prices varying from 65s. to 75s, and in one exceptional case it was reported to the committee that as much as 80s. had been realized. The cup valued at seven guineas, to the purchaser of the largest quantity of cheese at the fair, went by general acclaim to Messrs. Gayton, of Rowbridge.

At the dinner which took place in the evening at the Mechanic's Hall, under the presidency of the Earl of Cork, upwards of two hundred were present including many dairy farmers and provision merchants from distant parts of England.

The chairman gave prosperity to the Club which had originated the show and fair held that day with such remarkable success. Cheddar cheese had from a remote period been held in high repute. In the reign of Charles II. they found the Earl of Shaftesbury writing to the celebrated John Locke in its praise, and there is very little doubt that even the monks of Glastonbury were quite alive to its merits. He congratulated the dairy farmers of the West that they had wisely waked up, and determined to make it known that Cheddar cheese was just as good now as it was in the days of their forefathers. He contended that time had arrived when the makers of cheese ought to have a market wherein to sell their produce, and expressed an opinion that for quality Somerset men could beat Americans out of the country. There were in Somerset nearly 78,000 cows employed for dairy purposes alone; the Government gave the number at 98,000. He learnt from a paper by Mr Thornhill Harrison in the West of England Society's Journal, that each cow ought to give 3½ cwt. of cheese a year; and if every farmer made proper use of his land, and fed his cattle properly, out of Somerset should be produced no less than 355,473 cwt. of cheese every year. As to what became of English cheese, his lordship remarked there had been a very large export of it during the last ten years. In 1866 the cheese exported from England to our different colonies was only 39,028 cwt.; whereas in 1870 the amount was 119,246 cwt.—an enormous increase, which should stimulate them to increased production, at the same time taking care above all things to keep up the character of their produce by the most scrupulous attention to cleanliness, both as regarded the treatment of their milk, the arrangements of the dairy, and all the various appliances required in the progress of manufacture.

SHORTHORN SALES IN BRITAIN.

A number of extensive and important sales of Shorthorns have lately taken place in England and the results show that the fancy for this breed, which has so long held the first rank among cattle, is as lively as ever. Indeed, the prices realized have surpassed any that have been hitherto given for this class of stock of public auction.

The first in order of time was also the most remarkable, namely, the sale of the Duke of Devonshire's Shorthorns at Holker, in Lancashire, which took place on the 6th of September. The sale was not so large as some others, there being but 43 head altogether; but the highest average in the annals of

shorthorn sales was reached, namely, £240 13s. The chief attraction of the occasion was the Oxford tribe, all of which that were offered brought extraordinary prices. The highest figure among the females was 1,005 guineas for Grand Duchess of Oxford 18th, a heifer not quiet a year old. A 7-year old cow, Grand Duchess 8th, fetched 915 guineas; and a 2-year old heifer, Grand Duchess 16th, brought 610 guineas. Amongst the bulls of the same tribe, Grand Duke of Oxford 20th was sold for 1,000 guineas; and two others for 335 and 305 guineas each.

Another tribe, the Winsomes, also realized good prices, though not equal to those paid for the Oxfords. The highest price among the females of this family were 495, 370, 355, 350, 320, 300 guineas. The following is a summary of the total sale:—

13 Cows—average \$245 2s.

12 Bulls— " 221 11s.

43 head—averaged £240 13s.; total, £10,239 17s.

On the following day, Sept. 7th, the sale of Mr. Slye's Shorthorns came off near Lancaster. No remarkable prices were obtained, the highest sum paid being 500 guineas for a cow, Lady Fregunter Bates. Altogether 12 head averaged £71 10c. and realized a total of £2,902 2s 7d.

The sale of Mr. Foster's Shorthorns at Killhow, took place on the 8th of September. 360, 325 and 225 guineas, were the highest figures for cows. 56 head averaged £101 1s. 6d. and brought a total of £5,716 4s.

September 12th witnessed another somewhat remarkable sale of the same class, consisting of a draft from the herd of T. Beil, of Brockton House Eccleshall. The grand feature of the occasion was the sale of the Lull Eight Duke of York, by 4th Duke of Thorndale (17750), for 1,065 guineas, the highest price yet given for a bull, and the highest for any Shorthorn at public auction. The summary of the sales is:

36 Cows—average £42 2s. 4d.

12 Bulls— " £112 15s. 9.

49 head averaged £58 13s. 5d.; total £2,874 18s.

Mr. Thornton conducted the sale of a part of the Messrs. Duddings's herd at Wragby, on the 14th of September. The high prices were obtained—37 guineas for a cow being the highest.

The average price of 71 cows was £46 7s.

" " 11 bulls " £59 15s.

The total amount for 82 head—£3,648.

The sale of Mr. Sheldon's Shorthorns at Brailes has already been noticed. The highest figure reached was 415 guineas for a cow, Grand Duchess of Barrington.

The average of 26 cows was £112 9s.

" " 15 bulls " £44 5s. 2d.

Total for 41 head, £3,527 8s.

Our latest English exchanges bring an account of another sale from Mr. Ladd's herd of Ellington, on the 28th of September. No animal brought a higher price than 81 guineas.

The average of 71 cows was £45 12s. 0d.

" " 23 bulls " £37 13s. 3d.

The 95 head brought a total of £4,149 12s.

—Globe.

AMERICAN CHEESE IN ENGLAND.

The London *Milk Journal*, for September, has the following report on the cheese market there, dated August 23rd.

English Cheese.—In consequence of the excessive heat of the last month, has been in small supply, the risk of carriage being too great to induce factors and dealers to handle the article. Farmers are anxious sellers, but still hold on to the idea of getting prices which there is no chance of their obtaining; this they will find out to their cost, for Americans are steadily absorbing all the demand, and not only for common grades, but also for the finest. There are still a few old Cheddar and double on hand, which sell very slowly at bad prices.

American.—Are in very large supply. The total clearances to Great Britain from New York for the past four weeks have been respectively 66,000, 66,700, 70,500, 69,400, making a total of 263,600 boxes, which is equal to something over five thousand tons. Arrivals have made a ready sale at steadily declining prices; 54s. to 65s is now the market quotation for fine cheese, which will compare favorably in quality, flavor and condition, with any home-made at 10s. to 15s. more money; whilst some good, clean, meaty cheese can be bought at 42s. to 50s. These prices being much lower than for many years past, and the June make being very good, has encouraged a large consumption.

Dutch Cheese.—Still continue dear, and stocks are accumulating. The article, like English, is being out of consumption by the American.

The editor of the *Journal*, in another article, calls special attention to these statements, and adds:—"The success of America is to be attributed to the extensive organization of her cheese factories, whereby division of labor is effected, a large working capital used in the manufacture of cheese, and a uniform good make produced, by converting milk into cheese on a large scale; and by the employment of skilled labor under the superintendence of scientific, enterprising commercial men. The system which has done so much for America can undoubtedly do a great deal for us, and enable us to maintain our ground against all comers. We therefore watch, with a daily increased interest, the success of cheese factories in our own country."

HORSES IN BELGIUM AND FRANCE.

Belgium, after the rinderpest, is most occupied with the decline in horse breeding. Her large draught horses are in such request by foreigners, that the exportation has largely denuded the country. The Government has had to come to the rescue, by renewing the subsidies for the breeding of the noble animal. It has been decided to maintain the native race distinct, and raise a cross breed for light, draught and cavalry purposes. The supply of stallions is short, and the authorities purpose buying some and stabling them in certain localities, charging nothing for their services.

France, also, is deficient in horses, and seems inclined to leave the supplying of the deficiency to private enterprise, as the aid to the State breeding studs is being gradually withdrawn. The country

possesses three millions of horses, and requires a tenth of this number to be renewed every year to keep up the total average. The stallions count twelve thousand, and a third at least of the number would require to be of excellent breed to effect any excellent improvement. Germany sent three hundred and thirty thousand horses into France during the campaign, as a rule beautiful animals, very much superior to any that France opposed to her.

PARASITE OF THE COLORADO POTATO BEETLE.

Some little time since we received from Mr. W. B. Crinkley, of Gad's Hill, Ont., a specimen of the larva of a bug that fed upon the eggs, larvæ, and perfect forms of the Colorado Potato Beetle. As specimens of the latter were sent with the insect, we were enabled to test ourselves its useful qualities in this respect. When the insect first reached us we were unable to determine its species, as in their miniature larval state bugs resembled each other very much; recently, however, it completed its transformations into the perfect or winged state, and proved to be, as we were inclined to suspect at first, the spined Soldier-bug (*Ameletus*, Dal. as.) This insect belongs to the true bugs (*Hemiptera*), and is a member of an extensive family (*Stelletidae*), distinguished by the very large scuted or triangular pieces of frame-work between the wing covers at the base. Most of the species of this family are vegetable feeders, and often very destructive; but this one, with some others, is carnivorous, attacking other insects, and sucking their juices through the long and sharp proboscis with which it is furnished. It is quite a common insect in Canada, and may often be found on trees, wandering about in search of its proper food. It has been known for some time to do good service among Colorado beetles, and was described and figured in the *American Entomologist* in September, 1868. It does not, however, confine itself to this particular insect as an article of diet, but will readily attack almost any caterpillar or beetle that comes in its way. It is needless, we trust, to add that this bug, though unsavory in odour, should never be molested, but rather encouraged in its useful work.—*Globe*.

THE GRAIN SHIPMENTS FROM CHICAGO.

The Chicago *Tribune* says the advance in the price of wheat East, consequent on fear of a short supply from the West through the temporary paralysis of the Chicago forwarding business, is without justification. The grain destroyed rots up but 1,600,000 bushels of all kinds, and of this a portion will probably be secured in a damaged condition. Shipments have been resumed, and with the re-opening of the banks the business will be pushed as lively as ever. In reality, says the *Tribune*, "the very fact that so much property has been destroyed by fire, that all the money available is wanted to help rebuild the city, is guarantee that persons will care to carry large stocks of grain here all will want to realize on it, which can only for done by moving it on. In the general need we money we have also a circumstantial promise that

no speculative mania will run up prices to a point where it will not pay to ship grain. We may expect our markets to be more healthy, because more favorable than this autumn and winter than for several years past."

The *Tribune* says it is highly probable that while lake shipments will continue active till the close of navigation, the amount of grain forwarded East by rail the coming winter will be largely in excess of any previous year.

ENGLISH WOOL MARKETS.

The *Irish Farmers' Gazette* of October 14th has the following regarding English wool:—A rather more cheerful feeling is observable in the market, and although business is still very quiet, settlers report a slightly increased inquiry for some descriptions. There is no spirited buying, however, and consumers only take small quantities to cover any trifling orders they may have booked. The great firmness in price is still a most notable feature of the market. Stocks of wool remaining in the country are usually small for the time of year, and prices asked there are such as make it impossible for staplers to replace their stocks favorably if they sell at present prices. Confidence is well maintained, and very few holders will make more than the merest fractional concession to affect sales. These remarks apply chiefly to good combing fleece wools. In skin wools, and among low wools and shorts, there is some giving way.

SUNDRY NOTES.

The *North British Agriculturist* says that in almost every potato growing district the disease is making steady progress, and it is generally expected that no small part of the crop will be unfit for human food. Ireland seems to be somewhat better off than other parts of the kingdom. Reports from various quarters assert that the potatoes are doing fully as well as last year. This good fortune is, of course, not universal, the blight being at work in portions of the North, and where seed of very old varieties has been planted much damage has been done.

Far more serious than the potato disease is the rapid spread of the cattle plague. It exists in two forms, pleuro-pneumonia and the foot and mouth disease. No amount of precaution seems able to arrest either the importation of the infected cattle or the propagation of the malady among English herds.

Official reports affirm its existence in seventy-three counties of the Kingdom.

KELSO RAM SALE.—The annual sale of rams, chiefly Border Leicesters, came off at Kelso on the 8th of September. There was a large attendance of buyers, a magnificent show of sheep, and good average prices were realized. As usual, the Mertoun and Mellendean flocks—the former owned by Lord Polwarth, and the latter by Miss Stark—were far ahead of all others. The highest price obtained this year was £115 for a splendid Mertoun ram destined for Australia. This is the highest price that has yet been reached. Previous to this year's sale, £109, the price of one of the Mellendean flock

in 1869, had been the highest sum paid. The average of Lord Pelwarth's lots this year was £30 10s; that of Miss Stark's £29 15s. 8d. The two leading flocks evidently maintained a close and even competition. The total number of entries was 1,802. An account and illustration of the Mellendean rams will be found in the October number of the *Ontario Farmer* for 1871, which gives a good idea of the form, full fleece, and noble bearing of these splendid types of the Leicester sheep.

At the late Swine Exhibition in Chicago, the second prize of \$500 for a collection of pigs, was awarded to our fellow-countryman, Mr. J. R. Craig, of Edmonton, who also gained other valuable prizes with the beautiful lot of imported Berkshires. Mr. G. Roach was another successful exhibition on the same occasion.

Mr. James I. Davidson, of Balsam, county of Ontario, has sold one of his Clydesdale mares, three years old, for \$1,000 in gold, to Wm. Moffat, Esq. Strongville, Cayahoga county, Ohio.

Quite a number of sheep have been killed in the northern part of Luther township by a wild cat or Canadian lynx. Messrs Jas. Hunter, Alex. Hunter, and Alex. Arnott, have been the principal losers.

A scheme is being matured among several capitalists and mechanics at St. Mary's for the establishment of large works for the manufacture of agricultural implements, engines and boilers. The plan proposed is to issue 800 shares for \$25 each, 200 of which are to be taken up by the employees in the shops and retained from their wages in the shape of percentage on their wages.

The *Gait Reporter* says that never before was there such scarcity of water in this part of the Province as there is just now. Wells, cisterns, ponds and even rivers are almost dry, and all descriptions of stock are suffering in consequence. Farmers are driving their cattle miles to water, and carting the precious liquid in barrels to their homes, while those living in towns have to exert themselves in many places to get enough for ordinary cleanliness. The Grand River has never been as low for years, and manufacturers along the banks have to submit to only keeping their factories open an hour or two a day.

An exchange says:—A word more, before Chicago is forgotten, about modes of extinguishing fires. Every one knows that fire is easiest put out in the beginning. Yet the tendency in America, of late years, has been to concentrate attention upon means of extinguishing great fires when under headway. The steam fire-engine is a grand invention; but we want also a cheap \$10 engine in every house, or every neighborhood, to attack fires at the beginning, while it is controllable. A garden-pump, delivering water through a hose, will, with three gallons of water, put out a very large and formidable fire.

The *Chicago Tribune* of November 4th, says:—A great improvement was apparent in grain circles yesterday. Since the fire the produce markets have been very weak, owing to a universal desire to realize on property held here, for the double reason that money was scarce, and insurance considered to be doubtful. Hence prices of grain fell with a

"looseness." Yesterday it seemed as if all the weak holders had sold out, the prices rallied. There is now reason to hope that our produce markets, which are so intimately identified with the commercial prosperity of the city, will be more healthy during the coming winter than usual. Grain has been sent eastward at the rate of 400,000 bushels per day, and the shipments are so far in excess of the receipts that the present rate of decrease would empty our elevators in about three weeks, leaving them free to receive the liberal quantities that will be sent in during the winter. If our present stock of grain could be converted into cash, it would add largely to the ability of the city to rebuild, though it is true that a considerable proportion of the grain is owned by parties not resident in Chicago.

The fires at Oakville, says the *Hamilton Times*, have been a very serious matter for some of the farmers. Many of them, instead of spending their earnings on buildings and dwellings, have laid them out on the improvement of their fences, etc. The fire of Thursday last was blown a distance of one mile and a-half from the "slashing" where it commenced running in a diagonal direction across a number of farms, and, as ill luck would have it, destroying the fences and the best pieces of woods and timber that could be reached. The consequence is that some valuable portions of timber have been entirely ruined, thereby entailing on the owners heavy losses. One proprietor reckons his \$10,000, another his at \$8,000, and others theirs at similar large figures. It seems as if incendiarism must be brought into the scene. Mr. J. Aiton, while quietly seated in his home on Monday night last, had his attention attracted by a glare of fire. In an instant after his barn, (containing 3,300 bushels of valuable grain, 80 tons of hay, winter feed and fodder for all his stock, four good horses, all his agricultural implements, a new thrashing machine and reaper, and other valuable effects) were in the grasp of the flames and were totally destroyed. The barns and buildings burned had only just been built at a large expense. Mr. Aiton estimates his loss at \$5,000; insurance only \$1,000. His fine building in process of erection, narrowly escaped the conflagration. The fires in the woods are smouldering over an area of many acres, and only await a wind to burst forth and enter the town. A heavy rain is the only safety.

SALE OF IMPORTED STOCK.—On the 26th ult., Mr. Cochrane, one of the most celebrated importer and breeder of pure stock, had a very extensive sale on his farm at Compton, one of the eastern townships, about 140 miles east of Montreal, at which were a large number of breeders and importers from Ontario and the United States. Mr. Roach of this city purchased twelve pure breed Berkshire sows (imported.) They are expected to arrive here today. Mr. Gomaus of Jarvis, purchased a valuable imported Cotswold ram, and several others from the Western section also purchased. Mr. Cochrane, we understand is now going to confine himself to the importation of cattle and horses exclusively, and hence the recent sale of swine and sheep. For the accommodation of those attending the sale from the west, a Pullman car was engaged by Mr. Cochrane and arrangements made to leave it on the siding at the nearest station to his residence as the train would arrive there about midnight, so that their sleep would not be disturbed. Those who

attended the sale speak in the highest praise of the hospitality of Mr. Cochrane on the occasion.

EFFORT OF IRRIGATION.—A correspondent of the *Country Gentleman* says:—We have a little experience in irrigation, which we will give for the benefit of others. Some 17 years ago we collected the water that ran in a highway some distance; led it into a small pond, and then, by ditches, over half an acre of meadow. This simple transaction cost half a day's work for two men and team, and no expense since. We are sure that we have obtained twice the quantity of hay for the past sixteen years, or in other words, eight tons of hay extra in that time, worth on an average \$10 per ton—\$80 for \$3 worth of work irrigating. The quality of the grass has also improved. It is, the larger part, now blue grass, very thick and tall, from 2 feet 6 inches to 3 feet above the cutter-bar, which proves this grass the most reliable for irrigated meadows as it steadily and surely runs out all others in our meadows; but on dry soil it is not a success with me, and we think it a waste of seed to sow it there.

SHOW OF THE YORKSHIRE AGRICULTURAL SOCIETY.—The Thirty-Fourth Annual show of the Yorkshire Agricultural Society was held at York on Wednesday, the 2nd of August, and the two following days. The weather was favorable, and the financial results were very satisfactory. Twenty-one thousand persons visited the grounds on Thursday, the greatest number that has ever attended in one day, in the history of the Society.

Bell Weekly Messenger says that the Shorthorns, which comprises nearly the whole of the cattle department, were an excellent collection; the best ever seen at a Yorkshire show. There was a fine display of long woolled sheep, in which the Leicester shearing rams were never surpassed at any previous show of the Society. The Leicester aged rams were also very fine. The Lincoln sheep were well represented, and Shropshire Downs were excellent. A show of fox-hounds took place on Friday, the last day of the exhibition.

Mr. Dalziel, of Chesterfield, whose imported Leicester sheep attracted so much attention at the Blenheim show, has sold them for \$200 each. Something of a price to pay for a sheep, some people will think, but none know the value of the animals better than the purchasers themselves, as they are all more or less noted breeders. The names of the purchasers are Adam Oliver, Downie; Jas. Cowan, of Waterloo, and Mr. Thompson, of D. mafries. We require more of such enterprising farmers, and we say "more power to their elbow," or rather elbows."

The *Mark Lane Express* gives the particulars of the sale of Mr. Sheldon's shorthorns at Brailes. The highest price was 415 guineas for a cow. The average price of the cows was £112 9s 5d; that of the bulls £44 4s 2d.

Arts and Manufact.

WHITENING WOOL

The following particulars respecting a new process of giving a beautiful white color to wool are condensed from an article upon the subject in a German industrial journal. The quantity of ingredients mentioned is intended for about 500 lbs. of dirty wool, but of course a similar proportion

could be maintained for a greater or less quantity. Make a bath by dissolving in warm water 2 lbs of alum, 18 lbs. of cream of tartar, 1 lb of sulphuric acid, 18 lbs of starch, 6 lbs. of sulphate of indigo and 3 lbs of orchil. Immerse the wool in this bath at a temperature of 122 Fahrenheit for three-quarters of an hour. In this way the wool will get such a whitish tone that many may be satisfied with, it, but the white may be made much deeper by rinsing the wool out in clean water, and then transferring it for a short time to a weak bath consisting of a solution of 1 lb. of chloride of barium. This, it is said, gives a rich satin whiteness to the wool so treated, and at the same time considerably increases its weight. It is also alleged that the wool does not loose its natural softness and is easily wrought up by the manufacturer. If the plan possesses the advantages attributed to it, the price of the chemical's used cannot be much, and some of our agricultural friends might put it to the test upon a small quantity of wool. If the plan were found successful, the baths could probably be made up as they began to diminish, and thus the expense of operating on large quantities of wool would be reduced comparatively.—*Queen's Journal*.

USES OF CARBOLIC ACID.

The *Journal of Applied Chemistry* says: In pasting wall papers, posters, &c., especially where successive layers are put on, there arises a disagreeable effluvia, which is particularly noticeable in damp weather. The cause of this is the decomposition of the paste. In close rooms it is very unwholesome, and often the cause of disease. In large manufactories, where large quantities of paste are used, it often becomes sour and offensive. Glue, also has often a disagreeable odor. If, when making paste or glue, a small quantity of carbolic acid is added, it will keep sweet and free from offensive smells. A few drops added to mucilage or ink prevents mold. In whitewashing the cellar and dairy if an ounce of carbolic acid is added to each gallon of wash, it will prevent mold and prevent the disagreeable taints often perceived in meats and milk from damp apartments.

Another great advantage in the use of carbolic acid in paste for wall paper, and in whitewash, it will drive away cockroaches and other insect pests. The cheapest and best form of carbolic acid is crystal which dissolves in water or liquifies at an excess of temperature.

THE ADULTERATIONS OF PERUVIAN GUANO, AND HOW TO DETECT THEM.—Peruvian guano is frequently largely adulterated with clay, plaster of Paris, ochre, and inferior phosphatic guanos. We have often examined Peruvian guano containing from 30 to 60 per cent of fraudulently added earthy or other useless matters. When genuine and of good quality, this kind of guano has a light brown or greyish colour. It consists of powder commingled with hard lumps, which on being broken, exhibit a light colour and crystalline appearance. A bushel of good guano weighs about 70 lbs., whilst adulterated kinds often weighs more than 100 lbs., per bushel. A rough test of the purity of the article is to burn $\frac{1}{3}$ of an ounce of the suspected

sample upon a piece of tin or iron placed on a clear fire. If the residue be not more than $\frac{1}{2}$ or an ounce, the guano is probably pure; but if the residue amounts to $\frac{1}{2}$ an ounce, the sample is either extremely inferior or grossly adulterated. Guano adulterated with ochre or clay has usually a dark brown colour, and it is much colder to the touch, and feels heavier than good Peruvian guano.—*Cassell's Technical Educator*.

RENDERING WOOD WATER-TIGHT.—Dr. Scherzer, an Austrian official at Peking, has sent to his government some specimens of a Chinese composition called "Schioicas," which has the property of making wood and other substances perfectly water-tight. He says he has seen in Peking, wooden chests which had been to St Petersburg and had come back uninjured, and that the Chinese use the composition also for covering straw baskets, which are afterwards employed for carrying oil long distance. Cardboard, covered with the composition, becomes as hard as wood, and most wooden buildings in Peking have a coating of it. It consists of three parts of blood, deprived of its fibrine, four of lime and a little alum.

The *Iron Age* says:—"An American inventor has, we are informed, deposited at the General Land Office, at Washington, specimens of pig iron and tin salts for chemical and manufacturing uses, reclaimed wholly from otherwise useless scraps of tin plate."

The *Rural American* says to oil an axeltree, first wipe the spindle clean with a cloth with spirits of turpentine, and then apply a few drops of castor oil near the shoulder and end. One tea-spoonful is sufficient for the whole.

Our Country.

OUR COLD WEATHER.

The more even nature of the weather in Canada must strike old country people favorably. Considering the absurd stories about our climate which are widely circulated at home, we have a right to expect emigrants to be agreeably surprised with the reality. In a geography published in Britain, the cold of Canada is represented as being so severe that no part of the body can be exposed during winter without the certainty of being frost-bitten, and the entire person must be enveloped in furs before venturing out of doors!

In the April number of Spurgeon's *Sword and Trowel* for 1870, is an article on the distinguished missionary, Wm. Burns. In this article occurs the following language:—"In Canadian wilds it is not unusual for people to get weather-bound; and if excuses for not keeping a preaching appointment, or for not filling up one's pew, can ever be pleaded conscientiously, it is when the primitive roads, enveloped in snow-drifts, only allow the preacher or hearer to be dragged to chapel during a lull in the

storm by a *team of twenty horses* at the rate of a mile an hour."

What will Canadians think of this picture of Canada experience, drawn in this enlightened day in the great city of London, only ten days distant from the land so misrepresented? Who among us ever saw such snow-drifts, such a team—unless drawing masts—or such an accomodating lull?

This descriptive piece partakes of the character of one on the Falls of Niagara, to be seen in a "Reader" once extensively used in common schools, wherein it is stated that Indians in their canoes have been known to descend in safety the mighty cataract, and which is as truly true as the legend of Chaudiere at Ottawa.

In a Gazetteer of no mean pretensions, it is stated that the great Chaudiere is the mouth of a subterraneous channel whose extent and direction is unknown; that a cow which had fallen into its boiling waters disappeared, but came up all right at Foxe's Point, ten miles below. It happens For the Point is more than twice ten miles down the river; but a few miles makes no difference in a big story.—*From "Rustic Jottings from the the Bush," in New Dominion Monthly for November.*

TRIALS OF NEW SETTLERS IN CANADA.

Another trial claiming notice is that of wild beasts. Bears have carried off children, indulged in fresh pork, and hugged the huntsman to death; but such occurrences are rare, and generally Bruin prefers running to fighting. He prefers vegetable diet to animal, and loves such dainties as nuts and berries. Green corn and green oats are especial favorites, and the back settler has oftentimes had to mourn the destruction of much of his crops by bands of these marauders. The racoon, too, is an efficient hand in this kind of work, being at once with the bear in the opinion that green corn is good eating. These freebooters occasionally pay dear for their good cheer, and in turn supply the owner of the crops with excellent meals from their flesh, while their skins can be sold, or manufactured into sleigh robes.

In securing such gentry, the dead-fall, the trap and set gun, are common means employed. On one occasion the writer had the good luck to kill two bears at one shot with a gun—the accomodating animals pulling the trigger themselves, thus committing suicide. Another method of dealing with these robbers is, erecting stages in the invaded fields and shooting them therefrom, without the intervention of judge or jury. An old veteran settler, who had fought under Sir John Moore and in nearly

every battle in the Peninsular War, tried the stage plan to compass the enemy; but always did so with fixed bayonet, in case, as he observed, of coming to close quarters. One night as he stood sentry, a formidable fellow in dark dress entered an appearance, and began, as usual, to feast on our hero's corn. A well-aimed shot stretched Bruin on the ground; but to make all sure, the gallant warrior charged and gave the foe the full benefit of his trusty steel.

Wolves are more dangerous and more destructive customers. Many a flock of sheep has been thinned, and sometimes all destroyed by their incursions— Sometimes they will attack a man. An instance within the writer's knowledge occurred several years ago. One cold winter night, as the school-master of a back settlement was passing through a strip of woods between two clearings, a numerous pack of these ravenous animals fell on his track, and set up a most unearthly howl that well nigh frightened the poor pedagogue out of his wits. He concluded it was all up with him as they came bounding towards him. Fortunately he was young and nimble, and having no desire to be made a supper of by such fellows, he managed to climb a tree just in time to save his skin. His cap and mittens, in the hurry, were left behind,—these the disappointed scamps tore to shreds, and evinced their rage by gnawing the bark of the tree and scratching the snow at a furious rate. The unfortunate school-master was serenaded for some two hours by the most unmusical sounds that ever saluted human ears. Each hour seemed a day, and, as he shivered aloft, he began to think seriously of the likelihood of freezing to death or falling down to be eaten up after all. However, longer days were in store for him. The pack left for other game, and he escaped, and yet lives a useful member of society. More than thirty winters have passed over the head of our friend since he was "treed" by wolves, and his hairs are whitening by the frost of age; but he retains a vivid remembrance of the event, and gratefully acknowledged the good hand of the Almighty in sparing his life.

Other animals are troublesome and thievish, particularly in invading the hen-roost. The porcupine and skunk are occasionally unpleasant neighbors—the former by lodging its quills in your dog's body, and the latter by the horrid stench by which you recognize its presence. Both these, however, act on the principle of letting alone if left alone; but Master Fox, whose morality is much more lax, is a thief of the first water. Many times does he disgust the good wife by large drafts on her poultry yard, thereby disappointing her of an intended roast or choice fowls for market.—*From "Rustic Jottings from the Bush," in New Dominion Monthly for Nov.*

Hearth and Home.

TEA—WHAT IT IS.

Tea is raised in Hindostan, Corea, Assam, Java and Brazil, and has been attempted in Southern Europe, and they all produce an inferior tea. Some efforts have been made in the United States, but of the results as to quality we are not informed. If our Eastern China will produce good tea, that will continue to be the great tea garden of the world. That the plant will grow well in the Southern United States we know, but that a good flavored tea will be produced we have doubts, from the experience of other countries. The Hanan teas are of three qualities, named from some particular localities. These are the black teas mostly exported to England. The class of Congou teas called Moning, are from another province, and resemble in character the two proceeding. It is said to have an earthy smell and taste derived from the soil in which the plant grows. The leaf is usually small and black, but the infusion is strong and of an agreeable flavor.

The tea was formerly in common use under the name of Bohea, is a product of the borders of Poyang Lake, and many years ago was the most common tea exported from Canton. The leaf is of a dark, red colour, open and coarse, producing a pale red infusion, which is not highly esteemed. The Souchong is one of the black teas, in former days in great repute, and now is in use under different names for its varieties. The leaves are reddish, and the infusion is of the same colour.

The Pekoe is the most delicate of all black teas. Its name means "white hair," from the down on the leaves. It consists of the earliest leaf buds, collected as they are just bursting in, Spring, while the down is not yet changed. The leaf has a soft downy appearance. There are four varieties of Pekoe varying in colour, and appearance.

The black tea known as Oolong, "black dragon," are produced near Amoy and east of the Bohea hills. These are very fragrant and highly esteemed. It has a long black curled leaf. The infusion is pale and delicate, being aromatic and agreeable. It is a high priced black tea, often bringing in Shanghai, \$1,50 per pound.

Green teas are from a range of low hills, extensions of the Bohea hills stretching north and west of 28° to 35°. There are three classes of green teas, taking their names and character from the sections of country in which they are produced. Each of these different classes furnish six varieties, viz., Hyson, Young Hyson, Hyson Skin, Twankay, Imperial, and Gunpowder.

Young Hyson was formerly considered the best

of green teas. Its Chinese name means "before the rain," because it was picked when the leaves first unfolded. Fine tea of this class is of a bright, greenish, grayish color, with a burnt flavor. The leaves are, of course, immature, varying in size and appearance.

Hyson is a well matured leaf, curled and twisted, of a bright, green color, sometimes shining. The name in Chinese means "vigorous spring." The infusion of the best tea is a pale straw color, becoming darker as the tea is of inferior quality.

The Hyson Skin is the refuse of the two preceding varieties, often containing a considerable quantity of dust. It resembles in qualities the teas from which it is separated.

The Twankay is so called from the river Twan in the district which it grows. The leaf is open and bright, and resembles Hyson in make. It is not generally considered a first class tea, but some samples have turned out equal to good Hyson.

The Imperial and Gunpowder are foreign terms applied to these teas. The Imperial is known by a Chinese word meaning "round pears," the gunpowder by words that mean "sesamum pearl." These teas have the same characters, the imperial being the largest leaves picked out of the lot, and are highly esteemed teas, and are among the highest priced teas in the market.

There is an immense business carried on in Canton, and perhaps in other places, in manufacturing teas, to suit the market. The teas are brought to the market, and they are worked over and adulterated to make them appear what they are not. They are known as Canton teas. The ordinary green teas are dyed by sprinkling them with a mixture of Prussian blue and plaster of Paris, and then glazing them by rolling them in a heated pan. They are scented by the flowers of the olive, the jessamine, and gardenia (Cape jessamine). These flowers are cultivated in great quantities in the neighborhood of Canton, and sold to the tea dealers.

—*American Grocer.*

A RARE BOY.—A gentleman has informed us of a humane act on the part of a boy which we commend for imitation to all our readers, and especially to the young. A little bird fell from its nest during one of the recent violent storms. This boy picked it up tenderly, put it on a fence near the tree, and with true delicacy walked away, so that the anxious parent bird might not be frightened to take the little creature back to the nest.

An honest reputation is within the reach of all men; they obtain it by social virtues, and by doing their duty. This kind of reputation, it is true, is neither brilliant nor startling, but it is generally most conducive to happiness.

He learns much who studies other men: he also learns more who studies himself.

Happiness grows at our own firesides, and is not to be picked up in the stranger's gardens.

To bring forward the bad action of others to excuse our own, is like washing ourselves in mud.

Innocence, thou art genuine only when, as a child, thou knowest not thyself; the moment of thy consciousness is that of death.

He who is conscious of his ignorance, viewing it in the light of misfortune, is wiser than one who mistakes superficial polish for knowledge.

The tears of beauty are like clouds floating over a heaven stars, bedimming them a moment that they may shine with a brighter luster than before.

RECEIPTS.

SUGAR CAKES.—One pound of sugar; six eggs three quarters of a pound of butter; one nut-meg; two teaspoonfuls of soda; one cupful of cream. To be baked in a quick oven.

HARD GINGERBREAD.—One quart molasses; two cupfuls of sugar; three-quarters of a pound of lard and butter; one cupful of ginger; one teaspoonful of black pepper; and a tablespoonful of cloves, cinnamon, and allspice.

CHOCOLATE CAKES.—One pound of sugar; half a pound of grated chocolate; the whites of eight eggs; mix these ingredients together, and stir them for half an hour; then mix in some cinnamon, cloves or vanilla, and add six ounces of flour. Butter a pan, and drop small cakes upon it baking them in a cool oven. It is well to add to the above ingredients, two pounds of almonds which have been beaten fine in a mortar.

HARD GINGER CAKES.—One pound of butter; one quart molasses; one pound of brown sugar, which has been dried a little; three pounds of flour; half a paper of ground ginger; a good sized cup of milk; and one nutmeg, grated. Roll the dough very thin.

FLOATING ISLAND.—Beat the white of ten eggs until they are stiff, and then add to them four tablespoonfuls of sugar, and enough jelly to cover it; float some sponge cake on a quart of milk, and put the beaten egg on the top of it.

FARINA 1.—Put together one quart of milk, one tablespoonful of sugar, two tablespoonfuls of farina, and one teaspoonful of extract of almonds. Boil for twenty minutes, stirring constantly. Dip your jelly moulds into cold water, and then pour in the farina. Let it stand until it is quite cold.

FARINA 2.—Put one pint of milk over the fire, and when it comes to a boil, stir in two and a half tablespoonfuls of farina, and boil it for thirty minutes. Beat the whites and yolks of two eggs separately, and after the farina has cooked twenty minutes add the eggs to it, also two tablespoonfuls of sugar, and just enough essence of almonds to flavor it.

LEMON SYRUP.—Take the juice of twelve lemons, grate the rind of six in it, let it stand over night; then take six pounds of white sugar, and make a thick syrup. When it is quite cool, strain the juice into it, and squeeze as much oil from the grated rind as will suit the taste. A tablespoonful in a goblet of water will make a delicious drink on a

hot day, far superior to that prepared from the stuff commonly sold as lemon syrup.

TO DRIVE RED ANTS FROM THE HOUSE.—Drop some quick lime on the mouth of their nest and wash it with boiling water; or dissolve some camphor in spirits of wine then mix with water, and pour into their haunts; or tobacco water, which has been found effectual. They are averse to strong scent. Camphor will prevent their entering a cupboard, or a sponge saturated with crocote.

Poetry.

BACKBONE.

When you see a fellow mortal
Without fixed or fearless views,
Hanging on the skirts of others,
Walking in their cast-off shows,
Bowing down to wealth or favour,
With abject, uncovered head,
Ready to restrict or waver,
Willing to be drove or led,
Walk yourself with firmer bearing,
Throw your mortal shoulders back,
Show your spine has nerve and marrow—
Just the thing which he must lack.

A stronger word
Was never heard
In sense and tone
Than this backbone.

When you see a theologian
Hugging close some ugly creed,
Fearing to reject or question
Dogmas which his priest may read,
Holding back all noble feelings,
Choking back each manly view,
Caring more for forms and symbols
Than to know the Good and True,
Walk yourself with firmer bearing,
Throw your mortal shoulders back,
Show your spine has nerve and marrow—
Just the thing which he must lack,

A stronger word
Was never heard
In sense and tone
Than this backbone.

When you see a politician
Crawling through contracted holes,
Begging for some fat position,
In the ring or at the polls,
With no sterling manhood in him,
Nothing stable, broad or sound,
Destitute of pluck or ballast,
Double minded all around,
Walk yourself with firmer bearing,
Throw your mortal shoulders back,
Show your spine has nerve and marrow—
Just the thing which he must lack.

A stronger word
Was never heard
In sense and tone
Than this backbone.

A modest song and plainly told—
The text is worth a mine of gold,
For many men most sadly lack
A noble stiffness in the back.