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THE ONTARIO FARMER,

A MONTHLY JOURNAL OF

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

VOL. III.

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No. 6.

The Farm.

HINTS FOR THE MONTH.

It has been well observed, that "in no month of the year, are the prose and poetry of farm life more mingled, than in the present." The bright sunshine, the blooming flowers, the verdant fields and forests, the chirping insects, the singing birds, and the "little busy bees," combine to form a scene in which activity and beauty are harmoniously blended. It is nature teaching man to labour cheerfully,—to let work and gladness go hand in hand. All can appreciate the poetry of pleasant fields and pretty flowers, but it is rather prosaic to plant potatoes and hoe corn. Now begins the fight with weeds, and a stern fight it often is. Nevertheless it is a battle in which there must be no cowardly shirking, and in prosecuting which, the farmer needs many of the qualities of the true soldier. Corn, whether for green fodder, or a crop of ears, may still be planted. Indeed, it is hardly advisable in this climate to put corn into ground before the beginning of June. Our Farmers should grow more of this valuable cereal. Millet may also be sown early this month, and is useful both for green forage and for curing the same as hay. It is not even now too late to get a fair crop of mangolds, and carrots, if these have not yet been sown. Better put them in late than be scant of roots for winter feeding. The middle of this month is the time for getting in turnip seed, and we earnestly counsel all our readers by all means to grow a patch of these valuable esculents. No farming is worthy the name

which does not include in its regular course, turnip growing. Choose the best bit of ground at command, and if you can get it, sow superphosphate, at the rate of about 200 pounds to the acre, before drilling in your turnip seed. It will hasten the growth of the young plants, and increase the crop amazingly. Manure-making is always seasonable, and should not be lost sight of, anytime in the year. Husband cattle droppings, poultry dung, privy ordure, kitchen refuse, weeds from the garden, and compost ail with swamp muck, or ordinary soil. Let no fertilizing material go to waste. Barns and sheds will soon be needed for storing away hay and grain. Let them be in good order before the hurry of haying and harvesting comes on. Look after the tools that will then be needed. The mowing and reaping machine should be carefully overhauled, and scythes, cradles, rakes, &c., provided and put in working order. This ought to be a busy month in the dairy. June butter is generally considered the best produced during the year. Let it be carefully made, and it will command the highest price going. Or if it be preferred to keep it until winter, which may be done very well with care, it will fetch a much better price than without doubt. The strictest cleanliness needs to be observed in all dairy operations. Richer pastures do not grow than are to be found in Canada, and by skillful manufacture, our butter and cheese may challenge the world. Sheep washing and shearing will demand attention early this month. Some farmers do this job too soon. It should be left until we have settled warm weather. The loss of their winter over-coats all of a

sudden, must be a severe shock to these most useful, but too often ill-cared for animals. Even in thoroughly warm weather they should receive extra housing on chill nights and during cold storms just after shearing. By the end of this month, it will be time to cut the first crop of clover for seed. Sometimes animals become bloated from eating greedily of fresh clover. The *Annual Register of Rural affairs* prescribes a dose of pulverised charcoal as "the best remedy" in such cases. Quantity to be given, about a tea-cup full to an average sized cow, and in proportion to other creatures, according to their age and weight. It should be mixed with water, and poured down the throat from a junk bottle. Orchards should have the soil cultivated and mellowed, and a liberal supply of well-rotted manure should be harrowed in so that the roots may get a supply of nutriment during the fruiting season. A mulching of straw or old litter is very useful in dry hot weather. Plenty of good fruit is not to be raised without some trouble, any more than other crops. Look out for and exterminate the borer before he gets far into the wood. Destroy tent and other caterpillars, if it be not already done. Watch for the curculio, that pest of the plum orchard. Two ways of getting rid of it are recommended by experienced fruit growers. The first is to gather up the young fruit that falls, and either burn it or feed it to the pigs, that the larvæ may be killed. Pigs and poultry allowed to run among the plum trees will do this work effectually. The second plan is to jar the plum trees, and so shake off the perfected insects. White sheets should be spread for them to fall on, that they may be readily seen, and destroyed. This is a busy month in the garden—weeding, thinning, hoeing, transplanting, watering, and sowing late seeds, will give the gardener enough to do. Cabbages, cauliflowers, early celery, and tomatoes, must be transplanted this month. Cucumber and melon plants will need watching, and defending from

the ravages of the striped bug. Sowing seeds at intervals of a few days is recommended, that they may have a succession of tender leaves to feed upon, and so a supply of the older plants may get out of harm's way. It is in the early stage of the plant that the bug feeds on it. Scattering a bes, plaster, and lime, also destruction by hand, are practised to get rid of these marauders. Cooping a hen with a brood of young chicks near the vines is a good plan. The chicks will devour the bugs, and do the plants no harm. Lettuce, beans, peas, and radishes, may be sown at intervals, to keep up a supply as wanted. Gooseberry and currant trees must be watched, and on any sign of the worm or slug appearing fresh lime should be sifted among the branches. The heads of fruit trees may be shaped, and a too rampant growth prevented by judicious pinching of the young shoots. This is an important month with bees, as it is the time for the new swarms to issue from the hives. Every bee-keeper should supply himself with a good modern text book on apiculture. He will find many suggestions in such work, of especial value about swarming time.

PLANT-FOOD IN THE AIR.

Chemical experiments prove what observation and reflection might almost suggest, viz, that the atmosphere is a vast storehouse of food for plants. The influence of the air on soils has often been remarkably evinced. Clay soil exposed to its action under a process of decomposition. The mineral substances which it contains become so soluble, and are rendered assimilable by plants. The surface of the soil is made porous and powdery, and what was a stiff clay is changed to fine friable earth. But beside thus acting on the soil, and producing this two-fold effect of liberating the stores of food already in the ground, and improving the mechanical-condition of the soil, the atmosphere directly supplies plant nutriment. Carbonic acid is the chief source whence growing plants get their carbon. There is only a small proportion of this in the air—four parts in every 10,000,—and at the first blush, this would seem but very meagre source of supply. But when we consider the enormous volume of the atmosphere, and the perfection of the apparatus

with which plants are furnished for the purpose of absorbing the carbonic acid diffused around them and everywhere wafted toward their leaves, we need not wonder that it is found to be sufficient. The air in the soil itself contains vastly more carbonic acid than the atmosphere which rests upon it. M Boussingault found that the air in sandy soil recently manured, contained 217 parts of carbonic in every 10,000 parts. Shortly after rain, the air from the same soil was found, on analysis, to contain 974 parts of carbonic acid. This fact explains the wonderfully rapid growth of some crops after a copious rain. The quick starting of turnips on well-manured land, just after a shower arises from the sudden and ample supply of carbonic acid which is furnished. The atmosphere consists chiefly of two gases, oxygen constituting about 21 parts, and nitrogen 79. Mixed with these are carbonic acid, ammonia, and nitric acid, in certain small proportions. Water is also present in the form of vapour. Minute proportions of phosphoric acid have also recently been detected in the atmosphere by a French chemist. There is abundant proof that it is chiefly the carbonic acid of the atmosphere which nourishes vegetation. It is calculated, indeed, that at least three fourths of the dry substance of plants is derived from this source. The minute vessels and tissues of plants from so many factories and distilleries in which starch, gum sugar, and other substances found in all vegetable productions, are prepared so as to subserve the purpose of plant life.

This curious provision of nature explains many of the phenomena which we behold. It has much to do with the efficacy of fallowing. Rotation of crops is based to a considerable extent upon it. The broad-leaved plants which absorb largely from the air, are most important and useful members of rotation. We see also how the fertility of uncultivated places and old woods is maintained. Soils which nature only fertilizes keep producing, and still retain their strength. The long-continued experiments of Mr. Lawes, at Rothamstead, show that an average of about sixteen bushels of wheat per acre can be raised year after year on the same ground, without manure, the soil being thoroughly cultivated and often stirred, thereby admitting the air. But for this provision of nature, land that is neither manured nor tilled in any proper sense would become incapable of bearing a weed. We thus understand the meaning of the axiom, that "tillage is manure." It lets the fertilizing material of the atmosphere gain access to the soil, and so keeps up its productiveness.

The great practical lesson thus taught may be expressed in three words—STIR THE SOIL. Let plough, harrow, scuffler, cultivator, spade, fork, rake, hand

hoe, be in constant requisition. If the air is to circulate freely in the soil, it must have ready admission to it. A hard, caked surface shuts out the food supply. Hence all through the growing season, there should be repeated loosenings of the ground. Even when clear of weeds, the land should be stirred up and kept in porous condition, that the air may get into it and feed the growing plant.

We also perceive the impolicy of over-thick seeding and planting. A stunted growth must result from this, because the air cannot freely circulate among the growing plants, and supply the needed nutriment.

CORN FOR FODDER.

It is very doubtful whether any other green forage plants can be named, which, in this climate, yields so large a product per acre as Indian Corn. For soiling purposes, its value is very great. Sown about the first of June, so as to incur no risk from frost, it grows with wonderful rapidity, its broad long leaves drinking in from the sun and air the nutriment suited to its nature. It is valuable too as a crop for fodder, but the difficulty is so to cure and stack it as to avoid mildew and rot. This, however, can be done by proper care and attention. In the first place, to have good fodder, corn must be cut before the leaves and stalks begin to dry up;—in fact while it is yet green. So soon as the corn is grazed it may be cut without detriment to the grain. The proper time may easily be ascertained by this rule even when corn is sown broad-cast, as there will always be stray stalks around the edges of the patch, which will mature ears. The second step is to put the stalks up in shocks. Where material, such as oat straw, &c., can be had for bands, the best way is to make the bundles of a handy size and then stack them somewhat after the manner in which grain sheaves are made into shocks. After husking, if a crop of grain has been the main object,—or in the case of broad-cast corn when the stalks are pretty thoroughly cured, the third part of the process will need attention, viz: storing up for winter use. A great blunder is often committed, that of stowing away corn stalks after the fashion of hay in a mow, in the barn. This is invariably to spoil the whole. No matter how dry corn fodder may appear, there is always enough moisture in the butt of the stalk after standing for weeks on the ground, to insure heat and mildew, when closely packed in a barn. It is better to make a stack in a convenient place close to the stables and sheds, and to build it in as loose a manner as is consistent with due protection from the weather. A good plan is to fix a stout pole some 15 feet long

into the ground and set the bundles around it, capping the whole so as to shed rain. Another good way is to make the stack entirely with corn bundles, first setting a row of bundles perpendicularly with the butts firmly against the ground, then a row on each side with the tops pressed firmly against the first row, and inclining at an angle of about 60 degrees. Next a tier on each side resting on the bands of the last row. Then begin at the ground again and carry up a tier on each side as before taking care that the last row of each tier shall cap the rick. Put up in some such way as this, so as to expose the stalks to the air, and yet protect them from the rain, they will keep fresh and good, and when the snow is on the ground, and winter's reign established, they will be greedily eaten by sheep and cattle, for both of which they form very nutritious food.

EXHAUSTIVE SYSTEM OF AGRICULTURE.

Johnstone in his "Chemistry of Common Life," gives the following graphic description of the system of farming commonly adopted by the first settlers on this continent

Man exercises an influence on the soil, which is worthy of attentive study. He lands in a new country, and fertility everywhere surrounds him. The herbage waves thick and high, and the massive trees lay their proud stems loftily towards the sky. He clears a farm from the wilderness, and ample returns of corn pay him yearly for his simple labors. He ploughs, he sows, he reaps, and from the seemingly exhaustless bosom the earth gives back abundant harvests. But at length a change appears, creeping slowly over and gradually dimming the smiling landscape. The corn is first less beautiful, then less abundant, and at last it appears to die altogether beneath the scourge of an unknown insect or a parasitic fungus. He forsakes, therefore, his long cultivated farm, and hews out another from the native forest. But the same early plenty is followed by the same vexatious disasters. His neighbors partake of the same experience. They advance like a devouring tide against the verdant woods, they trample them beneath their advancing culture, the axe levels its yearly prey, and generation after generation proceeds in the same direction—a wall of green forests on the horizon before them, a half-desert and naked region behind. Such is the history of colonial culture in our own epoch; such is the vegetable history of the march of European cultivation over the entire continent of America. No matter what the geological origin of the soil may be or what its chemical composition; no matter how warmth and moisture may favor it, or what the staple crop it has patiently yielded from year to year, the same inevitable fate overtakes it. The influence of long-continued human action overcomes the tendencies of all natural causes. But the influence of man upon the productions of the soil is exhibited in other and more satisfactory results. The improver takes the place of the exhauster, and follows his footsteps on these same altered lands. Over the

sandy and forsaken tracts of Virginia and the Carolinas, he spreads large applications of shell marl, and the herbage soon covers it again, and profitable crops; or he strews on it a thinner sowing of gypsum, and as if by magic, the yield of previous years is doubled or quadrupled; or he gathers the droppings of his cattle and the fermented produce of his farm-yard, and lays it upon his fields, when the wheat comes up luxuriantly again, and the midge and the rust and the yellows all disappear from his wheat, his cotton and his peach-trees. But the renovator marches much slower than the exhauster. His materials are collected at the expense of both time and money, and barrenness ensues from the easy labors of the one, far more rapidly than green herbage can be made to cover it again by the most skillful, zealous and assiduous labors of the other."

ARTISTIC TREATMENT OF SMALL FARMS.

It will never do for us to sanction the divorce of landscape from our humbler rural intentions: else the great bulk of our wayside will be left without law of improvement. Not only those broad and striking effects which belong to a great range of field and wood or to bold scenery come within the domain of landscape art, but those lesser and orderly graces that may be compassed within stone's throw of a man's door. We do not measure an artist by the width of his canvas. The panoramas that take in mountains are well, if the life and mists of the mountains are in them; but they do not blind us to the merit of a cabinet gem. I question very much if that subtle apprehension of the finer beauties which may be made to appear about a given locality does not express itself more pointedly and winningly, in the management of a three or five acre lawn, than upon such reach of meadow and upland as bounds the view. The watchful care for a single hoary boulder that lifts its scared and lichened bulk out of a sweet level of greensward; the audacious protection of some wild vine flinging its tendrils carelessly over a bit of wall, girt with a savage hedged growth; these are indications of an artist feeling that will be riotous of its wealth upon a bare acre of ground. Nay, I do not know but I have seen about a labourer's cottage of Devonshire such adroit adjustment of a few flowering plants upon a window-shelf, and such tender and judicious care for the little matlet of turf around which the gravel path swept to his door, as showed as keen an artistic sense of the beauties of nature, and of the way in which they may be enchained for human gratification, as could be set forth in a park of a thousand acres.—*Hours at Home.*

THOROUGH CULTURE.

A correspondent of the *Germentown Telegraph* writes:—

"Thorough culture and high manuring are essential to profitable farming, and this is the right mode of farming. If ten acres of land can be made to produce 20 tons of hay, is it not better than to cultivate twenty acres for the same amount? It is less labor to get twenty tons of hay from ten than from 20 acres.

"Supposing you are growing 25 bushels of shell-corn per acre. You can by applying more manure with thorough cultivation, get 50 bushels of corn. This might be increased to 75 or 100 bushels per acre. What is there to prevent? You can easily test this. Select a small piece of land in your corn-field; plough it a few inches deeper than heretofore, manure the ground thoroughly, at the rate of twenty cords per acre; plant good seed, then keep out every weed, and the result will astound you. Gardeners understand this principle, and they plough nearly two feet deep and apply thirty cords per acre, besides using large quantities of commercial manures. For many garden crops the surface of the ground two inches deep should be one-fourth manure. In this way, by keeping the ground moist, lettuce can be grown that is tender, large and nice and so of other crops.

"The fact is we have too much land. Says one. 'I have so much land, and must cultivate it all. What would you have me to do with it; give it away?' Better give it away than half cultivate it. Let it grow up to wood or use it for pasturage. Sell it. Perhaps that would be the best plan; take the money and improve the rest of the farm. A farmer has 100 acres in his farm and he raises as much stock and cuts as much hay and raises as much produce as the farmer who has 200 acres. Which therefore is the best farm—the smallest or the largest? I think you will see at a glance that the smallest is the best. I don't say but what the larger farm can be made as productive as the smaller acre for acre; but this is not often the case. One man from an acre of strawberries will get from \$500 to \$1,200; while another man will work over a large farm and only get this amount. Use brains; these if rightly applied, will give large crops from a small amount of land."

CULTIVATION OF BUCKWHEAT.

When buckwheat is sowed in the spring, or first part of summer, the hot weather which occurs when it is blossoming, prevents perfect fructification. Consequently there will be numerous clusters of kernels that will be blasted. For this reason the seed should be sowed, so that the hottest weather will have passed, by the time the buckwheat is in full bloom. Cool weather or at least cool nights are quite as essential to a crop of buckwheat, as hot days are for Indian corn. The point to be aimed at in every locality is, to defer sowing as long as possible and allow it sufficient time to mature before an early frost will destroy the crop. This period occurs at different times in different localities. In the latitude of Central and Western New York, the proper time for seeding is about the first of July. We have known buckwheat sowed as late as the 16th of July, which produced a bountiful crop; but in that latitude there is a great risk on account of the frost, if it is not sowed by the tenth of July. Our most successful farmers in this latitude, calculate to have their buckwheat put in as soon as the fourth of July; and in some seasons even when sowed at that time, frost appears so early in the fall as to almost destroy the entire crop. In some localities it may be sowed the latter part of July, and escape frost. If the soil where it is sowed be well pulverized so that it will vegetate immediately, and if the grain is put in by the fourth

of July or even by the tenth, a bountiful crop may be expected. When the ground is ploughed but once for a crop of buckwheat where the soil is heavy, it is often so dry and hard, and breaks up in such large lumps and clods, that many farmers in waiting for rain to moisten the soil previous to ploughing, are compelled to defer seeding until it is too late. But if the soil be ploughed in the spring, it will not become dry and hard by the time it is to be ploughed the second time, but will be moist and mellow; and the grain will vegetate soon.

Every intelligent farmer, who is located on a heavy soil, that is apt to plough up lumpy, understand the importance of ploughing it when it is just moist enough to turn up mellow. Buckwheat cannot be expected to vegetate in time, and flourish luxuriantly, and yield a remunerating crop when the soil is a mass of dry lumps.—*American Agriculturist*.

BONES AND ASHES.

Bones and ashes pass through the housekeeper's hands every day. Wood is still the chief fuel in the farm-house and the value of the ashes is pretty well understood. They are prized for the use they yield, and if there is a surplus from the soap-making they help the kitchen garden at the back door. The bones are generally thrown to the dog and lost. Now if the careful housewife would save the bones as regularly as the ashes, she would practise a wiser economy and help her kitchen garden twice as fast. Bones are worth twice as much as ashes for manure, if dissolved, and the ashes will reduce them. Put both into a barrel in the cellar if you please, and after mixing them half and half, keep them constantly moist with soupsuds, the hotter the better. The suds should not be poured on in such quantities as to leach the ashes. In a few months the bones will be disintegrated, and the whole mass may then be mixed and will be an excellent fertilizer for the flower border or the kitchen garden.—*American Agriculturist*.

HINTS TO ROOT GROWERS.

Work your root land as early as possible. If you are going to use manure this spring on root land draw out as early as possible, spread and plough in so that the weed seeds will start. You will thus be able to fallow your land before June and July. The great secrets of successful root growing are—through pulverization of the soil, and perpetual warfar upon all noxious plants. Have the land tilled before planting time, and it will be a very slight matter to raise a good crop of roots.

PREVENTATIVE AGAINST THE TURNIP FLY.

We quote from the *North British Agriculturist* the following recommendations respecting methods

of preventing or mitigating the risk of damage by the Turnip Fly :

" Various methods have suggested to prevent the attack of the turnip fly when the plants are newly braided. Steeping the seed in oil, and afterwards dusting the seed with sulphur preparatory to sowing, has been found to be of considerable service. This is, however a still more certain method of prevention. Newly-slacked lime strewn thinly along the rut made by the seed-coulter of the sowing-machine at the time of the braiding the plants, proves a protection. We have also found a mixture of lime and soot very effectual in protecting the young plants as they put out the first leaves. When a small quantity of white turnip seed is sown in the hollows of the drills, the insects resort to the white turnip plants, preferring them to the Swede. This method of protecting the latter is more expensive than top-dressing the seed row with lime previous to the braiding of the plants. After the rough leaves are formed, little damage is caused by the turnip fly, but other insects feed on the leaves the black beetle being the most common. The most effectual to combat all insects is to push forward the growth of the plants by manure applied at the time the seed is sown, and after the plants come up to stir the surface frequently, but without injury to the turnip plants."

DEPTH TO SOW WHEAT.

A New Jersey farmer has experimented as to the depth of sowing wheat with the following result:—

Seed sown to a depth of—	Appeared above ground in—	Number of plants that came up.
Inches.	Days.	
1	11	Seven-eighths.
1	12	All.
2	18	Seven-eighths.
3	21	Seven-eighths.
4	31	One-half.
6	2	Three-eighths.
6	23	One-eighth.

It may be best clarified by means of a hot water bath. This may be readily improved by putting the jar containing it in a saucepan or boiler of water which should be placed on the fire, and boiled until the honey becomes perfectly clear, all impurities being removed by skimming as they arise. Store it in tight jars, and keep in a cool place.—London Journal of Horticulture.

The Live Stock.

HIVING BEES.

When bees are allowed to swarm naturally, everything should be in readiness before the swarming season arrives, so that when swarms come off there may be no confusion or difficulty in hiving. Hives should be kept cool, and if old, they should be well cleaned. If a swarm is seen issuing from a hive, do not get in a 'flurry,' but keep cool. Do not be so foolish as to blow horns, ring bells, and scare your

bees to the woods; but stand quietly and watch their movements, and nineteen times out of twenty they will cluster all right. As soon as they have settled, prepare to hive them, an operation which may be successfully done, and without the least difficulty, as follows:—

First—Bring a dish of cold water, and with the hand or a whisk of grass sprinkle the cluster well. This will make them perfectly quiet and easy to handle. Bring out a table, or if that is not convenient, spread a cloth or boards upon the ground, and if they are to be hived into a common box or straw hive, set it upon the table or place prepared for it, raise up one side an inch or more, and put under a stone or chip to hold it. Then shake your bees into a pan, basket, pail, or any dish that will hold them, and turn them down near the hive, and they will at once commence to enter. If it is desirable to have them enter faster than they are naturally inclined to do, take a wing and gently wing them in. As soon as all or nearly all are in, the hive should be carried to its stand, and well shaded if the sun is shining. New hives or newly painted hives should be shaded for several days, as bees cannot stay in an over-heated hive. If the bees cluster upon a limb, from which it would be difficult to shake them, the limb may be cut off with a saw and laid near the hive; the bees will soon leave and enter. Sometimes bees will cluster upon the body of a tree, when it is more difficult to get them off without irritating them. They should be well sprinkled, and very carefully brushed off with a wing or quill feather into a dish, and carried to the hive as before stated. An inexperienced person or novice, should in this case wear a bee-protector. It will give them courage, and they will move more carefully.

This plan of hiving will be found much better than the old method of shaking the bees into a hive, and then turning it over upon a table or board. I have known the queen to be killed by turning over the hive, and more or less bees are always killed in the operation. If moveable comb hives are used, they should be so constructed that the bottom board may be dropped at the rear of the hive for the purpose of putting in the bees when hiving. Swarms should never be allowed to stand where they are hived until evening, as is the practice with some, but should be moved at once to their stands, as some of the bees will go into the field to work in ten minutes after they are hived; and if left till evening large numbers will have commenced to work, and having marked the spot will return there the next day, and not finding the hive, will wander about, and many will be lost. Second swarms are generally far more irritable than first or top swarms; hence these are far more likely to sting; but cold water will soon quiet them, and they may then be hived with safety.

SHEEP WASHING.

The methods usually adopted for washing sheep depend upon the means at hand to the individual farmer. A thorough washing is, however of great importance, for upon a proper performance of this operation depends greatly the value of our wool as a marketable commodity. It is often done in a very hasty and inefficient manner. I have seen a flock of sheep driven three or four miles along a dusty road, penned in on the banks of the Grand River (where the current is very strong, taken out one by one, shoved into the water, and after being turned over by a man standing in the river, and slightly rubbed, a lowed to swim ashore and go off again along the dirty high road.

A roomy pond of clear stagnant water is preferable to a running stream. The water is usually softer, and the yoke or oil which is supposed to be forced through the wool by insensible perspiration, being of a very soapy nature, causes the wash to act more effectually. In running streams this soap is carried away with each sheep, and the water remains clear from first to last.

The sheep owing to the weight of fleece on its back, is in its normal state hot at all times, and particularly so in the end of May. A sudden plunging into cold water is therefore a very severe shock. The water in a stagnant pond, or in one formed by draining a creek has a chance of being well warmed before use, and this is another point in its favor.

Perhaps the most effectual plan is to combine these several ways. Let the sheep be seized by the fore-legs, and passed to a man standing in the stagnant and warm water. He should turn the animal in every direction; should squeeze out the wool well with his hand, and pass it on to one who is placed below, either in running water or under a shoot.

After two or three have been washed, we have good soapy water, which will far more effectually soften the wool and loosen all impurities, than will clear hard water; and these impurities will be entirely removed by a final immersion in the running stream. Moreover, the stagnant water being warm, will prepare the animal's body gradually for the colder, and will go away with that shock to the system caused by a sudden immersion of the sheep, which has sweated under the combined influence of a May sun and its own struggles with its captor.

All burr and tenacious impurities should be carefully and thoroughly removed, and the offensive matter collected round the anus, may, when thus softened, be drawn from the wool, thus saving many pounds of wool in a flock from the process of tagging at shearing time.

A clean pasture, and if possible a clear road to pasture should be provided until after shearing. The former is most necessary: for when the dews are heavy, if there be a patch of bare ground in the field, there will the sheep be found lying at night.

So important, indeed, has the subject of thorough cleansing of the fleece before shearing been considered by large breeders that some years ago the farming Society of Ireland recommended the use of a large tub of water warmed to blood heat, in which to place the sheep till the wool be well softened, and then to river wash, on the ground that "keeping the animal in cold water a sufficiently long time to wash thoroughly endangers its health; that fleeces

of a close pile can not be cleansed by the usual mode of washing, and that the extra labour required to wash sheep in tubs of warm water should be amply repaid, were the washings in these tubs carried out and applied as manure, the quantity of rich animal soap, which they contain making it one of the most fertilizing applications which can possibly be used."

It is better to allow a full week to elapse before shearing. The wool will then if it has been fine, be thoroughly dried, and some time is necessary for the oil or yolk to ascend from the body into the wool, by which the weight of the fleece is increased, and by which a great deal of softness and elasticity is imparted to the marketable wool.

C. E. W. in *Globe*.

RENNET.

At a recent meeting of the National Dairymen's Club, held in Utica, the subject of discussion being "rennet," Mr H. Lewis, of Frankfort, spoke as follows:—

We often speak of the agents employed in cheese making, and by common consent designate heat, rennet, acid and salts, as the agents employed in changing milk into cheese.

Again, we speak of cooking cheese and scalding cheese, at a degree of temperature below that of blood heat.

Rennet is in fact the only agent employed in changing milk into cheese, and the quality of the cheese from first to last depends entirely upon the milk used, the rennet employed as the agent, and the degree of skill used by the cheesemakers.

This may look to some at first sight like whittling cheesemaking down to a small point indeed; and so it is, when we consider the fact that success in cheese making depends upon our strict attention, and at the proper time, to all the minutia of the business.

Again, cheese making is the most difficult, the most perplexing, the most recondite of all trades or occupations.

Notwithstanding this, success in cheese making depends upon three things, as I said before, *pure milk, good rennet, and a keener cheese maker*.

I have named three things in the order of their importance. We sometimes find cheese of the finest quality made by persons without skill; but without the skill in the world concentrated in one person, we could not expect cheese of the best quality produced from bad milk and bad rennet.

If I am correct in placing rennet second in importance in cheesemaking, every dairyman must realize the advantage gained by preserving and preparing rennet for use in cheese-making, in its purity.

Heat accelerates the action of the rennet, and cold and salt retard its action; but from the moment of its introduction into the milk its work begins, and we first discover its work in coagulation, then in a continual hardening of the curd, by which the whey is rejected, and going on with its silent but important work in the cheese until that is brought to a state of ripeness which cheese must acquire to render it one of the best, and one of the cheapest, as well as one of the most nutritious articles of food.

How shall we prepare rennet, for use in cheese-making? Dip a sufficient quantity of whey from a sweet curd, or one-half gallon for each rennet to be used; heat is up to the boiling point, over a slow fire, and skim off all the albumen that rises to the surface.

Set the whey by until co'd, then turn the whey off from the albuminous matter at the bottom of the vessel, and to each half gallon of whey add one rennet and sufficient salt so that there will always be a small quantity of salt undissolved. By rubbing the rennets three or four times each day, for as many days, the liquid will be of sufficient strength for use.

Strain this into a jar to be kept for daily use, always keeping it supplied with salt undissolved.

Every time before dipping out for use, stir the liquid thoroughly.

The daily stirring will make the rennet of uniform strength, and also aid its keeping.

The rennet skins may be salted, and again dried, or put into another jar with half the quantity of whey first used, and by soaking and rubbing as before directed the liquid will, after a few days, be of about equal strength with that obtained at the first soaking, and may be strained into the jar with it.

The skins may now be returned to the jar, and sufficient whey added to cover them, a weight put on to keep them under, and sufficient salt to reach above the liquid.

The rennets will remain perfectly sweet any length of time, or until the jar may be wanted for a new batch of rennets. Then for each new rennet add a half gallon of whey as before; give the old skins a thorough rubbing and rinsing, after which they may be thrown away.

In preparing rennet for use in cheesemaking, two precautions are necessary. First, Every rennet should be carefully examined, so that no impure or tainted rennet will be put into the batch; and second, salt undissolved should always be kept in the jar while preparing it for use, and also in the jar from which the daily supply is taken.

APIARY IN JUNE.

June is the swarming month in the Apiary, and at least one new colony should be expected from each old stock. A hive from which no swarm issues should be examined. If they refused to leave for want of a queen, they will usually be found weak, when it is best to drive them out and unite them with some other stock. If a colony is strong a new queen, or a cell containing a queen, can be introduced from some other hive. If a hive has failed to swarm from diseased brood, drive them into an empty hive to commence anew. When two swarms issue at the same time, they are apt to settle together. To prevent this, sprinkle the bees of one hive with water, as they are about to start, which may be usually discovered by the commotion about the entrance of the hive a few moments before flying. The sprinkling will detain them until the first swarm can be hived. The first issue from a hive is usually large enough for a good colony, the second half as large, the third a quarter, consequently two of the second, or four of the third will be needed to make a swarm equal to the first. If second swarms issue late in the month, it is advisable to make one strong

stock by uniting two. It can be readily done within a day or two after issuing. It has been proposed to prevent the issuing of a second swarm by returning the old queen to the hive. This would on a young colony be likely to end in one of the following results: The queen might destroy all the royal cells, and go on laying eggs for three or four weeks, until another swarm had matured, when she would issue, leading out a second swarm. Or she might leave the royal cells undisturbed and issue the next day, taking with her a small swarm. Or she might entirely disappear without being heard of again; at any rate her presence would not be likely to prevent a second swarm. Prevention can be accomplished in the moveable frame hive, by cutting out the queen cells after the first swarm has issued, and after the young queen has taken her place, and not allowing any such to be perfected. If a second swarm can not be well disposed of otherwise, return it to the old stock. Hive it first, carry it near the old stand, and let it remain until next morning, when all the queens but one will usually be destroyed, as well as the supernumeraries in the parent hive. Shake out the swarm, and find and secure the queen; then put a few bees at the entrance, with something on which the rest may creep there, and they will all readily enter. All new swarms should be kept shaded during the middle of the day. When bees cluster in a crowd at the outside of the hive, it is time to add boxes to receive surplus honey. If the honey is intended for home consumption, a wood box will be sufficient; for marketing those with glass sides are preferable. They should not be more than five inches deep. The bees will work in them more readily if pieces of nice white comb are placed on the top. They can be fastened by dipping one edge in melted beeswax, and applying it before it cools. Old colonies should be induced to begin in the boxes before they swarm, as the bees will be more likely to finish up the work, than to begin after swarming, especially if the colony be not very strong. Remove the boxes as soon as filled. It is not usual; advisable to put on boxes immediately after hiving; the bees are likely to rear bread and store bee bread in them. It is safe to put them on after the swarm has been hived three or four days.—*American Agriculturist*.

REARING FOWL FOR MARKET AND EGGS.

THE BEST BREED TO REAR FOR MARKET.

The best breed of fowls to rear for the market, or as egg producers, depends upon locality; for while, in some places, one variety is deemed the best, in others it would prove the reverse. Our own opinion is that, for a market fowl, the Brahmas and Cochins will, under almost all circumstances prove the most desirable, they being less liable to disease, feathering up quickly, and can be bred to weigh, at from four to six months of age, eight to ten pounds. Another good table fowl is the Dorking (cock) crossed with the Brahma (hen). The flesh of this cross is sweet and nutritious, and acquires at early age the plumpness of the Dorking at maturity. There are other breeds, however, which are said to be desirable to rear for the table. Many claim that the French breeds of fowls are of this number; but this we very much doubt, as their flesh lacks the buttery, golden colour that attracts the

eye of the epicure. They may prove valuable as egg-producers, but these lack many good qualities as a table bird. Dorkings are undoubtedly at the head of the list as table birds, but of late years have become subject to disease that we question the feasibility of rearing them profitably for market in our changeable northern climate.

THE BEST AS EGG-PRODUCERS.

As egg-producers the Hamburgs are esteemed to stand at the head of the list. This claim we are prepared to dispute; for, as winter layers, we find that the Brahma, Cochin, Leghorn, Poland, and Houdan stand relatively in the position here named. That the Hamburgs are good egg-producers we admit; but that they are any better than a number of non-sitting fowls, so called, we deny. The richness and meateness of their eggs are not to be compared with those of the Poland, Leghorn, Houdan or Brahma; and their eggs lack the size of those named. All things considered, we have no hesitancy in saying that for eggs we should name the Ponds; for the table, Dorking, and for early marketable chickens Brahmas and Cochins.

A correspondent of *Moo's Rural New York*, who has had considerable experience in rearing fowls for profit, says: "The Farm's Breed is the breed for profit. It consists of Brahma hens and colored Dorking cocks—the chicks from which are hardy, easily reared, grow fast, and in four months, without extra feed, will dress four to five pounds each of fine grained, well-formed, plump-breasted, well-coloured flesh, fit for the table of any amateur or epicure, and always commanding a good price in market. The hens from this cross are even better and more continuous layers than either pure Brahma or the Dorking; but if wanted to breed again, the farmer must keep one coop separate of Brahmas—say a cock and two hens—and so also of the Dorkings, and thus yearly with the cross of pure bred birds, cocks of the Dorkings and hens of the Brahmas keep up the 'Prime' Breed for profit."—*The People's Practical Poultry Book*.

SHEEP SHEARING.

The operation is one requiring much patience and care; the shearer being obliged to content himself, when commencing, with clipping a small amount of wool, and if he set himself properly to the work, he will find no necessity for an exhibition of strength or violence. The threshing floor of the barn is the place usually selected in this country for the process. It should always receive a liberal littering of clean straw, from which all dust, and small broken straws should be shaken, for, were these allowed to remain, they would adhere to the sheep, and not only retard the shearer, but also give the wool an unprofitable appearance. The floor itself should have received a thorough cleaning with a broom, or, still better, with brush and water.

Much practise will be required to become a skillful shearer, and it is almost impossible, when there are so many different modes practised, to give instructions suitable for the guidance of beginners. The following directions, furnished by Jennings, are perhaps as plain as can be made: The shearer may place the sheep on that part of the floor assigned

to him, resting on its rump, and himself in a position with his right knee in a cushion, and the back of the animal resting against his right thigh; he grasps the shears about half way from the point to the bow, resting his thumb along the blade, which gives him better command of the points. He may then commence cutting the wool at the brisket, and proceeding downward, all upon the sides of the belly to the extremity of the ribs, the external sides of both sides to the edge of the flanks, then back to the brisket, and thence upward, shearing the wool from the breast, front and both sides of the neck, but not yet the back of it, and also the poll, or forehead, and top of the head. Then "the jacket is opened" of the sheep, and the position, as we learn that of the shearer, is changed by the animal being turned upon its side, on knee of the shearer resting on the cushion, and the other gently pressing the fore-quarter of the animal, to prevent any struggling. He then resumes cutting upon the flank and rump, and thence onward to the head. Thus, one side is complete. The sheep is then turned on the other side, in doing which great care is requisite to prevent the fleeces being torn, and the shearer proceeds as upon the other—which finishes. He must then take the sheep near the door through which it is to pass out, and neatly trim the legs, leaving not a solitary lock anywhere, as a lodging place for ticks.

By adopting this plan, which I think a very good one, almost any careful person may soon become proficient in handling the shears, without experiencing many of the usual annoyances of the operation of shearing. After shearing the sheep should be marked. Every sheep-owner should be provided with a marking instrument with his initials on it, or some peculiar device that will stamp the animal at a single stroke. The practice of doing this as they are sheared is not a very commendable one, as more time is consumed in the operation than would be were it made a special job; especially is this the case when a ho pigment is used. Pigments are made of various compositions, oil and turpentine boiled being the most desirable. The rump I consider the proper place for the brand, for besides being more conspicuous, the wool there grown, on account of its inferiority, can be better exposed to disfigurement.—*Co. American Stock Journal*

HEALTHY HOGS.

1. Medicine should never be given to man nor beast, when it is possible to avoid it.
2. Animal constitutions are wonderfully recuperative, resist extraneous agencies to almost an indefinite extent and often recover despite of the most pernicious and empiric practice. Care, cleanliness and nourishing food judiciously given, will generally cure when diseased, and will always prevent disease if the animal organism has been from the beginning, habituated to normal management—wise treatment.
3. An All-Wise Providence, gives in the food of man and beast, all the mineral substances essential to nourish and mature each part of the system. We need not go to the lime-kiln, nor to the smelting furnace, to our coal beds, nor to our ash-heaps, to procure material for the bones, teeth, muscles, &c., of our animals. The food prepared by an All-

Wise Creator, renders useless the crude admixtures and when received into a healthy stomach, never fails to effect the good of the animal, entire, asking no assistance from chemical tyros and apothecary alteratives.

4. The capacity of the stomach should be most carefully tested. There is a limit to the digesting power of even a hog, and when this limit is past there is a waste of the vital energies in resisting the tendencies to disease, that should be employed in carrying to each part of the animal the necessary deposits to secure a healthy growth. A little wisdom in feeding animals tells amazingly upon the granary, and never seriously injures the pocket. In this respect, a "penny saved" in grain, pays two in the health and growth of the hog.

5. The liver of even a hog is never diseased without a cause, and the cause is generally found in the quantity and quality of the food and drink, bad air and poor sleeping apartments. "A word to the wise," &c.

R. WALKER.
Spencer Brook, Minn. —In *Practical Farmer*.

IS POULTRY KEEPING PROFITABLE.

Upon this subject the *Western Rural* makes the following just and sensible remarks, giving some cogent reasons why poultry should be kept upon the farm, and as to the profits arising therefrom:

"For several years poultry have been profitable, eggs and chickens commanding a high price. By a little attention to their breeding and management, poultry may be made very valuable to the farmer in many ways, one of the most important being the excellent manure which they make. A comfortable frost-proof poultry house should be constructed, in such position that the hens will have access to the orchard for they are exceedingly useful for destroying the curculio, the apple worm and other hurtful insects. Plum trees in a poultry yard generally yield an abundant crop of fruit, perfectly free from the attacks of the curculio. The best breed of fowls are always the most profitable; but even these should not be kept more than two or three years. Old hens should be got rid of, and young, vigorous pullets put into their places. The floor of the poultry house should be covered with wood ashes, dry muck, or old sawdust for the purpose of absorbing the offensive smell. The house should be cleaned out frequently, and the manure kept in a shed, or in large casks or boxes, until required for use in the spring; its effect on field or garden is remarkable."

EGG-EATING HENS.—The *Journal of Agriculture* gives the following remedy for this habit.—Break an egg and dust the contents nicely with fine Cayenne pepper, afterwards turning the egg round so as to get the pepper below the yolk, if possible, and leave the egg in the offender's nest; or if he catches her in the act of eating an egg let him drive her away quietly and place pepper in the remainder of the egg, end-avoring, as stated before, to get the pepper underneath. He will very soon see her running furiously about with distended beak. If one dose is not sufficient administer another, a little stronger; but I think once will be enough, for I saw the remedy tried, and it turned out to be a perfect cure.

PURE BUTTER.

The fresh sweet pastures of June, furnishing that abundance of succulent feed which new milk cows need to give rich milk in abundance, make this month pre-eminently the butter month. We present herewith the views of a good butter maker, expressed in a communication to the *American Agriculturist* by one of the correspondents of that journal. "I am very particular about thoroughly scalding and sunning my pails in hot weather; do not fill them more than half full, and skim after the milk thickens sufficient, so that the cream will come off smooth without taking any milk with it, which, I think, is apt to make curdles in the butter, and that injures the looks of it. Churning should be done every day, if sufficient cream be obtained. If not, the cream in the pot should be thoroughly stirred when ever any is added, and I add a little salt, which certainly is not a bad idea. I design, when I churn, to have the cream the right temperature, neither too warm nor too cold, so as to avoid putting in any warm or cold water, and as soon as it is gathered I take it out and wash it in cold water, until it is thoroughly freed from buttermilk; salt it to my taste, and set it in a cool place until the next morning when I work it over again until it presents a firm and uniform appearance. Last summer, I worked my butter three times before packing. At the last working I add a small quantity more of salt. After packing it smoothly I sprinkle a tablespoonful of loaf sugar and a little salt over the top between every layer, and apply on the top of that a cloth pressed down closely to keep the air from it during the time that must intervene before the packing of the next layer. After the jar or firkin is well filled, I put the cloth on the top and apply another thicker one, and fill up with salt packed tightly, and even with the top of the jar; then lay on another cloth to fit the top. I also put another one over the jar and have it come over the edge and paste it tight to the jar, then put on a board and weight. Or another way: Instead of putting in salt I take melted butter and turn in on the thin cloth even full, and lastly, apply salt sprinkled over the top before putting on the last cloth and weight. Then again, I have had butter keep well after packed thoroughly as I have stated to fill up the top of the jar with strong brine, which should stand two inches deep on the top without being filled up with butter and it is necessary to put a little saltpetre in the brine. Ask one whether he has a very good place to keep butter or not, if he attend to the strict observance of these rules can have good butter and keep it for months, and that through the hottest weather."

THE COW'S INTELLIGENCE.

The *London Milk Journal* says: That cows have memory, language, signs and the means of enjoying pleasant association, combining for aggressive purposes, have been recognized, but scarcely to the extent the subject merits. Travelling in Italy many years ago, we visited some of the large dairy farms in the neighborhood of Ferrara. Interspersed among much of the low lying, unhealthy land, remarkable for the prevalence on it of very fatal forms of anthrax in the summer season, are fine undulating

pasture lands, and the fields are of great extent. We happened to stop at a farm house one fine autumn afternoon when the cows were about to be milked. A herd of over one hundred was grazing homewards. The women took their positions with stool and pail close to the house, and as the cows approached, names were called out which, at first, we thought addressed, to the milk-maids. Rosa, Floren-a, Giulia, Sposa and many names, which were noted by us at the time, were called out by the overseer or one of the women, and we were astonished to see how after cow cease feeding or chewing the cud and make direct, sometimes at a trot, for the woman that usually milked her. The practice, we found was not confined to one farm; all the cows on each farm knew their respective names, and took up their position, the open just as readily as the individual members of some large herds in this country turning from the fields to take up their places in the sheds.

COLORED CHEESE.

The following extract from the *Practical Farmer* is deserving of notice:

The "slow poisoning" by deleterious additions is often much faster than many persons imagine. Let me state a fact that came under my notice several years ago:

A lot of highly colored cheese was stored next door to the residence of my father. Doors closed I cannot say how long; but on being opened the dead rats were lying in every direction! such rat holes in cheeses!! they had probably eaten a little too much.

Who is it that we generally have a sore mouth for several days after a nibble at this modern colored cheese, and are compelled to desist, and wait two or three weeks to get well; and then if we taste it again, have to pay the penalty as before?

In days of yore, we could eat the pure article, made by our mothers and sisters, two or three times a day, year after year, and nothing of the kind did we ever know. I believe that the amount consumed would soon be doubled, if not quadrupled, if the factories would drop all this matter of coloring. And I know for myself and some others that we would use ten times the quantity we have dared to consume of this high seasoned and false colored article found in nearly every provision store in the city.

THE DONKEY.—One hint to be obtained here (the London Zoological Gardens) may be useful in America—the donkey is employed to drag the roller over the gravel walks; he is to light too make more impression on the gravel than the roller will obliterate. This useful little animal is employed in Europe in various ways to great advantage; his introduction into the general field of labor is one of the things we have yet to learn. His appetite is easily satisfied, requiring less than a large dog; his labor even as a burden-carrier would well repay his importation; he pulls well in a small cart, and in this is most useful in cities to carry marketing. He would take the whole produce of a small kitchen garden as well as a horse, while his maintenance would be a very trifle. To the poor man he would prove in America an admirable help, not dainty as to the quality and quantity of his food.—*Smt. J. J. Hunt. Ab oad.*

Do OXEN SWEAT?—So queries a correspondent, adding:—"Animals that toll never sweat. The reason is, the opening of the mouth and the protruding of the tongue prevent perspiration." We guess our correspondent has never driven oxen when the mercury was up among the "nueties." He can easily test the theory that "the opening of the mouth and the protrusion of the tongue prevent perspiration." Try it next July, and if the exercise be as arduous as the desire for knowledge, there will be some "sweating."—*Rural New Yorker.*

DAMAGE TO CATTLE IN TRANSIT.—The *London Food Journal* says: "A great part of the meat condemned by the inspectors of markets is condemned for the reason that the animal has got into a state of disease in the railway truck; and having cut off and condemned in the market are mostly, it may with confidence be affirmed, liable to condemnation from the same cause as one whilst diseases thus originated not unfrequently spread where cattle suffering from them are pastured, and thus loss is incurred by farmers and by the country."

A LAMB HAD TO BEAT.—The *Prime Home Journal* has the following: On the 21st of March last, a pure Cotswold ewe belonging to A. G. Drane, the well known breeder of fine sheep near Eminence Ky, dropped a lamb by an imported Lincolnshire ram, that weighed nineteen pounds and three-quarters, when tied up in about one yard of cotton. The ewe was not able to stand on her feet for six days, but now she and the lamb are doing well. If any one has a finer lamb, we would like to announce the fact.

The Gaude

MULCH.

Too many are apparently quite ignorant of the value of mulch. Indeed we have met with parties making some pretensions to be gardeners, who did not know the meaning of the term. As a protection and help to newly planted trees there is nothing like it. Few transplanted trees would fail if this precaution were taken. A good mulching of straw, bitter leaves, newly mown grass, weeds, spent tan bark, or sawdust, keeps the ground loose, friable and moist, and in the best state generally for securing steady and thrifty growth. A correspondent of the *Rural New Yorker*, writing on this subject urges the use of all manner of material for the purpose, that may happen to be within reach, and says that shavings, brush, cut short, and even collyer stones will make a mulch, if nothing better is at hand. He also gives an inter-

esting account of "the philosophy of mulching," a point on which little has been written. He observes: Downing says, "by preventing evaporation it keeps the soil from becoming dry." This is the general theory, right as far as it goes, but is far from expressing the whole truth. Mulching is actually watering. It is providing a constant and ample supply of moisture. It does more than this; it provides a constant supply of fertilizing matter. Some years since, observing the remarkable effects of mulch, the writer tried some experiments, which to his mind, tended to throw some light upon the mode of its action. Perceiving that a heavy mulching of saw-dust produced all the apparent effects of heavy manuring, and kept the ground moist in the driest season, the bulb of a thermometer was sunk to the bottom of the mulch, and the mercury fell ten degrees. This demonstrates to my mind the cause of moisture and fertilizing. The mulch being always porous, permits the free circulation of the air, and being ten degrees cooler than the general atmosphere the moisture of the air is condensed. This accounts for the constant moisture of the earth under it, even in the driest season. The fertilizing matter of the air consisting of the ammonia, and carbonic acid, are deposited by the condensation of moisture under the mulch. We are familiar with the fact that frequent stirring of the soil, in a dry time will prevent injury to a crop for want of rain. This acts upon the same principle as the mulch. The soil being kept porous receives its moisture by condensation from the air. Nitre is often gathered from the earth in damp, dark cellars, and from under rubbish which has been long undisturbed, and it was deposited there in the same manner as under the mulch.

Mulch has another remarkable quality. It will render the hardest and most compact earth loose and porous in a few months. The benefit of summer fallow is based upon the free circulation of air through the soil, caused by many plough-

ings. If the soil is left unused, but without stirring, it becomes compact and little or no benefit arises from a year's rest. If the ground were mulched, it would need no ploughing to produce the same benefit. It is recommended by some horticulturists to remove the mulch in September, for a time to prevent too much water from being taken up between the bark and the sap wood, which it is said, will freeze in winter, and cause the frozen sap-blight; the mulch may be returned at the commencement of the cold weather. This may be done by those who believe the winter-blight thus produced. But let no one forget to mulch who has anything to do it with.

DWARF APPLES.

Any variety of the apple may be dwarfed by grafting it on the Paradise or Doucain stock;—the former makes a smaller tree, but comes quickly into bearing; the latter is larger, and though longer in fruiting, will alternately afford the heaviest crops. While any variety of the apple may be thus treated, there are some kinds which are more suitable than others for dwarfing. Among the best sorts for dwarfing are the Red Astracan, Jersey Sweet, Baldwin, Dyer, Summer Rose, Benoui, and Bough. As an ornamental object in a garden, what can be prettier than one of these apple bushes covered with blossoms, or laden with fruit? Dwarfing makes no difference as to the size of the apple product; it only affects the size of the tree, while the fruit is as large, and in some instances even larger, on the dwarf stock than on the standard.

The chief advantages of the dwarfing process are:—1. Economy of space. A tenth of an acre may be planted with forty or fifty trees without crowding. 2. Greater suitability of the trees for town and city gardens. 3. Easy access to the fruit. 4. Early bearing. This is the chief recommendation of the dwarfing system. Trees thus treated will begin to bear the third

year, and at five or six years old will, if properly cultivated, afford a bushel or more to the tree. A small garden planted with summer and autumn varieties will supply a family with early apples while they are scarce and dear in the market, and thus give a valuable return for the space occupied by them. These miniature apple trees deserve to be more widely cultivated. They are somewhat more expensive than the common standard orchard trees, and this is doubtless one reason why they do not come into more general use.

CELERY CULTURE.

Celery is one of those vegetables with which the amateur often makes his most decided failure, although it is one of the most certain crops with the professional gardener; the cause of difference in results being attributed to care and culture at the proper time. Those who intend growing this vegetable on a large scale should always consult the best and most thorough works on the subject; but the man who only wants a few hundred head of celery may produce them by adopting the following plan:—

THE SEED BED.

Celery seed usually germinates slowly, and the plants are exceedingly small and tender when they first appear; consequently a carefully prepared seed bed is positively necessary. If there are no hot-beds that can be used for this purpose, select a warm spot on the south side of a fence or building, and as soon as the frost is out of the ground dig up a bed, say three feet wide and ten feet long, cover it with fine manure, two to four inches deep, and dig it in and mix it with the soil. Rake the bed level and sow the seeds evenly over one-half the surface, leaving the remainder vacant, and for use when the plants are large enough for their first removal. Pat down the surface with the back of a hoe or spade, and this will usually cover the seed sufficiently deep; if not, sift on a little very fine soil. Give the bed a good soaking of tepid water, applied through a watering pot with a fine rose. It will not do to dash on water with a pail or some similar vessel.

The seed bed must be frequently watered, and never allowed to get dry, until the

plants appear, and thereafter sufficiently to keep them growing. If the plants come up too thickly, thin them out; but as soon as large enough to handle, take up and transplant into rows, beginning on the vacant end of the bed, placing them four inches apart each way; and a bed of the size named will hold about three hundred. The plants may remain in this position until wanted for final planting in the garden, which we usually do about the first to middle of July. Plants that have been transplanted in the seed bed can be safely removed at almost any time, whether the weather is moist or dry.

FINAL PLANTING.

We adhere somewhat tenaciously to the old practice of trench planting for ordinary garden culture. A trench is dug of the required length, or several of them, four feet apart, and one spade deep, which, as a general thing, will not be more than six or eight inches, and about a foot wide. This trench is then half filled with fine stable manure, and this is mixed into the soil in the bottom of the trench. The trench, when thus prepared, will be about four inches deep, exclusive of the soil, which has been thrown out upon either bank. The plants are then set in the centre of the trench six inches apart, and, after planting, carefully watered. The reason why we like the shallow trench is the convenience of watering, as when applied it is sure to reach the roots and not spread over the surface, as when level culture is adopted. From this time forward, until the blanching is commenced, all that is required is to keep the plants growing by careful culture, such as frequently stirring the soil, and giving water when required.—*Rural New Yorker.*

THE APPLE TREE BORER.

"If there be any plague of insects, next to the potato bug that has haunted my sleeping hours, and should rank me a saint in my waking ones, for not breaking the third commandment, it is the apple tree borer. For ten years I set out fruit trees, combined any amount of 'eternal vigilance' with cold steel and knee pads, only to see them, one after another succumb to the little pests, their trunks looking as though they had received a double dose of malignant small-pox. Not content with attacking the base of the trees, they would go as high as the lower branches, and drill themselves into the crotches.

"I was in despair; and when I had written to some great light in horticulture of my trouble, and was coolly informed 'that the fruit grower in every

new country was subjected to such *little* inconveniences, I was perhaps, — something else I was about to give up vanquished, and after committing my orchard to the flames, retire with all the honors of war—glory nowhere—when I was advised to try the following method, which for the past two years has proved with me a decided success.

"In the spring, just before vegetation starts, level the ground, pack it firmly round the foot of the tree, in a circle of from two to four feet in diameter, according to the size of the tree. Take unleached ashes and air-slaked lime in equal parts, well mixed, and apply to the circle thus made, covering the ground all over two or three inches in depth. Then take strong soap suds, or what is better a solution of half a pound of sal soda to one gallon of water, and wash the entire trunk and the base of the limbs thoroughly. Repeat this operation in the fall of the year, just before freezing weather, covering the ground with the mixture of ashes and lime, and washing the trunk and base of the branches with the solution of sal soda. If any one who is as badly troubled with the borer as I have been, and has never seen this simple recipe, will try it, I know that if his experience equals mine, he will send me post paid the largest apple his rejuvenated trees bear and that can be allowed in the mail bags.

"All of my trees that were not damaged before I tried this plan are as fine and thrifty as any I ever saw and I have not as yet found the mark of a borer upon them." — *Tilton's Journal of Horticulture.*

GESNERA NEGELIA EXONIENSIS.

This is truly a gem. It is not often we see such beautiful foliage and flowers combined. It is one of the finest plants I know of for table decoration, as the rich, dark, velvety hue of the leaves, and the bright color of the flowers, contrast admirably with a white tablecloth; under the chandelier as it stands amongst the glittering silver and glass, it is, indeed, perfection. For the decoration of the conservatory or stove it is also most valuable.

I have a specimen about two feet through, with upwards of a dozen spikes of magnificent flowers. It is as fresh and beautiful now, in February, as it was at Christmas. The flowers are of an intense orange scarlet, with a yellow throat. The leaf is of a very dark velvety texture, studded all over with minute red hairs, almost like plush.

I remember some years ago, when I first saw *Gesnera Suttoni*, how much I admired it. This year I have had several other varieties growing side by side; they have done flowering for some time, but *G. exoniensis* is as fresh as ever.

When I received my plant several of the leaves were somewhat damaged with the journey. I cut three of these off, and cut the stock of the leaf about half an inch from the base. I next took three small pans and half filled them with crocks, on these put about two inches of peat, and filled up with silver sand. I then place the leaves on the sand and pegged them down. From these I have now more than a dozen nice young plants, and by next winter they will be strongly established. I mention this merely to show how easily it can be increased.

I am growing mine in our stove, side by side with *Alechampia Roezliana rosea*, in full bloom; and hanging over it, on one of the supports of the stove, is *Thunbergia Harrisii*, producing masses of bloom, its lovely blue flowers contrasting most pleasingly. — F. P. L. *Collage Gardener.*

NEW INDIAN AZALEAS.

The *Flo it and Pomologist*, for April figures two beautiful new Azaleas, of which it says they may be honestly recommended as possessing distinct features of an ornamental character, and as being acquisitions of no mean order to this growing group of gay spring flowers.

"These new varieties are named *Fanny Fillery* and *A me*. *Fanny Fillery* is a sport from *Triomphe de Gand*, obtained some three or four years since by Mr. Fillery, of Wellbeck. It has, we hear, a strong, healthy habit and is a profuse bloomer, the flowers keeping perfectly true as to color and marking. The flowers are of average size, of a bright rosy pink color, the upper segments richly spotted with deep crimson, sometimes nearly over the whole surface of the central one, and the edge being of a pure white, breaking inwards in an irregular, feathered manner. Its bright and showy character places it in the first rank in the variegated group, and we believe it will be found to be the best of its class; certainly it is a very fine and valuable Azalea.

'*Acme* is a self-colored Azalea, of good quality, and is remarkable for the great substance of its blossoms, and for its rich, deep, rosy-crimsoned color, a peculiar tint which we have not seen in any other variety."

"The varieties of the Indian Azalea are by no means difficult of culture. Young, free and healthy plants should be chosen; and if of the weaker varieties, they should be grafted on free growing stocks; if of the more robust sorts, they are better on their own roots. The best time to re-pot is about the month of June, or when the plants are in active growth. In potting, the soil should be made quite firm around the mass of roots, so that the water applied may not run through the new soil, leaving the old mass dry—a fertile source of mischief to the plants. While in active growth, they delight in a close moist atmosphere; the syringe should be used freely, and the plants shaded from the mid-day sun; but as soon as they have made their growth, they should be exposed by degrees to more air and light, and less water must be given, though the earth must never be allowed to get dry. It is of the first importance to the production of fine blossoms to have the flower buds set as soon as possible, as the quality of the flowers will be in proportion to the perfection of the ripening process. If the plants are sufficiently advanced to be set out of doors for a few weeks previous to the autumn rains coming on, it will benefit them; but in exposed situations it will be necessary to protect the pots from the sun, which may be done by standing each pot within one a size larger. The proper soil to use is fibry peat, mixed up with a good portion of silvery sand and some small pieces of broken pots. Clean pots should be employed, and they must be carefully drained."

WISE FRUIT TREES.

I was talking to-day (April 29,) with a Huntingdonshire cottager, and was saying how cold the day had been after our previous hot weather. "Yes," said my friend, "you musn't expect the summer to come all at once. The wise tree would have told you better than that. I was up agen the hall this morning, and saw those two wise trees that grow nigh to the fish-stews, and they had'n't put out a mossel o' show." "And what tree may the wise tree be?" I asked. "It's what some folks call the Mulberry," was the reply; "but the wise tree is the name as I've always known it by ever since I was a child." "And why do you call it the wise tree?" "Why, because it isn't silly like some trees as puts out their leaves early, and then gets nipped; but the wise tree, on the contrary, always waits till the frosts has gone right away, and aint to be deceived by a stroke o' fine weather coming early in the season. But when it's sartin sure that it be fine weather and well settled, then it puts out its leaves. Oh yes, sir, you may rest content on the wise tree telling you when you may be safe against frosts!" —(UTBERT BEDE in *Noes and Qæie*.)

This attribute of the Mulberry is mentioned by Pliny, who says, "Of all cultivated trees, it is the very last to bud, and it does not do so until the cold weather is entirely passed: hence it has been called the wisest of trees." Even the *Heralds* have accepted this, for old Guillim remarks to it "this fruit is an hieroglyphic of wisdom, whose property is to do all things in opportune season." The Court-Pendu-Plat Apple is called in some places "The Wise Apple," because it opens its blossoms later than any other variety, and, consequently, they are less liable to be injured by frosts.—*Cottage Gardener*.

FRUIT NEAR KINGSTON.

An earnest horticulturist writes the *Globe* that the Bartlett, Louise Bonne de Jersey, and Flemish Beaut do well in that locality, though some think the Bartlett a little tender. Cherries, except the very hardiest kinds, are a failure. Of grapes, the best, with him, are, other things being equal, the Adirondac, Hartford, Prolific, Rogers' Number 3, I Chawan and Sweet Water; that is, so far as yet tried, and he had many varieties. Currants do well, with the exception of the Cherry currant. Raspberries stand the winter, six kinds of them, without lying down; and the Whitesmith gooseberry is as fine as in England, and as well flavored. The two best strawberries, so far, are Wilson, and for flavor and general purposes the Triomphe de Gaud. Apples generally, also succeed when carefully attended to. He says that he does not succeed with the Concord grape, whether owing to want of judgment in his treatment of them or to inferiority of climate, he cannot tell. Last year they were very fine, but last year was an exception. This circumstance points to the climate as being at fault in the matter.

THE POOR MAN'S PLUM.

Having noticed in your columns the instructions to the poor man in agricultural implements, &c., I thought it would be best to give him a few hints

at fruit growing. And while this plum is especially adapted to the poor, it is equally good for the rich; I mean the common wild plum. They grow very fast and make an excellent wind-break, and are very beautiful in bloom, and cannot be excelled for bearing fruit, when cultivated. The plums are excellent for pies, preserves, and butter, and in this locality find a ready market from one dollar to two dollars per bushel. How often we hear it said by farmers, "I would plant fruit trees if I had the money to procure them." These trees they can get at a small expense; go to some large tree and get the sprouts of one or two years old; or what is better, select choice plums and plant in a bed in the fall, let them grow and summer in the bed and transplant in the spring cultivate for two years and then they will take care of themselves, and in three or four years you may look for plenty of fruit, and will not need Dr. Hull's curculio catcher, or any root pruning.

Ainsworth, Iowa.

W. W. WILLEY.

In Prairie Farmer.

TRAINING SQUASHES.

Squashes do best on new land. All the summer varieties have a hard shell when mature. The crook-necks, and the white and yellow summer scolloped are the usual varieties grown. Different varieties should be planted far apart, as they mix very easily. Two or three plants are enough for a hill. The best protection from bugs is the box, covered with gauze or glass. Squashes occupy a great deal of ground when suffered to run and have their own way. When a person has but little room, and wishes to economise, a trellis for them to run upon is recommended, and is said to operate very successfully. Stakes or small posts are set up, two feet apart each way, and the seed planted in the centre. When the vines begin to run, they are trained upon slats nailed to the posts and by throwing boards across the slats the fruit is supported, and will ripen much earlier than when allowed to lie on the ground half covered with leaves.

Squashes trained in this way can be made to occupy but little space, and are said to bear as profusely as when the vines run over the ground. To those who have but little room the plan is well worth trying. For late varieties, the best are the Hubbard, Boston Marrow Acorn, and Vegetable Marrow. The Valparaiso is a tolerably fair variety when the season is just right. Immense squashes, sometimes grown, are rather for the sight than the table. They are coarse meated, and watery, compared with the little curly Hubbard, which is mealy, and as delicately flavored as the sweet potato. As squashes are great runners, they do better with their ends clipped off.—*Utica Herald*.

GARDEN GLEANINGS.

The *Northwestern* recommends Lenning's White Strawberry as the best for home use, comparing it to the Seckel among pears and the Delaware among grapes. For exquisite flavor, it is not surpassed.

Pansies and Daisies should be set in a shady and moist place—not under the shade of trees, as the roots of these dry the soil too much, so says the *Gardener's Monthly*.

At a recent meeting of the Ohio Horticultural Society, M. B. Bateham said he had tried the new Egyptian beet, and several new sorts, but he would not plant them again. He prefers the Bassano to all others for summer use, and the Long Blood for winter.

A correspondent of the *Rural New Yorker* says that he raises cabbage plants in the open ground, without the usual loss from the ground flea, by surrounding the bed with a tight board fence, two boards high. For two years since trying this mode he has been entirely successful.

Dr. Bal, of Kansas, says the trees which expend all their forces in the production of wood can produce little or no fruit. Indeed, it is not possible for any tree to produce a fruit germ, and not again in some way disorganize it, unless the wood growth shall cease in time for the leaves to elaborate food enough to grow both leaf, and fruit the following year.

The *Gardener's Monthly* recommends pruning as a means to make some kinds bloom early. There are two classes of flowering plants; one perfects its buds on the wood of the last season's growth—the other flowers in the new growth of the present season. Whenever you want the latter class to flower, all that is necessary is to prune the plant in closely, and induce a new growth.

H. J. Rhodes, Brighton, Iowa, writes the *Wooling Farmer*, that he raises the common currant as large as the cherry currant, by keeping the ground rich, and the bushes open so that light and air can have free access to them. He renews the wood every two years; the young plants grow until that time without much pruning; afterwards he cuts out all wood over two years old.

The Kohl-Rabe is a vegetable between the cabbage and the turnip. The stem just above the surface of the ground, swells into a round, fleshy bulb, in form not unlike a turnip on the top; and about the surface of this bulb are put forth its leaves, which are similar to those of the Swedish turnip. The part used is the bulb, which is cooked and eaten as turnips generally are. The fish possesses the combined flavor of the cabbage and the turnip.

A correspondent of the *Cony Gentleman* says that copperas and saltpetre around pear trees will show its life in a large yield of fruit. He tried this mixture on a Bartlett pear which had yielded no fruit for two years previous. The tree (a dwarf) yielded after the application, 155 fine large pears, and the following year 250 equally fine ones. If pear trees want iron, which most soils are deficient in, sulphate of iron, or copperas is a good way to supply the deficiency.

The editor of the *Gardener's Magazine* says that if there is one prevailing fallacy in grape culture, which we should always be on our guard against it is, without question, the tendency to afford the vines more nutritive aid than they can appropriate. Many more vines are injured by excess of food than by deficiency. In the vegetable kingdom the same law prevails as in the animal; it is not the quantity of food taken into the system which affords nourishment, but the quantity actually digested.

The editor of the *Green Mountain Telegraph* says that the suggestion that the trunks of apple trees should be shorn of all the boughs and allowed to sucker, and some of them when large enough, grafted, will prove a failure. The grafting of the ordinary suck-

ers growing from the trunks of old trees can rarely be done with success. He tried this, and the grafts all died at the end of the second or third year. Far better to graft the old trees whenever there is any smooth-barked wood near enough to main bough.

A correspondent of *Colman's Rural World* says that some of his neighbors plant peach orchards and get about one good crop, after which weeds, insects, etc., prevent their getting another. Another neighbor planted 125 Hale's Early Peach, and in twenty-eight months shipped from them 640 boxes of a third of a bushel each. The next year the amount was nearly doubled. The third year his net proceeds were nearly \$1,200. Weeds and grass were never seen in his orchard.

A correspondent of the *Farm Journal* says that straggling growers, like the Forsythia and Pyrus Japonica, should be repeatedly pinched back or clipped during the growing season, to produce a close, compact form. Cigelas and Deutzias should be pruned like currants, leaving the strong young wood to flower. Altheas, and some of the Spiraeas, which bloom on the new shoots, may be pruned back each year to the old wood. A very beautiful hedge can be made by intermingling different flowering shrubs, and clipping according to these directions.

The editor of the *Gardener's Monthly* says that the Honey Locust is an admirable hedge plant for cold climates, and is far better than any other plant where the soil is poor and thin. There is one great advantage which it possesses over other plants. The Osage Orange, for instance, has thorns on its young growth, and that is the end of them; but thorns come out of the old wood of the locust and continue to come out year after year, branching and growing simply as thorns, and nothing will dare go through a hedge of this plant, even although there should be a tolerably large gap invitingly open.

It has lately been shown, by careful experiment, that sickly potted plants, even some that have almost died out, can be greatly benefited, and sometimes, indeed, entirely restored to vigour by applying warm water to them instead of cold. In certain cases, oleanders which had never bloomed, or did so only imperfectly, after being treated with luke-warm water, increasing the temperature gradually from 140° up to 170° F., produced the most magnificent luxuriance of bloom. Similar results occurred with an old plant of Hoya, and also with an India rubber tree which had nearly withered away. In all these cases the application of water heated to about 110° F., without in other precaution, caused a new and flourishing growth.

The advantages arising from planting evergreens in orchards are set forth by F. R. Elliott, in the *Journal of Horticulture* for April. He says:—"The ameliorating influence of the evergreen extends really, but about fifty feet; yet within that distance the bodily system of man feels it perceptibly, and so, reasoning with careful observation of animal and vegetable life, each year tells me more and more that to ensure success and perfect development of either, certain warmth and shelter, &c., must be had. In the animal it is by means of artificial shelter and clothing in which they can be placed; but in the vegetable it must be the subduing influence of one plant upon another, and the evergreen, from long experience is proved the safeguard and ameliorating nurse of the deciduous tree.

Editorial.

THE COLORADO POTATO BUG.

This terribly destructive insect, which has for the past season or two been devastating the potato crop in the American States west of the Detroit River, appears already to have spread well-nigh all over the peninsula south and west of Lake Ontario. Although confounded by many with the common three-lined potato beetle, there can be little doubt that the true Colorado beetle is already established as a settler in the Province of Ontario, and is rapidly multiplying in its new sphere of operations. The rapidity with which it has spread eastward, and the wide mischief it has done to the west of us where it has been longer at work, may well excite alarm, and anxiety. Perhaps the most we can hope to do is to check the evil, and keep it within such bounds that we may not be deprived of at least a partial crop of the invaluable tuber, which has become in the estimation of most people, well nigh a necessary of life. Our big, blustering contemporary the *Globe*, reproaches the whole country with negligence, and plainly intimates that if its good counsel so timely given, had been promptly followed, we might have wholly escaped this visitation. In its issue of June 9th we find the following paragraph:

"More than a year ago, before a single specimen of this insect had found its way into the country, we warned the community by articles in the *Globe* and *Canada Farmer*, in lectures in several places, and in conversation, that this pest was coming, and advised that active measures should be taken to prevent its obtaining a foothold in the country. In August of last year we announced the landing of the enemy at Windsor, and repeated our advice that prompt efforts should be made to repress it; since then we have time and again reverted to the subject, but nothing seems to have been done. What was literally "everybody's business"—for it will affect every man, woman and child in the country—has been idly regarded as "nobody's business." And what is the result? The country is becoming overrun by an infidelity worse than Fenian army, and before long we shall have to record the destruction of hundreds of thousands of dollars worth of potatoes. What is to be done to stay the progress of the ravages? Much can be done if all will co-operate, though we can hardly hope now to "stamp out" the pest."

We doubt very much if there has been

any such culpable indifference as is charged in the above paragraph. It is very easy to sit in one's quiet office, and imagine how vast armies of predatory insects might be destroyed, if people would only do their duty, but actually to accomplish the thing is another affair. So far as we have been able to observe, there has been a keen sense of the importance of doing whatever might be done to mitigate this evil, on the part of our farmers and gardeners. A most active search for the insect has been instituted all over the country, and Paris green, the only effectual antidote, has been run upon, until it can hardly be found for sale anywhere. By hand-picking the insects, and dusting the plants with the substance just mentioned, we may hold the plague in check, but our chief hope of deliverance from it must be in the parasite foes of the Colorado beetle, of which happily there are several. These following its onward march, and multiplying even faster than the mischievous insect we have so much cause to dread, will we may hope, so ably second our endeavors as to secure us entire immunity ere long from the evil we have now so much cause to deprecate. That our readers may be fully informed respecting the history, nature and best modes of destroying this insect, we copy the subjoined article, the best we have met with on the subject, from one of our U. S. exchanges:—

THE COLORADO POTATO BUG.

(*Doryphora 10-lineata*, Say.)

Never since the first introduction of the destructive pests has such general and well-grounded fear prevailed that they would totally destroy the growing crop of potatoes, as is entertained this season. They began to make their appearance in the vicinity of Chicago as soon as the first potato tops showed themselves above the ground, and they have continued to increase from day to day, notwithstanding the persistent efforts of cultivators to destroy them. It has seemed in some instances that twenty came to attend the funeral of each one killed. Not only are they destroying the potato crop, but in some instances they have appeared in such numbers upon the tomato crop, as soon as transplanted, as totally to devour the plants. They feed, in preference, upon the potato and egg plant (*Solanum melongena*), and next upon the tomato. They are said to feed exclusively upon plants belonging to the night-shade family, although we discovered them, upon one occasion this spring, feeding upon a plant

of the common garden thistle (*Cirsium lanceolatum*), and we have found them also feeding upon and laying their eggs upon buckwheat. In the absence of their natural food, we suppose they might be induced by starvation to feed upon plants that would not only not be natural to them, but absolutely hurtful.

There are three ways that this pest can be kept in check: first, by abstaining throughout an entire region of country for one season from planting potatoes; second, by persistently picking the mature beetles and eggs from the vines, and destroying them; and third, by dusting the foliage with Paris green, or Scheel's green of the druggists (*arsenite of copper*), mixed with five to twelve parts of flour according to the proportion of arsenious acid the drug contains; and in order to establish this, you must depend upon the druggist of whom you buy. The best contains from fifty-five to fifty-nine per cent., but it is sometimes adulterated to contain not more than ten per cent. It is one of the most deadly of poisons, and should not be inhaled. Of this there is no danger, if ordinary precautions are taken. Put the mixture in a sleazy sack—one of the thin ones in which table salt is sold, is good;—fasten this to a convenient stick at the end of a short string, and in passing along between the rows, carrying it on the opposite from which the wind blows; continue to beat it until the foliage is completely, though lightly dusted, therewith. The insects in eating, eat also the poison, and are thereby killed. It will not be necessary here again to recur to the first manner of getting rid of them, because it would be impossible to get united action thereon; but the second manner stated, that of picking the beetles and eggs, in connection with the Paris green, will be found effectual and economical; for a crop that costs as much in the preparation of the land and the cost of seed, will warrant a good deal of labor in saving it. One individual within our knowledge, this spring, ploughed up seventeen acres of early potatoes, and planted the land with beans. There had already been expended in preparing the land, one hundred and fifty dollars. It would have been wise economy to have expended as much more in saving the crop, (and one-half that sum would undoubtedly, have secured it) from the depredations of the beetles and larvae.

Every one of the beetles killed before laying her eggs will save the hatching of somewhere near one thousand of the larvae, this being the number which Mr. C. V. Riley, State Entomologist of Missouri, states as the quantity which the female is capable of laying before she becomes barren.

In about fifty days they undergo their various transformations from eggs, larvae and pupae, to perfect beetles, again capable of laying their eggs. Thus we see that the larva hatched the first of June would deposit her eggs about the twentieth of July. The produce being from a single beetle say 250 females—allowing one-half loss from various contingencies, and one-half for males—these would deposit 250,000 eggs, and their progeny again would deposit 12,500,000 eggs. Thus it will readily be seen that the swarms of beetles that infest the crop if allowed to increase and multiply, would, in the second generation only, destroy every potato, tomato and egg plant, from every field and garden in the region infested with them. Our own plan is to kill the beetles determinedly, by taking two short pieces of lath, sharpening an end of each to a chisel edge, the level being only on one side, and crushing

them between them. The chisel edge is to enable you to pick them from the ground more easily. We have found this more convenient, especially for getting them from the ground between the plants when young, than the pincers which have been recommended.

When the plants attain the height of six inches or more, they may be readily knocked into a pan by folding a newspaper, and striking the plants a sharp blow; and the same plan is also economical in getting rid of the larvae. Care should be taken if the beetles or larvae are burned, not to inhale the smoke, as it is said to be dangerous. The better way is to have a vessel containing kerosene in which to throw them. After they are killed they should be buried.

Have no faith in killing them by shaking down upon the earth, and laying elder branches along the rows. They must be dealt with by hand, and if you believe you can overcome them and work persistently at it, you will surely accomplish it.

Our observations as yet this season have not been rewarded by finding them depredated upon by parasitic or cannibal foes to any great extent; what the season may yet develop remains to be seen. In the meantime unless cultivators, in regions infested with these pests, take measures to destroy them, they will probably lose their crop of potatoes.

VALUE OF SCIENTIFIC INVESTIGATIONS.

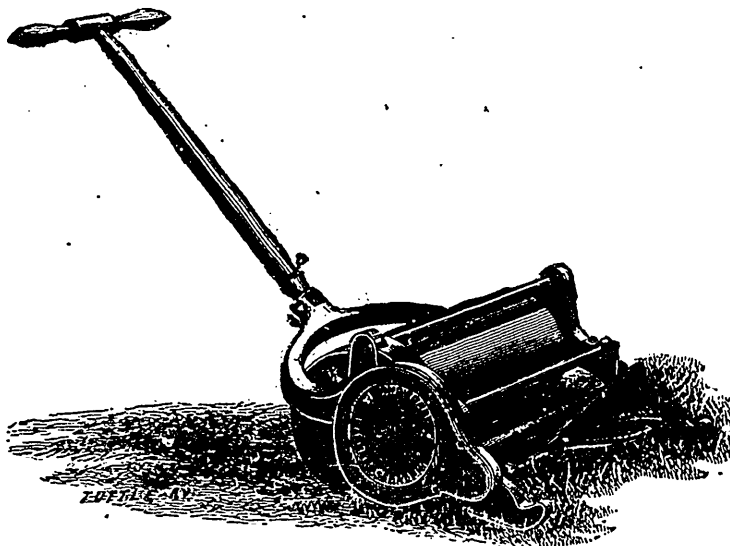
At the annual meeting of the Montreal Natural History Society held recently, Principal Dawson in the course of his address pointed out the incorrectness of the impression many people have that societies of that kind are of no practical utility, and that their researches "are merely the industrious idleness of impracticable dreamers and enthusiasts." He showed that most of the investigations of naturalists have a direct bearing on utilitarian pursuits, and, in proof of his remarks, referred to some of the papers contained in the last published volume of the Society. He said:—

"An eminent example is afforded by the paper of Mr. Gordon Broome on Canadian phosphates. Here we have set before us three pregnant classes of facts: First, phosphates are essential ingredients of all our cultivated plants, and especially of those which are most valuable as food. In order that they may grow, these plants must obtain phosphates from the soil, and if the quantity be deficient so will the crop. Of the ashes of wheat, 50 per cent consists of phosphoric acid, and without this the wheat cannot be produced; nor if produced would it be so valuable as food. Second, the culture of cereals is constantly abstracting this valuable substance from our soils. The analyses of Dr. Hunt have shown long ago that the principal cause of the exhaustion of the worn out wheat lands of Canada is the withdrawal of the phosphates, and that fertility cannot be restored without replacing these. In 292,534 tons of wheat and wheaten flour exported from Montreal in 1869, there were, according to Mr. Broome, 2,340 tons of phosphoric acid, and this was equal to the total impoverishment of more than 70,000 acres of fertile land. To replace it would require, according to Mr. Broome, 5,850 tons of the richest natural phosphate of lime, or

13,723 tons of super-phosphate of lime as ordinarily sold at a cost of more than \$480,000. These facts become startling and alarming when we consider that very little phosphoric acid in any form is being applied to replace this enormous waste. Yet so great is now the demand for these manures that super-phosphates to the value of \$8,750,000 are annually manufactured in England from mineral phosphate of lime, besides the enormous importation of bones and guano. Third, Canada is especially rich in natural mineral phosphates, as yet little utilized, and might supply her own wants, and those of half the world beside, if industry and skill were directed to this object.

"Putting these three classes of facts together as they are presented by Mr. Broome, we have before us on the one hand an immense abyss of waste, poverty and depopulation yawning before our agricultural interests; and on the other inexhaustible sources of wealth and prosperity lying within reach of scientific skill, and the conditions necessary to utilize which were well pointed out in the paper referred to. It is true that these facts and conclusions have been previously stated and enforced, but

they remain an illustration of scientific truths of important practical value still very little acted on. Naturalists are sometimes accused of being so foolish as to chase butterflies, and the culture of cabbage is not usually regarded as a very scientific operation; yet any one who reads a paper on the Cabbage butterfly, read at one of our meetings by the late Mr. Ritchie, may easily discover that there may be practical utility in studying butterflies, and science may be applied to the culture of the most common-places of vegetables. A valuable crop, worth many thousands of dollars, is hopelessly destroyed by enemies not previously known and appearing as if by magic. Entomology informs us that the destroyer is a well known European insect. It tells us how it reached this country and that it might have been exterminated by a child in an hour on its first appearance; but allowed to multiply unchecked, it soon fills all our gardens and fields with its devastating multitudes, and the cultivators of cabbages and cauliflower are in despair. But Entomology proceeds to show that the case is not yet hopeless, and that means may still be found to arrest its ravages.



THE "LANDSCAPE" LAWN MOWER.

A Lawn Mower is now felt to be a necessity by all who desire to have a well-kept piece of grass, however small in extent. To meet the now general demand for such a machine, several have been invented and put before the public. We have pleasure, after thorough trial and comparison with other mowers, in recommending the "Landscape" as, in our opinion, by far the best we have yet met with.

This machine has been universally awarded the preference for durability and variety of work. The quality of work done is unexcelled. The "Landscape" mows borders equally well with extended lawns, which can be said of no other machine. It

is noiseless. It can be adjusted with the greatest ease. The gears are entirely covered, rendering clogging utterly impossible. The large roll is useful in rolling lawns, and without this no machine is complete. In fact, the special points claimed for each of the different machines are all embodied in the "Landscape."

At a grand trial of mowers at Chicago, May 13th, 1870, this machine distanced all competitors. We know of several parties who have it in use, and all speak highly in its praise. It is much cheaper than the English lawn mowers, and does equally good work. Price \$25. Charles Black & Co., 42 King Street, Hamilton, are the general agents for this machine in Canada.

CLEVER SWINDLE.

Swindling has in these days become a science, and nowhere in the world perhaps is it carried to such perfection as among our neighbors across the lines. We state the fact without attempting to explain or account for it. From our proximity to the United States, these "Yankee tricks" are very liable to be imported hither. Our farmers have been taken in and done for many a time by ingenious rogues who have journeyed northward to improve their health and circumstances by breathing our invigorating air and preying upon our unsuspecting population. If "by hook or by crook" a rascal can get a good prosperous, well-to-do farmer to sign an obligation, it is not difficult to get the note discounted. This done, the swindler departs to remote regions, to renew his money-making experiments upon other innocent victims. One of the most ingenious devices for swindling farmers out of their hard-earned savings is described as follows by the *Western Rural*, and we give the description publicly, that all and sundry may be on their guard against this or like deceptions:—

"Mr. 'Oilygammon' approaches a farmer and expatiates upon the merits of the wares he has to dispose of, and his story is so plausible that his intended victim falls into the trap. The proposition is a very simple one; there can be no probability of loss, except perhaps a small amount at most, and the farmer is induced to sign his name to a contract. This contract is as follows:

LEESVILLE, IND., May 15th, 1871.

One year after date, I promise to pay A. Sharp or bearer ten dollars, when I sell by order, Two Hundred and seventy-five dollars worth of Sewing Machines for value received, at ten per cent. pr annum, said Ten Dollars, when due, is payable at Leesville, Ind.

JOHN SMITH, Agent for A. Jones.

Witness: JOHN FAY.

After the signature is obtained, the 'traveling agent' wends his way to the nearest market town, where, after severing the paper between the words 'or bearer,' leaving a note of hand, he disposes of it for ready money, at a discount. The note falls due, and the farmer is astounded to find that his ten dollar contract has been metamorphosed into a *two hundred and seventy-five dollar note!*

This is a most infamous trick, and the perpetrators should be dealt with and punished to the extent of the law. Let farmers be on their guard for such scoundrels."

CAUSE OF THE DEATH OF THE LATE MR. SANDFORD HOWARD.

Our April number contained a pretty full account of the history and demise of the above-named eminent agriculturalist, but we find in an exchange a paragraph concerning the immediate cause of his lamented death, which we publish, in the hope that it may operate as a caution to others, and possibly be the means of saving valuable lives. Not only men advanced in life, but even young and vigorous persons, may sustain serious if not fatal injury from sudden and violent physical effort.

"The stroke of apoplexy which caused the death of ex-Senator Howard, of Michigan, attacked him while assisting some workmen in cutting down a large tree which stood near his house, and almost upon the line between his lot and the one adjoining. It was necessary to make the tree fall in a certain direction, so that it might not fall on his neighbor's house or his own. For this purpose a long rope had been attached near the top of the tree, and when the tree had nearly been chopped off at its base, Mr. Howard and the workmen were tugging at the rope to make the tree fall as they desired. Mr. Howard said: "Now, then, a long pull, and a strong pull, and a pull all together," and was exerting his physical strength to the utmost, when he fell down unconscious. The exertion of tugging at the rope had burst a blood vessel in the brain, which had superinduced an apoplectic attack. During the afternoon he partially recovered consciousness, when it was discovered his right side was paralyzed. In this condition he lingered until his death. Moral: Men well up in years should not engage in any violent exercise."

DEPARTMENT OF PRACTICAL SCIENCE,
MCGILL COLLEGE.

While the government of the Province of Ontario, with praiseworthy enterprise, is taking steps to found a College of Technology McGill University, Montreal, is moving in a similar direction by initiating a Department of Practical Science:—The announcement of this new department is now before the public. The staff includes nine names, providing for the subjects of Geology and Palaeontology, Meteorology, Mathematics Natural Philosophy Metallurgy, Practical Chemistry, Assaying and Mining, English, French and German. The Chair

of Engineering is to be filled before the beginning of the session. The subjects above referred to are arranged in three separate courses, viz.—Civil Engineering, Mining Engineering, and Practical Chemistry and Assaying. The student may take any of these, either alone, or along with the studies for the Degree of Arts. The following statement is extracted from the announcement:—

"The advantage offered in this department may be stated as follows. Students may enter on passing an examination in Mathematics and English, and may proceed to take a three years' course in Practical Science. In the Junior year the studies will be the same for all, and will include Mathematics, Chemistry, English, French and German, Drawing and the use of measuring instruments. Students who have already acquired the training given in the Junior year, may enter in the Middle year. In the Middle and Senior years the Students may distribute themselves over three courses of study—one leading to Civil Engineering, another to Practical Chemistry and Assaying. In each of these, besides the special subjects, there will be studies in Mathematics, Physical Science, Natural Science, and Modern Languages: and appropriate Degrees will be given on examination at the termination of the several courses. In addition to this, students who enter on the Ordinary Matriculation Examination in Arts, and who pursue the full course for two years and pass the Intermediate Examinations, may obtain exemptions enabling them to take one of the courses in Practical Science, while proceeding to the Degree of B. A. Partial or Occasional Students who desire instruction for a short time in some particular branch of study, will also be admitted.

"It is hoped that these varied and eminently practical educational facilities will be taken advantage of by large classes of students. The fees have been fixed at a very moderate rate in comparison with similar schools abroad."

It should be added that the University is enabled to enter into this most useful work by the liberality of a few public spirited gentlemen, who have given special donations to this department.

EDITOR'S BOOK TABLE.

THE PEOPLE'S PRACTICAL POULTRY BOOK TABLE, a work on the breeds, rearing, and general management of Poultry; by Wm. M. Lewis. Illustrated with over one hundred engravings. New York: D. D. T. Moore, Publisher, *Rural New Yorker* office. Price \$1.50. "Of making many Poultry books, there is no end," and it says much for the increased and growing interest in poultry-keeping that so many such books find purchasers. It is no disparagement to other works of the same kind to say that this is a very complete, common-sense, and useful publication, well suited alike to the fowl-fancier, and to the practical poultry-breeder, a book for the million, as its title imports. The illustrations are excellent, and the letter-press faultless. It does great credit to the *Rural New Yorker* office, whence it emanates.

THE BEE-KEEPER'S CATECHISM, by S. H. Mitchell, is a complete reference book of nearly 90 pages, giving minute directions on the culture of the Honey Bee, both in common and moveable Comb Hives, and illustrates a system of artificial swarming by which good swarms can be made two weeks in advance of natural swarming. It is written not from theory, but is the result of over twenty years extensive practical experience in bee culture. Price 25 cents each; \$2 per dozen. Post-paid by mail on receipt of price.

Mr. T. J. Day, of Guelph, sends us samples of the following well-known monthlies:

WEDDING BELLS, "a journal for the married-and single."

BLACKWOOD'S EDINBURGH MAGAZINE for May. This number contains "The Battle of Dorking," a fancy sketch of England's war policy, from an ancient Tory point of view, which is making a great sensation in literary circles just now,—very unnecessarily as we think.

CHAMBERS' JOURNAL, Part lxxxix, May 31, 1871.

GOOD WORDS, June 1, 1871.

SUNDAY MAGAZINE, June 1, 1871.

NEW MUSIC.—Those enterprising Chicago Music Publishers, Messrs. Root & Caddy, have again laid us under obligation by forwarding a package of new pieces, all of which are good, and the following rare gems of melody:

"Sweet Bells of Memory," Solo and Chorus. "Beneath the Evening Star." "The day is ended," a sacred quartette. "Bird of the mountain," with Violin obligato, as sung by Christina Nilsson. "El Kshinoor Polka," Instrumental. "Rippling Wave Schottische," Instrumental. "Terrace Hill Waltz," Instrumental.

SEEDS.—We have received almost too late for testing, a parcel of garden seeds from Hon. Horace Capron, the U. S. Commissioner of Agriculture. It contained twenty-two varieties of vegetable seeds on its arrival at our P. O. box, and somewhere in its travels was lightened of an assortment of flower seeds, which had they reached their destination would have been even more welcome than the vegetable seeds. It would be well if some trace could be got of such P. O. frauds, as they are annoying to both senders and recipients. Mr. Capron has our best thanks for his polite attentions.

CURI BONO.—Prof. Daniels of the Wisconsin Agricultural College, who has charge of the experimental farm of that institution, raises the question in the *Western Farmer*, "Will it pay to sow potatoes, while potato bugs are so numerous?" He says "The beetles if left to themselves will destroy the crop, for there were never before so many of them at this season of the year. Paris Green, the only successful remedy, is costly when applied throughout the year; it injures the potato, and on account of the arsenic it contains ought never to be put on land. Hand picking is expensive, and will soon amount to more than the value of the crop."

Agricultural Intelligence.

CANADA STOCK FOR COLORADO AND THE WEST.

Two gentlemen from Colorado Territory, Messrs. Prower and Brewer, have recently visited Canada, and made extensive purchases of thorough-bred stock for importation to their own country.

Mr. Prower purchased two Herefords from F. W. Stone, Guelph, viz., yearling bull, Colorado Chief, at \$150, and two year old heifer, Gentle 12th, at \$250; also, four Shorthorns, of which three were yearling bulls; 3rd Duke of Clarence, \$350; Moreton Knight, \$300; Pilgrim, \$350; and a yearling heifer, Cambridge 11th, at \$300. From Geo. Craig Beachville, Short-horn bull calf, Young Napier by Gen. Napier 8199, \$200. From Thomas Friendship, St. Johns, a two year old Short-horn bull, Canada Lad, by Bell Duke of Oxford [830] \$400. From William Douglas, Onondaga, and Robert Douglas, Elgin, two year old Short-horn heifers at \$350 and \$300 each; two bull calves at \$150 each; one bull calf at \$120. From other parties, five Short-horn yearling heifers at \$160 to \$70 each. From Col. Taylor, London, his fine Short-horn cow Duchess of Portland at \$350, and two year old heifer, Bonnie Doon, at \$225. Mr. Brewer purchased 125 long woolled rams and 28 ewes, mixed Leicesters and Cotswolds, at \$6 to \$10 per head. This is one of the first importations from Canada to receive the benefit of the new law admitting stock for breeding purposes into the United States duty free.

In addition to sales included in the Colorado list above given, Mr. Stone has lately sold the following Short-horns: Yearling bull Sixth Grand Duke of Moreton, red, the first prize animal in his class at the Provincial Exhibition held in Toronto, 1870, to Alex. Campbell, Dresden, Missouri; two year old bull, Third Grand Duke of Cambridge, to Thomas Reid, Egremont; yearling bull Third Grand Duke of Oxford, to R. Hunt, Blenheim; four old bull, His Majesty, red, to John Reading, Guelph. Also the following Herefords: to John Hawes, Guelph, cow Gentle 2nd; heifer calf Gentle 14th and yearling bull Dominion Prince; to G. S. Burleigh, Mechanicsville, Iowa, cow Princess 2nd and yearling bull Guelph Baronet; to C. P. Bowditch, for Mrs. A. Ayrault, Genesee, N. Y., yearling bull Wellington Chief. Also, Berkshires as follows: to H. Q. St. George, Oakridges, eight months old boar pig; to W. H. Barbee, Frankfort, Ky., two very superior sow pigs; to G. L. Barbee (Georgetown, Ky.), two very fine sow pigs; to S. M. Shepard, Charleston, Ill., 6 months old boar pig; to Joseph Lesslie, Simcoe, 8 months old boar pig; to A. H. West, Detroit, Mich., two fine gilts eight months old.

Mr. Stone states that the average price of 46 Berkshire pigs, from three months old and upwards sold in 1870, was \$50 each—the average on the 9 just sold as above mentioned was \$60 each, gold. Mr. S. adds: "The demand for pure bred stock is good and increasing, and no doubt, now that the duty is off stock for breeding, the demand for superior animals will very much increase in the Western States."

DRILL AND BROADCAST SOWING.

At the annual general meeting of the Eastern Forfarshire Farmers' Association, Mr. Henderson, of Kincaig, read the following report of experiments in drill and broadcast sowing made by himself and Mr. Peter Haughs, of Kinnaird:—

The field on which these experiments were made is a light, black soil lying on gravel, is under a rotation of sevens, and had been in turnips in 1869; well manured with farm-yard dung, having 2 cwt. guano and 2 cwt. dissolved bones in addition. The season, the reporter would remark, was an unusually dry one, and unfavorable for such crops on such soils. He believes, however, that it afforded fair test of the comparative merits of drill and broadcast sowing, and reports as follows:

Barley sown by drill, 1st of April, 1870, 1 acre; seed, 3 bushels. Cut 12th August, 1870. Produce, weight, 55 lbs. per bushel, 4 qrs. 2 bushels 37 lbs.; light grain, 29½ lbs.; straw 98 stones.

Barley sown broadcast, of same date 1 acre; seed, 4 bushels. Produce, weight 54½ lbs. per bush., 4 qrs. 9 lbs.—2 bush, 29 lbs. Straw, 82 stones 16 lbs.—15 stones 6 lbs.

Result—Increase of barley after drilling, 2 bush. 28 lbs.; add for extra seed to broadcast, 1 bushel; 3 bushels 28 lbs. In straw per acre, 15 stones 6 lbs. in favor of drill.

Oats sown by drill, 31st March, 1870, 1 acre; seed, 4 bushels. Cut 13th August, 1870. Produce, weight, 43½ lbs. per bushel, 5 qrs. 1 bushel 15 lbs.; light grain, 30 lbs.; straw, 117 stones 2 lbs.

Oats sown broadcast of same date, 1 acre; seed, 4 bushels. Produce—weight, 43 lbs. per bushel, 5 qrs. 28 lbs.; straw 108 stones 13 lbs. 8 stones 11 lbs.

Result—Increase of oats after drilling, 27 lbs., add for extra seed to broadcast, 1 bushel. Say, 1 bushel, 27 lbs. in favor of drill. In straw, per acre, 8 stones, 11 lbs. in favor of drill.

RINDERPEST IN FRANCE.

The rinderpest, says *Bell's Messenger*, has acquired such a great development on the French frontiers of Switzerland that a sanitary cordon of the most severe description has been established by the Federal council. M. Henry Bouley, who is an authority on the subject, has made an interesting report to the French Academy of Science, in which he states that after their success at Orleans the French made a sad capture, viz., 180 head of cattle which had been abandoned by the Germans, and which contained the germs of the disease. This herd infected another of 3,500 head destined for the re-victualling Paris. General Chanzy being obliged to fall back, his herd of 3,500 cattle which he brought with him infected Laval, Morlaix, and Landernau, where the herd was reduced to 2,500. The mortality at Landernau was frightful; 200 head per day fell victims to the disease; and General Chanzy had one day from 700 to 800 head of dead cattle thrown upon his hands, with which he scarcely knew how to deal. Eventually they were all sunk in two old craft, and were carried out to the sea. At present M. Bouley considers that all the coasts of Brittany are infected with the disease, the Manche, the Cotes du Nord, the Ille-et-Velaine, &c. One great means by which the disease is unfortunately propagated in France is

the bad faith with which cattle dealers sell animals containing the germs of the malady to farmers at a tempting cheap rate; all the animals which thus unfortunately find their way into French homesteads become centres of infection. M. Bouley also considers that military routine has a tendency to contribute to the spread of the disease. He thinks that the human race is not likely to be infected with the rinderpest; in the abattoir where a number of diseased cattle have been slaughtered not a man has contracted the malady.

EGG SWINDLING.

The *Gardener's Monthly* calls attention to the practice of swindling in eggs which prevails extensively on the other side of the Atlantic among poultry fanciers. Breeders in Canada who send for eggs from Great Britain, should be careful that they deal only with parties of approved reputation. The authority to which we refer states that it is the custom of the fraudulent dealers in eggs to kill them before they quithis hands. No one needs to be told that to render an egg useless for the nest is easy enough without spoiling its appearance. A few seconds in boiling water will accomplish the object of the cheat. A smart shock, accomplished by a quick movement of the hand while the egg is grasped firmly, will sufficiently rupture the membrane and disarrange the fluid contents for the same purpose. It matters not how eggs are killed; it is a fact that they are killed preparatory to being sold at from one to five shillings each, and that is the infamy we feel it our duty to expose. Those who kill eggs can always betake themselves to the same argument as those who kill garden seeds. They can repudiate the accusation of fraud by charging the purchaser with unskillfulness in obtaining progeny. When seeds have been in the ground a month, and there is no plant to justify the sowing, who is to say the seeds have been killed in heated ovens before the purchaser obtained them? When eggs have become rotten in the warmest nest, who was to say that they were dead when first placed there? In such cases it is fair to make general deductions, as it may be said, with little fear of contradiction, that fully three-fourths of all the eggs sold to amateur breeders of poultry are as dead as door-nails at the very moment they are packed up with their "obliging" and "prepaid" orders.

ITEMS CONCERNING A SCOTCH FARM.

A writer upon Scotch farming, in the *North British Agriculturist*, speaking of the farm practice of Mr. Murray, near Dunbar, says: The best Scotch farmers are very particular about their seed, and Mr. Murray's practice in this matter is by no means exceptional across the border. He gets wheat generally every year from the south, as this crop does well coming from a slightly warmer climate. Seed-oats, on the contrary, are invariably obtained from a colder climate, as experience has shown this practice to yield the best results.

The rotation there adopted is as follows: 1. Turnips. 2. Barley (occasionally a little wheat) with seed. 3. Seeds—a part mown, and part grazed. 5. Half oats and half potatoes. 6. Potatoes after oats, and pulse after potatoes. 7. Wheat.

The pulse in the sixth year, after potatoes in the fifth, consists of beans on the stronger land, and of a mixture of beans and pease on the lighter. As a rule, therefore, the farm is annually divided as follows: One-seventh turnips, one-seventh potatoes, two-sevenths wheat and barley, between oats and pulse. The stronger land breaks consist of about 65 acres each, and the lighter land fields about 70. The former yield as much as the latter, and require as much labor, so that the division is fair in each aspect.

The farm consists of about 500 imperial acres of arable land. It is held on a nineteen years' lease, under Alexander Mitchell Innes, Esq., of Ayton Castle, at an annual rental of £2400, and the current lease is the second which has been taken by the present tenant. Considering the nature of a small piece of about nineteen acres of pasture, and the fact that the arable land includes about five acres of "links"—a poor sandy soil—it is clear that the natural advantages which have been referred to require to be turned to the best possible account to enable the tenant to obtain a profit after paying a rent which averages nearly £5 per imperial acre.

THE LITTLE FALLS DAIRY SHIPMENTS.

We have now the official returns from the freight agents at Little Falls, showing the quantity of dairy products shipped from this market during the year 1870. We give the figures below, showing the quantity shipped by rail for each month during the year:

	BUTTER.		CHEESE.	
	Pkgs.	Pounds.	Boxes.	Pounds.
January	42	2,621	1,830	122,945
February	126	3,049	421	26,175
March	254	15,849	4,421	289,432
April	481	23,813	3,545	231,642
May	142	3,612	9,487	580,859
June	16	954	14,791	844,252
July	6	329	15,978	1,024,333
August	30	1,973	25,020	1,657,988
September	106	7,139	15,975	1,007,536
October	261	16,396	11,628	785,949
November	283	16,393	9,911	464,618
December	221	14,229	3,493	296,186
Total	1,953	121,349	113,170	7,178,639

In addition, there were shipped by canal during the year 23,240 boxes of cheese, amounting to 1,536,219 pounds, which, added to the shipments by rail, make a total of 136,410 boxes of cheese, weighing 8,724,858 pounds.

From the above table of railroad shipments, we see that the largest deliveries were in the month of August, by about 10,000 boxes. The shipments for June, July and September, are very nearly the same for each month.

If we assume that the average price of cheese has been 15c., and butter 30c., per pound, we find that the transactions in Herkimer County Cheese at Little Falls have amounted during the year to one million three hundred and forty-five thousand one hundred and three dollars (\$1,345,103.)

We have not the figures showing the shipments of Herkimer County cheese from other depots in the county, but presume that the total will not vary much from 16,000,000 of pounds.—Ex.

TENNESSEE AGRICULTURAL COLLEGE.

Among the southern states that since the war have accepted the congressional grant of lands and put in operation an agricultural college, Tennessee stands prominent. The institution is located at Knoxville, in connection with the East Tennessee University. The trustees of the college have recently issued a circular from which we learn that, besides the regular classical course furnished by the University proper, there are two other courses of four years each, one for agricultural students and the other for students in the mechanic arts; besides these regular courses there are courses in the same studies occupying two years each. For admission the students must be 18 years old, of good moral character and well versed in reading, writing, arithmetic and geography. Board, without lodging, is furnished at two dollars per week; lodging room, fifty cents per month, or, if the student is indigent, free. Free transportation from college to the student's home, over the Memphis and Charleston, the Northwestern the Nashville and Chattanooga, and the East Tennessee, Virginia and Georgia Railroads, if the student has paid full fare in coming to the college, is furnished. Students may work on the farm to aid in paying their way. The next session of the college opens September 14th. The young farmers of Tennessee should avail themselves of the advantages here offered.

HIGH FARMING.

In a recent letter, Mr. Mechi maintains that the produce of the cultivated lands of the United Kingdom might, with profit to all parties, be more than doubled; and he has proved this, because, by careful cultivation of the ground farmed by him, though naturally poor and inferior, he has made it produce, not only double, but trade the average of the United Kingdom. This has been done with good profit to himself. In connection with so instructive a result and its causes, you will, perhaps, allow me to read a passage from a letter of mine, which appeared in a London journal early last year: "What is the cause of this triplicate produce upon soil inferior to the average? It is, in considerable measure, to be found in the fact that the *labour employed* cost 50s. an acre, whereas on the average of the United Kingdom, it is probably only 15s. According to the Tiptree returns (Mr. Mechi says), our 44,500,000 cultivated acres, throughout the United Kingdom, would produce food of the value of £534,000,000. Our present returns are £170,000,000; increase, £364,000,000. Observe, that Mr. Mechi's was poor land. He describes it as naturally much below the average of the United Kingdom. It once looked very unpromising, very discouraging. We see what it is now! The experience of the gentlemen whom I have named has been confirmed by that of many others, who, much to their credit, have come forward and described what they have effected, not only in relation to the physical practicability of vastly increasing the product of the soil, but at the same time securing good, satisfactory profit from the operation."—*Mr. F. Fuller at the Social Science Association.*

"POINTS IN WOOL."

The importance of the wool product of Australia is well known, and considerable attention is given to promoting the improvement of the sheep, particularly as regards the fleece. The Agricultural Society of Sidney, in its prizes on wool, this year adopted for the first time a "scale of points" for the use of judges, viz.: Length, 160; density, 100; softness, 60; fineness, 120; elasticity, 70; evenness of fleece, 90; soundness, 150; condition, 150; weight, 160; total points, 1000. The experiment appears to have worked quite satisfactorily. The correspondent of the London *Times* says that most of the prizes went to wool from New South Wales, but the Colonies of Victoria, Queensland, South Australia and Tasmania, were also represented. We infer from what is said that the above scale was the same both for clothing (Merino) and combing wool.—*Country Gentleman.*

THE INVASION.—In no former year do we remember such general complaint of the ravages by various insects as we do in this year of 1871. The codling moth, canker worm and the various curculios in orchards and fruit gardens; the Colorado beetle swarming on the potato vines everywhere; the chinch bug in wheat, corn and oat fields; the cicada or 17 year locusts, here and there in various localities by the million. It is getting to be about as much work to fight the insect enemies of our fruits and cereals as it is to cultivate and harvest them. Weeds—Canada thistles, ox-eye daisies, quack grass, anything in that line—would be freely exchanged for by our orchardists and farmers now the unfortunate possessors of myriads of destructive insects. What is to be done? Shall we call upon the entomological scientists, or are they unable to go beyond names, descriptions, habits and present remedies? Curculio catchers, curculio traps, Paris green,—the supply now almost exhausted—have done good work, but yet the hordes march on in their destructive invasion! The situation is not far from discouraging. O! for some modern St. Patrick, with enlarged powers, to drive these foes from the country!—*Prairie Farmer.*

POISONED BY A POTATO BUG.—The *Walworth County Independent*, published at Elkhorn, Wisr gives an account of a farmer's daughter, living near that place, who, while killing potato bugs, was suddenly seized with a violent pain in her finger, which soon extended to the arm, and her arm became swollen very rapidly. She went to the house and a physician was sent for. When he arrived, some two hours after, the arm, which was probably poisoned by a potato bug, was the color of mahogany, and was swollen to a fearful extent, the swelling extending to the shoulder. Prompt remedies were applied to relieve the poison, and the girl is now recovering. She had a slight sore on her finger and the poison was probably conveyed to the arm through it. It was a very dangerous type of poisoning, and people should be exceedingly careful how they come in contact with these potato bug pests.

SILK WORM EGGS FOR CALIFORNIA.—A large quantity of silk worm eggs has just arrived in San Francisco from Japan. They consist of 135,000 cards, costing in Japan \$675,000. The eggs were

contracted for in Japan by a French house, at \$5 per card. Through the embarrassment of the war in France, the house was compelled to cancel all orders by telegraph, and could not meet engagements already executed. The Japanese merchants 11 in number, on whose hands the eggs were left, immediately purchased a vessel, with which they took their stock to the California market.

SALE OF LORD WALSHINGHAM'S SHORT-HORNS.—The short horn herd of the late Lord Walsingham was sold by auction on the 18th of May, under the direction of Mr. J. Thornton. The lot comprised 46 cows, which brought an average of £41 9s., and 11 bulls at an average of £36 11s. 2d.—57 head in all, which realized a total of £2,308 19s. No very high prices were realized, the heifer Canondale fetching the highest, 80 guineas.

GUELPH CATTLE FAIR.—The June Cattle Fair, held on Wednesday, the 7th June, was but poorly attended. The cattle on the ground were mostly cows and working oxen. A very few fat oxen were sold at \$5 50 per 100 lbs. The cows fetched from \$25 to \$50; working oxen from \$95 to \$130 the yoke.

The Oakville *Argus* says rain is badly wanted for the strawberry crop. The fruit is of good size, but soft and not plump owing to the drought.

Mr. Isaac Pettit, of Grimsby, had new potatoes, peas, and strawberries of his own raising on hand on the 6th inst.

Twenty-four car loads of strawberries, comprising 256,000 quarts of the fruit, weighing 250 tons, passed through Wilmington, Del., for the North in a single day recently.

Nine hundred bushels of flax seed have been sold this spring in Listowel for seeding purposes. The farmers are sowing it more extensively now, as they find it pays.

It has been decided to hold a grand agricultural exhibition in Constantinople next year. The Porte has under consideration a proposal for an industrial exhibition at Smyraa.

The first lot of Australian wool ever brought to California has just come, amounting to 50,000 pounds, and costing about 15 cents in Australia and one cent for freight. Another lot of 200,000 pounds has been ordered. These wools will not remain in California, but will be cleansed there and shipped East.

The Paris *Star* say the rains have done the spring crops vast benefit, but fears it will have to chronicle a scanty crop of hay and fall wheat. Potatoes and Indian corn have prospered, and large quantities of wool are coming into market. The price of wool at Paris has varied from 34 to 35½ cents per pound, according to grade.

§ The short-horn herd of the late Earl of Aylesford was sold by auction on the 9th of May last. There were in all 34 head, consisting of 30 cows and 4 bulls. The former brought an average of £76 7s 7d each, and the bulls were sold at the average price of £121 16s.—the sale of "Lord Collingham" for 300 guineas giving this high figure to the average, as the other three bulls did not realize any extra price.

Mr. H. M. Cochrane reports several recent sales, among which were Compton Lord Wild Eyes, to J. B. Wilder, Esq., of Kentucky; the bull Brestplate,

out of Star of the Realm, to J. W. Prewett, Winchester, Ky.; and to Edward Iles, of Springfield, Ill., the heifer Star Flower, by 11th Duke of Thornedale 5611, out of imp. Star of Braithwaite, by Baron Booth (21212).

Lord Dunmore, in a letter to *Bell's Messenger*, states that in addition to the two heifers from Duchess 101st and Duchess 103rd, he has received from Mr. Cochrane, of Canada, the 11th Lady of Oxford, in calf to 6th Duke of Geneva. This very fine animal was obtained by Mr. Cochrane from Hon. W. S. King, of Minneapolis, Minn., a few months ago, probably to fill this order of Lord Dunmore.

It is stated by the *Vindicator* that the strawberry crop in the neighborhood of Oshawa will prove a partial failure. Nearly half the plants of Mr. French were winter killed, and other growers, but not all, report similar loss. The plants uninjured promise to bear abundantly. Mr. French's berry crops, both Black Caps and Kittatiny, promise well being wintered safely. Early cherries are also a failure, the severe frost of last winter being the cause. Other fruit trees are well covered with blossoms.

General Capron, Commissioner of Agriculture, reports that tea culture is fast becoming a recognized industry in the Western and Southern States, and that in a few years enough tea will be grown on native soil to meet the home consumption. He states that the transplanting of tea to these sections has been a great success, and that the prospects for its rapidly becoming an important feature are most encouraging. Some 40,000 plants have been distributed South and west, and so well have they thriven that the department is in turn distributing the seed from those raised in North Carolina.

At the great sale, on the 27th ult., of thoroughbred brood mares, colts, fillies, hunters, saddle and carriage horses, the property of Mr. John Shedden, at Lower Lachine, near Montreal, the sum of nearly \$14,000 was realized. Among the horses sold were the celebrated stallion "Thunder," for \$1,700; a two year old filly, by "Thunder," \$555; brown quarter-bred colt by the same, \$475; the two year old stallion "Marquis of Lorne," by "Brutus," \$520; one year old grey filly by "Thunder," \$450; the imported mare "Arnica," in foal to "Thunder," \$500; a black four year old filly by "Wagram," \$580; and the well-known mare "Di Vernon," \$275. Nearly all the "Thunder" stock went up among and beyond the four hundreds; and three Shetland ponies of the "Tom Thumb" get brought \$540.

IMPORTED CATTLE.—Mr. John S. Armstrong of Eramosa, got 2 yearling heifers and 1 yearling bull, all thoroughbred Durhams, sent out from Aberdeenshire, Scotland. The passage across the ocean was very rough and the bull died. The heifers (pretty dark reds) arrived in Fergus yesterday, and one of them is in fine health, but the other was injured on the voyage—from the effects of which, however, it is expected that she will recover. Mr. Telfer, of Pilkington, was getting 1 bull and 2 heifers out from the same place on the same vessel. One of the heifers died on the way, but the bull and the other heifer arrived safe. The cattle were all purchased and shipped by Mr. John Ironsides, brother. —*Fergus News Record*.

Our Country.

AGRICULTURAL AND HORTICULTURAL
SOCIETIES IN ONTARIO, 1871, AND
THEIR SECRETARIES.

[N. B.—Electoral Division Societies are printed
in SMALL CAPITALS, the rest are Township Societies.]

ADDINGTON.—J. B. Aylsworth, Newburgh.
Camden.—J. B. Aylsworth, Newburgh.
Loughborough.—W. Boyce, Loughborough.
Portland.—J. Cook, Harrowsmith.
Sheffield.—J. Aylsworth, Tamworth.
ALGOMA.—C. J. Brampton, Sault Ste. Marie.
BRANT, NORTH.—D. R. Dickson, Paris.
Brantford.—W. P. Croome, Cainsville.
Onondaga.—W. Burrill, Onondaga.
Paris Horticultural Society.—Henry Hart, Paris.
BRANT, SOUTH.—W. Sandeson, Brantford.
Brantford Horticultural Society, B. F. Fitch,
Brantford.
BOTHWELL.—Wm. Latimer, Selton.
Euphemia and Dawn.—Isaac Unsworth, Florence.
Howard.—C. Grant, Ridgectown.
Zone.—John Taylor, Rothwell.
BROCKVILLE.—Bethnel Loverin, Greenbush.
BRUCE, NORTH.—James Saunders, Paisley.
Aran.—J. N. Gardner, Invermay.
Bruce.—H. Murray, Underwood.
Elderslie.—J. C. Gibson, Paisley.
Saugeen.—James Muir, Normanton.
BRUCE SOUTH.—A. S. L. Mackintosh, Walkerton.
Brant.—A. S. L. Mackintosh, Walkerton.
Carrick.—Dr. J. Murphy, Mildway.
Culross.—V. Fraser, Teeswater.
Greenock.—J. Cunningham, Greenock.
Huron.—T. Wilson, Kincardine.
Kinloss.—R. L. Hunter, Lucknow.
CARDWELL.—John Allen, Mono Mills.
Adjala.—J. C. Hart, Keenansville.
Albion.—L. R. Bolton, Albion.
Caledon.—D. Kirkwood, Reckside.
Mono.—J. Lindsay, Orangeville.
CARLETON.—G. W. Eaton, Ottawa.
CORNWALL.—J. S. McDougall, Cornwall.
DUNDAS.—A. G. Macdonell, Morrisburgh.
Matilda.—Thos McNully, Iroquois.
Mountain.—Alva Carrigan, Inkerman.
Williamsburgh.—Wm. Whitteker, Williamsburgh.
Winchester.—James Gallispie, Winchester.
DURHAM, EAST.—John Foot, Port Hope.
Cavan.—J. W. Soothern, Millbrook.
Hope.—R. Dickson, Port Hope.
Manvers.—A. Ryley, Bethany.
Port Hope Horticultural Society.—F. E. Gandrie,
Port Hope.
DURHAM, WEST.—R. Windatt, Bowmanville.
Cartwright.—James Parr, Cartwright.
Clarke.—G. S. Lovekin, Newcastle.
Darlington.—R. Windatt, Bowmanville.
Bowmanville Horticultural Society.—W. R. Clin-
nie, Bowmanville.
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Bayham.—R. L. McCally, Vienna.
Dorchester, South.—M. Fullerton, Lyons.
Malabide.—W. M. Causland, Aylmer.
Yarmouth.—L. S. Leonard, St. Thomas.
ELGIN, WEST.—A. Barclay, Wallacetown.
Aldboro'.—Richard Coates, Rodney.

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Colchester.—Walter Grubb, Oxley.
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burgh.
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GREY, SOUTH.—S. E. Legate, Durham.
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Egremont.—D. Allan, Holstein.
Meloncthon.—H. Jarvis, Horning's Mills.
Normanby.—W. H. Ryan, Mount Forest.
Osprey.—T. Gamey, Maxwell.
Proton.—J. G. Peer, Ronaldsay.
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Maitland.
Rainham.—John Law, Rainham Centre.
Seneca, Oneida and North Cayuga.—F. A. Nellis,
York.
Walpole.—W. R. Hewitt, Cheapside.
HALTON.—W. C. Beaty, Omagh.
Esvucting.—John Murray, Esquesing.
Nassagaweya.—S. R. Lister, Nassagaweya.
Nelson.—Robert Miller, Nelson.
Trafalgar.—H. M. Switzer, Palermo.
HAMILTON.—F. C. Bruce, Hamilton.
HASTINGS, NORTH.—Jas. J. Ryan, W. Huntingdon.
Dungannon, Faraday, &c.—John Wilson, L'Am-
able.
Huntingdon.—James Hagarty, Huntingdon.
Madoc.—Charles Grean, Madoc.
Rawdow.—G. E. Bull, Stirling.
HASTINGS, EAST.—P. R. Palmer, Thurlow.
Thurlaw.—G. R. Palmer, Thurlow.
Tyendinaga.—Charles Anderson, Melrose.
HASTINGS, WEST.—D. R. Ketcheson, Wallbridge.
Huron, North.—S. Malcomson, Clinton.
Ashfield and Wawanosh.—J. M. Roberts, Dun-
gannon.
Grey.—D. Stewart, Dingle.
Howick.—W. Lawrie, Wroxeter.
Hulle'.—E. Holmes, Clinton.
Turnbury.—R. A. Graham, Wingham.
Wawanosh, East.—J. H. Taylor, Westfield.
Huron, South.—Hugh Love, sr., Hill's Green.
Hay.—R. Brown, Zurich.
Stanley.—John Walker, jr., Varna.
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Goderich.
KENT.—James Hart, Chatham.
Chatham.—John Lillia, jr., Wallaceburgh.
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Raleigh.—A. H. White, Charing Cross.
Tilbury, East.—J. Fletcher, Tilbury, East.
KINGSWON.—E. H. Smyth, Kingston.

- LAMBTON—Wm. Mowbrey, Logierait.
 BOSANQUET—M. Watson, Widder Station.
 BROOKE—E. Bowlby, Napier.
 EMINISKILLAN—John Hendra, Ossian.
 MOORE—H. J. Miller, Corunna.
 PLYMPTON—John Simpson, Aberarder.
 WARWICK—George Smith, Warwick.
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 LANARK—James Stewart, Middleville.
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 RAMSAY—Gilbert Forgie, Almonte.
 LANARK, SOUTH—Arch. Campbell, Perth.
 BECKWITH—A. McArthur, Carleton Place.
 BATHURST—Peter Cameron, Perth.
 DRUMMOND—Timothy Doyle, Perth.
 MONTAGUE—E. Chalmers, Smith's Falls.
 LEEDS AND NORTH GREUVILLE—Samuel Connor, Franville.
 LEEDS, SOUTH—Wm. Brough, Gananoque.
 CROSBY, NORTH—R. D. Reubens, Newboro'.
 LANSLOWNE—W. Thomson, Lansdowne.
 YONGE and ESCOTT—J. C. Alguire, Farmersville.
 LENNOX—Charles James, Napanee.
 AMHERST ISLAND—Capt. C. Skene, Emerald.
 FREDERICKSBURG, NORTH—W. N. Dollar, Napanee.
 LINCOLN—James Lawrie, St. Catharines.
 CLINTON—John Akers, Beamsville.
 GRANTHAM—Wm. H. Emmett, St. Catharines.
 GRINSBY—J. T. Middleton, Smithville.
 LOUTH—J. Pauling, Port Dalhousie.
 LONDON—Wm. McBride, London.
 MIDDLESEX, NORTH—W. K. Atkinson, Ailsa Craig.
 ADELAIDE—A. Preston, Adelaide.
 BIDDULPH—C. M. Webb, Granton.
 LOBO—J. Irvine, Lobo.
 MCGILLIVRAY—R. Shoutts, McGillivray.
 WILLIAMS, WEST—J. Dawson, Sylvan.
 WILLIAMS, EAST—T. G. Ship cy, Falkirk.
 MIDDLESEX, EAST—H. B. Anderson, London.
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 LONDON—R. Orr, Arva.
 WESTMINSTER—Thomas Fleming, London.
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 PELHAM—Samuel Beckett, Riveville.
 WAINFLEET—J. Priestman, jr, Marshville.
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 NIAGARA—Blex. Servos, Niagara.
 NORTHUMBERLAND, EAST—R. P. Hurlburt, Warkworth.
 BRIGHTON—A. A. Becker, Hilton.
 CRAMAHE—W. Easton, Colborne.
 MURRAY—H. Fieldhouse, Rosa.
 PERCY—R. P. Hurlburt, Warkworth.
 SEYMOUR—John Clark, Burnbrae.
 NORTHUMBERLAND, WEST—C. Bourn, Cobourg.
 ATAWICK—J. Thackeray, Roseneath.
 HAMILTON—R. Cullis, Cobourg.
 HALDIMAND—J. Gillard, Grafton.
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 MIDDLETON—L. C. H. Heron, Courtland.
 TOWNSEND—Nelson Bouhnece, Waterford.
 WINDHAM—D. W. Freeman, Simcoe.
 NORFOLK, SOUTH—A. W. Smith, Simcoe.
 CHARLOTTEVILLE—L. H. Montrop, Vittoria.
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 WOODHOUSE—T. M. England, Port Dover.
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 BROCK—T. H. Glendinning, Sunderland.
 MARA and RAMA—George Boulton, Atherby.
 BEACH and SCUGOG—John Christie, Manchester.
 SCOTT—Andrew Turner, Ashworth.
 THORA—N. J. Patterson, Beaverton.
 UXBRIDGE—Thomas Todd, Goodwood.
 ONTARIO, SOUTH—George Robson, Whitby.
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 OTTAWA—A. S. Woodburn, Ottawa.
 OXFORD, NORTH—R. W. Sawtell, Woodstock.
 BLANDFORD—John Oliver, Rath.
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 MISSOURI, EAST—J. W. Robinson, Kintore.
 ZORRA, EAST—R. Campbell, jr., Strathallan.
 ZORRA, WEST—James Munro, Embro.
 OXFORD, SOUTH—R. T. Williams, Culloden.
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 NORWICH, SOUTH—A. B. Moore, Otterville.
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 PEEL—D. L. Scott, Brampton.
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 ASPHODEL and BELMONT—W. E. Roxburgh, Norwood.
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 DYART—James Irwin, Haliburton.
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 PRESCOTT—John Shields, Vazleekhill.
 CALEDONIA—H. J. Bradley, Fenaghvale.
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 PLANTAGENET, SOUTH—A. McLean, Riceville.
 PRINCE EDWARD—J. P. Roblin, Picton.
 AMELIASBURGH—E. Roblin.
 HALLOWELL—L. B. Stinson, Bloomfield.
 HILLIER—S. W. Fingler, Wellington.
 SOPHIASBURGH—A. Greely, Picton.
 PICTON Horticultural Society—Thomas Bog, Picton.
 RENFREW, NORTH—N. W. Jackson, Westmeath.
 ROSS—Robert Allen, Cobden.
 RENFREW, SOUTH—R. McLaren, Renfrew.
 ADMANSTON—Alex. Brown, Admaston.
 GRATTAN and WILBERFORCE—S. G. Lynn, Eganville.
 MCNAB—A. Hamilton, Balmer's Is.
 RUSSELL—Ira Morgan, Osgoode.

Clarence—George Edwards, Clarence.
 Cumberland—C. Hunter, Osborn.
 Gloucester—James Johnston, Ottawa.
 Osgoode—J. Campbell, Osgoode
 Russell—E. F. Loucks, Russell.
 SIMCOE, NORTH—John Darby, Simcoe.
 Medonte and Flos—Wm. Harvey, Elmvale.
 Nottawasage—H. M. Frame, Glen Huron.
 Orillia—H. Sutherland, Orillia.
 Oro—Joseph Thomas, Edgar.
 Sunnidale—Alex. Hislop, Stayner.
 Tiny and Tay—T. C. Ross, Penetanguishene.
 Vespra—George Sneath, Midhurst.
 SIMCOE, SOUTH—W. M. Stevenson, Bradford.
 Gwillimbury, West—W. M. Stevenson, Bradford.
 Essa—John Scott, Thornton.
 Innisfil—Thomas McConkey, Lefroy.
 Mulmer—J. A. Love, Stanton.
 Tecumseth—Henry Stone, Tottenham.
 Tossoronto—Geo. Cumming, Rosemont.
 STORMONT—George Shaver, Wa. es.
 Finch—D. G. McMillan, South Finch.
 Osnabruck—George Shaver, Wa. es.
 Roxborough—John Bennett, Athol.
 TORONTO—William Edwards, Toronto.
 VICTORIA, NORTH—John McTaggart, Kirkfield.
 Bexley, Saxton and Digby—S. J. Corbett, Oak Hill.
 Fenelon—H. Davis, Fenelon Falls.
 Muskoka—R. J. Bell, Bracebridge.
 Eldon—G. W. Miller, Woodville.
 VICTORIA, SOUTH—W. J. Thirkell, Lindsay.
 Emily—J. R. McNillie, Omemee.
 Mariposa—W. H. McLaughlin, Oakwood.
 Verulam—J. L. Read, Bobcaygeon.
 Lindsay Horticultural Society—J. H. Knight, Lindsay.
 WATERLOO, NORTH—Moses Springer, Waterloo.
 Wellesley—George Oakley, Cross Hill.
 Woolwich—James Hall, Winterbourne.
 WATERLOO, SOUTH—Alex. McGregor, Galt.
 Wilmot—R. C. Tye, Haysville.
 WELAND—Alex. Reid, Crossland.
 Bertie—E. A. Dickont, Point Abino
 Crowland—John McIntyre, Crowland.
 Humberstone—E. W. Farer, Port Colborne.
 Stamford—George Hyatt, Stamford.
 Thorold—Robt. Spencer, Allanburgh.
 Willoughby—James McCredin, Chippewa.
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 Amaranth—R. T. Martin, Whittington.
 Arthur—James Isles, Arthur.
 Minto—Alex. Meiklejohn, Harriston.
 Peel and Maryboro—Thomas Henderson, Hollin.
 WELLINGTON CENTRE—John Beattie, Fergus.
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 Erin—J. W. Burt, Coningsby.
 Garafraxa, East—John Preston, Reading.
 Garafraxa, West—J. J. Dobbin, Garafraxa.
 Nicol—Alex. Goforth, Fergus.
 Pilkington Robert Cromar, Salem
 WELLINGTON, SOUTH—George Murton, Guelph.
 Guelph—George Murton, Guelph.
 Puslinch—Joseph Grant, Aberfoyle.
 Guelph Horticultural Society—George Murton, Guelph.
 WENTWORTH, NORTH—J. Weir, jr., W. Flamboro'.
 Beverley—W. McDonnell, Brookston.
 Flamboro' East—Thomas Stock, Waterdown.
 Flamboro' West—C. Durrant, W. Flamboro'.
 WENTWORTH, SOUTH—W. A. Cooley, Ancaster.

Ancaster—F. Snider, Ancaster.
 Barton and Glanford—C. Grey, North Glanford.
 Saltfleet and Binbrook—J. Davis, Mount Albion.
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 Georgina and North Gwillimbury—Angus Ego, Georgina.
 Gwillimbury, East—A. J. Hughes, Sharon.
 King—Joseph Stokes, Schomberg.
 Whitechurch—M. Jones, Bloomington.
 YORK, EAST—James Robinson, Markham.
 Markham—James Speight, Markham.
 Scarborough—J. Crawford, Malvern.
 YORK—John McCarter, Toronto.
 YORK, WEST—B. Bull, Davenport.
 Etobicoke—W. A. Idle.
 Vaughan—Thos. Grahame, Woodbridge.
 YORK—John McCarter, Toronto.

Suits and Man facturers.

HOW DO YOU PROVE YOUR PLUMB RULE?

A TECHNICAL LESSON.

The following particulars are authentic, and I remember all the parties. I shall condense from memory. The matter in dispute was a brick wall which fell shortly after its erection, the downfall of which was accelerated by a down-pour of rain. When the builder put in his bill for payment, his client refused to acknowledge any claim. The wall was certainly built, and the wall was certainly down. The client contended that it was badly constructed, and that it was put up in an unworkmanlike manner; the builder, on the other side, was ready to swear and prove that it was erected by competent workmen, and that it was executed in a creditable and workmanlike manner.

The case had to be settled in the law courts, the builder being the plaintiff. The defendant secured the services of a clever, well-known counsel, who was known to have a knowledge of architecture. When the builder had given his evidence, he was submitted to a severe cross examination, in which his practical knowledge cut a very sorry figure. The particular point of the question turned upon the plumbing of the wall, whether it was truly perpendicular, and whether the plumb-rule was correct. The builder said he was ready to take his oath that the wall was plumb, and that the plumb-rule was quite correct.

"Listen for a moment, gentlemen of the jury," cried the defendant's counsel, "while I put this master-builder to the test. You will be able to judge of his practical acquaintance with his profession from the answer he gives. Well, Mr. Builder, you are ready to swear upon your oath that the wall was plumbed, and the plumb-rule was correct?" "Yes." "You are?" "Yes."

"Will you be so good, Mr. Builder, as to turn round and tell those twelve intelligent jurymen in that box how you know that your plumb-rule was correct?" The builder hesitated for a moment, and then replied, "I know it was correct; for my workmen are always careful and particular with their work." I am not disputing the character you give your workmen," replied the counsel; "I merely ask you to tell the jury how you know that the plumb-rule they worked was correct." "I know it was correct," repeated the builder, "because it was made the same as all plumb-rules are made, and used by

men in the habit of using them." "I must again ask you, Mr. Builder, to be so kind as to tell the jury or me how you are certain that the plumb-rule was true; or in other words, let us know how you prove your plumb-rule?"

This was a poser.

"Now, Mr. Builder," continued the defendant's counsel, "you have come into court to make a claim against my client; you swear that the wall was built properly plumb, and that it did not tumble down from bad workmanship. I now ask you as a respectable builder, to just explain to the jury the method of practically constructing and proving a plumb-rule. You are no doubt aware that if a plumb-rule is not correct, the work that it is applied to will not be correct. I am ready to prove that it was not correct, that the wall was overhung. Geometrically speaking, it was out of perpendicular; consequently, I deny that you have any claim for payment."

A silence of some minutes reigned, and then the plaintiff made one or two ineffectual attempts at explanation, but got so confused that he completely broke down.

"It is needless, you see, your honor and gentlemen of the jury, for me to carry this case much further. I will simply conclude by saying, here is an instance of the deplorable consequences attending rash assertions and wrongful claims. Men are found to come forward to make a claim for what they have no right, or have forfeited, and are ready to fortify their unfair demands by swearing that they know practically what they do not know. Well, gentlemen of the jury, as the master-builder, when in the box, was unable to prove his plumb-rule, perhaps he will not take it amiss from a lawyer to tell him how to practically construct, and prove at the same time a plumb-rule, which may be depended upon for plumbing a straight wall, or any other description of perpendicular work.

"Take a piece of board a little more than the proper length, breadth, and thickness which you require. With a pair of compasses strike a circle on its face within a few inches of either end. Plane straight on the edge until the sides of the circle are touched—repeat on opposite edge. When this is done, your piece of board will be of parallel breadth. Then a line drawn through the centre, with a slit for the cord and an opening for the play of the 'bob,' will complete your plumb-rule. I am not an architect, gentlemen of the jury, but I believe that no practical architect, builder, or workman will say I have not given a practical method to prove a plumb-rule. One word more, gentlemen; I think when a master-builder comes into court and takes it upon himself to swear that his work was properly executed, he ought to be able to give us proof, when asked, of the workmanlike manner of its accomplishment. I now ask a verdict for my client.

The jury unanimously declared in favor of the defendant, the foreman saying that he himself and his fellow-jurors were of opinion that the wall was badly constructed and out of plumb, and that that was the reason of its fall.

It may be asked here, Was the counsel for the defendant technically correct in his method of proving a plumb-rule of any length? And it may be further asked, How many master-builders, and workmen too, are there at the present hour, who, if called upon suddenly, could practically demonstrate in proper language, the geometrical construction of a simple plumb-rule or straight-edge? However

astounding it may seem, I have come across a great many workmen who could not, without some thinking and groping, properly set out the egg oval opening, or "bob" hole in their plumb-rule. Archimedes is reported to have said that if a prop or position, and a lever were given to him, he would move the world. Technical knowledge is the prop, the position, and the lever; and without the ambition of the great Greek mathematician, it will enable a man, at some time or other, to lift himself in the world, and, morally and socially speaking lift up the world at the same time.—*Manufacturer and Builder.*

WASHING WOOL.

The reports going the rounds of the industrial and technological papers that bi-sulphide of carbon is successfully used in Belgium, and elsewhere, to free wool of its grease, are totally erroneous.

The facts of the case are, that the French chemist, Claudet, founded in 1858, at Elbeuf, an establishment for freeing wool from fat by this process. It was found, however, that the action was so powerful, and that the wool was so entirely deprived of all oily substances, that it became brittle, and could not withstand the operation of machine-spinning, the fibres breaking continually. After eighteen months, the concern broke up. Moisir & Co. founded in 1855, in the same place, a stock company for washing wool with benzine, with a capital of 350,000 francs. The fat and oil thus extracted from the wool was separated by distillation from the benzine, which could of course be used repeatedly, while the oil was sold to soap-makers and tanners. The opposition, however, of a class of workmen who lost by this improvement was so powerful, that the establishment wound up, after scarcely a year's existence, and was sold at auction for one-fifth its original cost. Then another establishment was founded at Verviers, Belgium, which again attempted to use bi-sulphite of carbon for the same purpose; but as this has since failed, no other attempt has been made either in France or Belgium.

HEMLOCK WOOD PROOF AGAINST RATS.

A correspondent of the *Philadelphia Medical and Surgical Reporter* says:

Being surrounded by these animals, I found it necessary to keep fruits, butter, cheese, and other articles in boxes made up of Hemlock (*Abies Canadensis*). In those boxes I could keep the most toothsome delicacies in the cellar with impunity, even though the box afforded free ventilation, which, in many cases, is highly necessary.

To test the matter still further, I made a box of dry hemlock boards, perforating each end of the box with a 7-8 inch circular hole. Into this box I put a large healthy rat, caught in a hemispherical wire trap, nailed it up securely, put it in a dark, quiet place, and awaited the result.

On inspection, at the end of twenty-four hours, I found he had scarcely more than touched the wood. I returned the box, leaving the rat to his cogitations, which horn of the dilemma to choose.

At the end of forty-eight hours, I made him another visit. He had evidently come to the conclu-

sion that remaining inactive was to strand upon Scyllia, while the effort to buy his liberty could do no worse than wreck him upon Charybdis. He had enlarged the hole sufficiently to get his head out, in which condition I found and despatched him on the third morning of his incarceration.

THE PRESERVATION OF EGGS.

The *Journal de Pharmacie et de Chimie* contains an account of some experiments by M. H. Violette, on the best method of preserving eggs—a subject of much importance in France. Many methods had been tried; continued immersions in lime-water or salt water; exclusion of air by water, saw-dust, etc. and even varnishing has been tried, but respectively condemned. The simplicity of the method adopted on many farms, namely, that of closing the pores of the shell with grease or oil, had, however, attracted the attention of the author, who draws the following conclusions from a series of experiments on this method. Vegetable oil more especially linseed, simply rubbed on the egg, hinders any alteration for a sufficiently extensive period, and presents a very simple and efficacious method of preservation, eclipsing any methods hitherto recommended or practiced.

Hearth and Home.

SOMETHING ABOUT BREAD-MAKING.

A subject that interest everybody is that of bread-making and as a general thing, there is too much popular ignorance respecting it. In the process of grinding wheat for superfine flour, the outer shell, composed chiefly of gluten, been tenacious and adhesive, comes from the mill in flakes with the bran, and is sifted out, while the starch, which is the chief element in fine flour, is saved, which contains no food for brain and muscle; and the gluten, containing phosphates and nitrates they furnish support for brain, bone, and muscle, is cast away with the bran, and is feed to horses, cattle, and pigs. And this is the kind of flour that makes nine tenths of the bread in American cities, besides all that is used in cakes, puddings, and pastry.

A method of making bread from whole wheat, without previously grinding it into flour, has been devised by a Frenchman named Sezille. The grain is first soaked in water for half an hour; then put into a revolving cylinder with a rough inside surface, and shaken up, so as to remove the coarser part of the skin; and then soaked twenty or twenty-four hours more in water of the temperature of 75 degrees Fahrenheit, with which a little yeast and glucose has been mingled. By these means the grain acquires a pasty, doughy consistence, and can be mixed up by machinery and made into bread in the usual way. The invention is an important one, both from its saving the expense of grinding, and from the greater economy of keeping and transporting the whole grain instead of flour.

A HEALTHY BREAD.

The most economical and best bread, especially in cold weather, when a hot fire is constantly kept, is what is sometimes called gems, or unleavened

biscuit. For this purpose a group of cast-iron pans or cups $2\frac{1}{2}$ by $3\frac{1}{2}$ inches each, all made in one casting, is used. Those pans are set on the top of a hot stove and allowed to become almost smoking hot when buttered for use. Then with cold water and milk, half-and-half, or with cold water alone, and the colder the better, mix and stir quickly with a stiff spoon as much Graham or unbolted wheat-meal as will make a stiff batter or thinnish mush; and when the pans are hot, fill them quickly with the thin dough and let them stand a minute on the stove before putting into a very hot oven, where they should remain twenty or twenty-five minutes, until done. If the mixture be neither too thin nor too stiff, and the pans and the oven be hot, you will have twelve as light and wholesome biscuits as any epicure could wish to eat. They may be eaten smoking warm from the oven, as they contain no poisonous chemical elements like yeast bread, which requires cooling to be rid of. They are good cold, or may be warmed in a steam-kettle. Anybody, however unskilled in cooking, can learn to make these light and nice every time. Nice, fresh wheat-meal, very cold wetting, quickly done, with a very hot place to bake them, will insure the best of "luck" always. These, like all other Graham bread, should be fresh every day.

For growing children, and those people who work or think, and especially students and sedentary persons, there is no other bread, and scarcely any other single article of food, that equals it. Let the poor who cannot afford to lose 14 per cent of the grain in the cast-off bran; let those whose bones and muscles are small, tending to rickets and spinal curvature; let invalids and dyspeptics try it, and they never will go back to superfine bread simply because it looks white and nice, and, when, dry, is more pleasant to the mouth than the brown.—*Scientific American.*

A PLEA FOR LITTLE TOES.

We fully believe that there is not a shoemaker in the universe who by any means plasanter than the pillory could be brought to allow space in a boot to hold the helpless little toe. We speak with the unctious of experience. We have planted a toe on a piece of paper as wide as it would spread, and while the shoemaker followed the outline, have conjured him to leave room for *that toe*. He never did it. Numerous untarnished boots, hanging against a wall bear expressive witness to the inhumanity and utter lack of anatomical knowledge in shoemaking men. No wonder a young girl out west had her little toes chopped off. And no wonder the young lady in Hartford had such sore toes on her wedding-day that she could not stand up to be married. The only wonder is that our women stand up at all, much more that they walk, which, by the way, they do more badly than any women under the sun, except the Chinese. We used to pity the poor Chinese women, but have transferred our compassion to our country-women. Look at them as they pass by your window some bright day! The wretched fiction of a "Grecian bend," the more wretched fact of laced-up lungs, cannot account wholly for that feeble, tectering, gasping walk, a walk utterly devoid of vitality, elasticity or grace; but looking down at the wretched little boot with its French heel, bringing the whole weight of the body on the toes, explains it all.

The ungarnished fact is that American women are fast becoming a nation of cripples. Nothing can prevent their growing to be such, unless there is an entire and radical change in the shape of their shoes. Girls, respect the rights of your little toes.—*Western Rural.*

TEA AS A MENTAL STIMULANT.

The *Boston Medical and Surgical Journal* is usually rather dry reading, except to the profession; but it very often has a great deal of information hidden under technical phraseology. Thus the last number contains an interesting communication upon the action of Thein on the human system. Thein is an integral part of tea, and gives to that herb its peculiar force as a stimulant. It is also found in coffee, and in certain South American plants whose leaves are used to prepare a table beverage. The author of the article in question made several experiments of Thein on human cases. It was found that in every case the pulse was lowered, a nervous tremulousness followed, and special mental activity was noticeable. One gentleman under the influence of this alkaloid, spoke emphatically of his increased brain power, enabling him to read certain books, which he had before counted as abstruse, with the greatest ease, and an extraordinary power of grasping the subject without any effort as he read rapidly on. The testimony of "one of the most powerful writers among our New England women" is also adduced. Her testimony was to the effect that some hours after taking a large quantity of tea, she felt as if there was nothing left but her head, which furnished rapidly language or ideas of the best quality, in goodly quality all night long. In its medicinal form, Thein is employed as a sedative. This, by the way, appears something like a strong allopathic indorsement of Hahnemann's theory. It cures neuralgic headaches, where pills are objected to. Their ointment for the hair is found to have a like effect. Pastiles made with Thein, when burnt in a room, are said to produce an equally soothing effect to irritable nerves.

HINTS TO NIGHT-WATCHERS.—A person who is sick enough to need night-watchers needs rest and quiet, and all the undisturbed repose he can get. If one or more persons are in the room reading, talking, or whispering, as is often the case, this is impossible. There should be no light burning in the room unless it be a very dim one, so placed as to be out of sight of the patient. Kerosene oil should never be used in a sick room. The attendant should quietly sit or lie in the same room, or, what is usually better, in an adjoining room, so as to be within call if anything is wanted. In extreme cases, the attendant can frequently step quietly to the bedside to see if the patient is doing well, but all noise and light should be carefully excluded. It is a common practice to waken patients occasionally for fear they will sleep too soundly. This should never be done. Sleep is one of the greatest needs of the sick, and there is no danger of their getting to much of it. All evacuations should be removed at once, and the air in the room kept pure and sweet by thorough ventilation.—*Herald of Health*

THE VIRTUE OF PERSISTENCE.

Horace Greeley had an excellent article some time ago in *Packard's Monthly*, combating the popular idea that great achievements are usually accomplished by a sort of inspiration, without labor, and illustrating the paramount importance of determination and perseverance. He says:

I know there is a small class of whom the world says, "They see to the heart of things by intuition; they are poets from impulse only; orators, statesmen, critics, sages, because nature would have it so." I beg leave to doubt that men of this stamp are a whit more abundant than white crows. I know there are enough who take pleasure and pride in surprising the public with prodigies of easy and rapid achievements—who would have us believe that they have thrown off their epic a canto per day, and can write you their quire of clever epigrams or sonnets before dinner. Now, I do not question the facility of rapid and brilliant execution, as the result of *past study and acquirement*; in fact I know of such instances; but look at Virgil's four lines per day—written that day to be read through all future time; consider how Demosthenes made himself an orator against a host of natural impediments; examine a *fac simile* of a manuscript page of Byron's poems, and mark the numerous erasures and interlineations, arguing slow composition and a puzzled brain, and note well that the man who writes a poem, a sermon, an elaborate review, an oration in a day, has been many years acquiring that facility, and you will agree with me that the vulgar supposition that some are so gifted by nature that they may achieve distinction without effort, is contradicted by a thousand facts where it seems to be sustained by one. My sometime friend, who perished miserably of *delirium tremens*, often affected to write without labor; yet I happen to know, from his intimate family connections, that he repeatedly shut himself up for months and devoted his whole energies to study. In these periods of hibernation, the sparkling effusions which he seemed to dash off *impromptu*, after his return to society, had essentially their origin.

THE TWO SEXES.

The following true and elegant paragraph is from the pen of Mrs. Sigourney: "Man might be initiated into the varieties and mysteries of needlework; taught to have patience with the feebleness of infancy; and to steal with noiseless steps around the chamber of the sick; and the woman might be instructed to contend for the palm of science; to pour forth eloquence in senates, or to wade through fields of slaughter to the throne. Yet revoltings of the soul would attend this violence of nature, this abuse of physical and intellectual energy; while the beauty of social order would be defaced and the fountain of earth's facilities broken up. We arrive, then, at the conclusion. The sexes are intended for different spheres and instructed in conformity to their respective destinies by Him who bids the oak brave the fury of the tempest, and the Alpine flower lean its cheek on the bosom of the eternal snows. But disparity does not necessarily imply inferiority; the high places of earth, with all their pomp and glory, are indeed accessible only to the

march of ambition or the grasp of power; yet those who pass with faithful and unapplauded zeal through their humble round of duty are not unnoticed by the Great Task-master's eye; and their endowments, though accounted poverty among men, may prove durable riches in the Kingdom of heaven.

CURE FOR CORNS.

The *Journal of Applied Chemistry* says:—"Soak the feet in warm water, then, with a sharp instrument, pare off as much of the corn as can be done without pain, and bind up the part effected, with a piece of linen or muslin thoroughly saturated with sperm oil, or, what is better, the oil which floats upon the surface of the pickle of herring or mackerel. After three or four days, the dressing may be removed by scraping, when the new skin will be found to be of a soft and healthy texture, and less liable to the formation of a new corn than before. We have this receipt from a source which we cannot well doubt, and publish it for the benefit of many suffering readers.

The pain occasioned by corns may be greatly alleviated by the following preparation:—Into an ounce phial ask a druggist to put two drams of muriatic acid and six drams of rose water. With this mixture wet the corns night and morning for three days. Soak the feet every evening in warm water, without soap. Put one-third of the acid into the water, and, with a little picking, the corn will be dissolved.—*Jessie Piessie.*

Poetry.

THE COURTIN'.

BY JAMES RUSSELL LOWELL.

God makes sech nights, all white and still
Fur'z you can look or listen.
Moonshine an' snow on fields an' hill,
All silence an' all glisten.

Zekle crep' up quite unbeknown,
An' pecked in thru the winder;
An' there sat Hully all alone,
'Tth no one nigh to hinder.

A fireplace filled the room's one side,
with half a cord o' wood in—
There warn't no stoves (tell comfort died)
To bake ye to a puddin'.

The wa'nut logs shot sparkles out
Towards the pootiest, bless her!
An' leetle flames danced all about
The chiny on the dresser.

Agin the chimbley crook-necks hung,
An' in amongst 'em rusted
The old queen's arm that grat'ther Young
Fetched back from Concord busted.

The very room, cos she was in,
Seemed warm from floor to cillin',
An' she looked fully as rosy agin
Ez the apples she was peelin'.

'Twas kin' o' kingdom come to look
On sech a blessed cretur;
A dogrose blüshin' to the brook
Ain't modester nor sweeter.

He was six foot o' man, A I,
Clean grit an' human natur;
None couldn't quicker pitch a ton,
Nor dror a furrer straighter.

He'd sparked it with some twenty gals,
He'd squired 'em, dauced 'em, druv 'em;
Fust this one, an' thot, by spells—
All is, he couldn't love 'em.

But long o' her his veins 'ould run
All crinkly, like curled maple;
The side she breshed felt full o' sun
Ez a south slope in Ap'ill.

She thought no v'ice hed sech a swing
Ez his'n in the choir;
My! when he made "Ole Hundred" ring
She *knowed* the Lord was nigher.

An' she blushed scarlit, right in prayer,
When her new meetin' bunnet
Felt somehow thru its crown a pair
O' blue eyes sot upon it.

That night, I tell ye, she looked *some!*
She seemed to 've got a new soul;
For she felt earlin'-sure he'd come,
Down to her very shoe-solo.

She heered a foot, and knowed it tu,
A raspin' on the scraper—
All ways to ouco her, feelin's flew,
Like sparks in burnt-up paper.

He kin' o' l'itered on the mat,
Some doubtfe o' the sekte;
His heart kep' goin' pity-pat,
But her'n went pity Zekle.

An' yit she gin her chair a jerk
Ez though she wished him furdre;
An' on her apples kep' to work,
Parin' away like murder.

"You want to see my pa, I s'pose!"
"Wa'al—no—I came dasignin'!"—
"To see my ma? She's sprinkl'n' clo'es,
Agin to morror's i'nin'."

To say why gals act so or so,
Or don't, 'ould be presumin';
Mebby to mean ye: an' say no
Comes nateral to women.

He stood a spell on one foot fust,
Then stood a spell on th' other,
An' on which one he felt the wust
He couldn't ha' told ye nuther.

Says he, "I'd better call agin'!"
Says she, "Think likely, Mister;"
Thet last word pricked him like a pin,
An'—wa'al, he up an' kist her.

When ma, bianchy upon 'em slips,
Hully sot pale ez ashes,
All kin' o' smilly roun' the lips,
An' teary roun' the lashes.

For she was jes' the quiet kind
Whose natures never vary;
Like streams that keep a summer mind
Snow hid in Jenocary.

The blood clost roun' her heart felt glued
Too tight for all expressin',
Tell mother see how matters stood,
An' gin 'em both her blessin'.

Then her red came back like the tide
Down to the Bay o' Fandy;
An' all I know is, they was cried
In meetin' come nex' Sunday.