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THE
Canadian Agriculturist.

VOL. VIII.

TORONTO, JULY, 1856.

No. 7.

MAKING BUTTER.

We have published hints and directions for making Butter so frequently, that we fear some of our readers who *know how* to make good butter, and *make* it, will accuse us of imposing on their good nature by repetitions on a subject with which they are already sufficiently familiar. But if these readers knew how small a proportion of the butter made and sold in Canada can really be called *good*,—how difficult it is in our large towns, especially in the spring of the year, to purchase butter that is fit to eat, they would admit that *butter-making* is not generally well understood, or, at all events, not carefully attended to by the majority of our farmers. On public and national grounds, this is to be regretted. The Dairy is an important branch of Canadian husbandry, and we should seek to improve and extend it with as much solicitude and zeal as any other. It is a fact not creditable to us as an agricultural community, that we do not make good butter or good cheese, nor yet enough of such as we do make to supply our own local demand. Large quantities of butter, and still larger quantities of cheese, are imported every year from the United States. Go into any of our grocery-shops and ask for good cheese, and you will be presented with that of American manufacture; ask for good tub-butter, ditto. The farmers of Upper Canada seem to have devoted their attention to the best means of exhausting their land with grain crops; they plough up their pastures; sell their best, if not *all* their calves to the butcher, and neglect their dairy as much as possible.

This system must be changed. If the shrewd forecast, the enlightened judgment of Canadian farmers will not effect it, the evil consequences it must soon entail will bring it about. We have opened up a wider field than we intended at the outset. Our object was merely to submit a few remarks upon the common, but too often badly-conducted process of butter-making. Those who do not need hints on the subject, may pass on to the next article.

The first requisite to making good butter is to have good milk. To have good milk two things are absolutely essential, good cows and good keeping. Care must be taken that cows have good food and that they do not eat things that taint the milk, as cabbage stumps, garlic, and other strong aromatic vegetables. The best food for milk in summer is good tame grass, as timothy, blue-grass, red-top or clover. The white clover is the best. Admixture of white clover with any or all of the other grasses, is doubtless preferable. Having from good cows and good keeping obtained good milk, the next essential thing is

CLEANLINESS.

It is vain to expect good butter from dirty pans, crocks, pails, churns, rooms or place. There is nothing more easily tainted than milk; and butter is next to it for this peculiar infectious quality. Any impurity, bad smell, decomposing substances about milk will harm it. It must be set in and surrounded with pure atmosphere. Where there is filth there is generally a process of decomposition going on, which throws out bad gases and a disagreeable odor. Milk absorbs these when they come in contact with it. Decaying vegetables, wood, and everything that can engender filth or mustiness or sourness must be carefully removed. To avoid sourness, all the vessels, such as pails, pans, crocks, churns, &c., should be thoroughly scalded with boiling water before used. They must be sweet, and kept sweet, to be sure of good butter. A failure here is the cause of an immense amount of bad butter. The milk-room and things must be not only tolerably clean and sweet, but absolutely so. Absolute purity is necessary.

SETTING THE MILK.

The milk should be set in broad, shallow vessels. Broad, shallow, earthen, stone or tin pans are best. The milk should never be over an inch or an inch and a half deep. The object is to have the cream rise quickly. The cream or butter is held in very small particles all through the milk. It is lighter than the milk, and if left to stand in perfect quietness will rise to the top. But it is so little higher that it rises very slowly. If the milk is deep, as in a deep crock or pail, the butter or cream from the bottom does not have time to rise to the top before the milk sours. Let any one try the experiment of setting the milk in shallow and deep vessels, and they will soon have a practical demonstration of the propriety of our recommendation. Milk should set from twenty-four to thirty-six hours, or as a general rule till it sours. It should occupy a cool place secured from flies and insects, and should be undisturbed till it is skimmed. It is necessary to have it in a cool place, in order that it shall not sour before the cream all rises. When skimmed some of the milk should be taken off with the cream, otherwise it will be too thick for churning. The cream should be kept in a cool place free from every impurity.

CHURNING.

Churning should be done as often as twice or three times a week, especially in warm weather. Many let their cream stand too long. Some churn every morning. Some churn the milk while it is fresh; but experience, we believe, has generally

decided in favor of churning the cream as often as twice a week. Some suppose that the better quality of butter is obtained by churning the cream before it sours, but nearly all good dairymen, so far as we are acquainted, let the cream sour before it is churned, but take good care that it does not get too sour. To obtain the very best article of butter it is probably best to skim the milk after it has set some twelve or eighteen hours, and use only that; letting the milk stand for a second rising. Some skim every morning, and for the best butter use only the first morning's skimming. The temperature of the cream for churning should be about 55 degrees, Fah., when it is put in. It will rise from five to ten degrees while churning, owing to the chemical changes during the process. If the temperature is much higher than this the butter will be too soft and white. If it is much lower the butter will not come readily, nor be easily gathered, nor yield so large a quantity. The cream should be churned rather slowly, but steadily, and butter should not be expected under forty or forty-five minutes. If it comes sooner than this it will not be of the best quality. The time required for churning is much modified by the temperature of the cream. But it should not be so warm as to produce butter under 35 minutes churning, nor so cold as to require over 50 minutes; 40 to 45 minutes is the best period.

CHURNS.

Be in no hurry to procure the latest "patent." Churning is a very simple process, and complicated machinery only retards it. We have used many of the new-fangled churns, and have ascertained the merits of others from those who have used them. The conclusion we have arrived at is, that the common dash or plunge churn is equal to the best. The objection to it is, that it works hard, that the "up and down" motion is fatiguing. We acknowledge this defect, the more readily from our youthful experiences on the subject. The best and cheapest remedy or "improvement" we know of, is one we saw in the dairy of the late Mr. Delafield, of Geneva, N. Y. He was one of the most intelligent agriculturists of that State, and as President of the State Ag. Society, President of the Agricultural College, chartered shortly before his death, &c. &c., had been favored with all the new churns with which Yankee ingenuity has bored the country during the last ten years. He said he had put them all aside, and returned to the old plunge churn. The only *improvement* he had found it capable of, was to attach the dash to the crank of a balance wheel, which could either be turned by hand or by a foot-treadle. Any old iron wheel, of two or three feet diameter, and 30 or 40 lbs. weight, will answer the purpose. A blacksmith can make the crank in a few minutes, and when attached to a post in the dairy, high enough to allow the churn to be operated under it, you will have as good a *patent* as any in the market. The dash must of course be jointed to a pitman, and adjusted so as to descend perpendicularly. Any person of ordinary ingenuity will be able to carry out the idea upon its mere suggestion.

WORKING THE BUTTER.

When the butter has come it should be slowly churned or paddled with the dasher till it is gathered. This done, it must be taken from the churn and thoroughly worked, or washed until it is entirely free from buttermilk. The first thing and

great thing is to clear it of all buttermilk; not a part only, but all. It may be done by working it with the hand or paddle, or washing it. It may not be the best way. If washed, very cold and pure water should be used. If worked with the hand it should be quickly done, that the warmth of the hand may not soften or melt the butter. The hands should be well cooled in cold water, and cooled often while working, by holding them in the water. It is well to work the butter twice or three times to be sure that all the buttermilk is out; once at the time it is churned, again the next day, and again the second morning.

PACKING DOWN.

When the buttermilk is all out and the butter is cold and hard, it should be well salted and solidly packed in stone jars or good wooden firkins, and covered over with clean wet linen or muslin cloth, and then covered with a layer of salt half an inch thick. To be kept it should be set in a cold, dry, clean cellar.

An experienced writer sums the whole up thus:—"The chief points besides cleanliness, in making good butter, are these: To milk at regular hours; to place the milk in shallow vessels; to have a perfectly clean cellar, with a hard brick or flagstone bottom, and with shutters and wire screen windows to admit air and exclude insects; to skim the milk the moment it coagulates or 'lobbers,' which will be in 30 or 48 hours; to churn the cream at a temperature between 60° and 65° (in hot weather 55° to 60° is better) by the thermometer; to free the butter as much as possible from the buttermilk, and then add a sixteenth part of the purest salt; to work out the remaining buttermilk in 12 hours afterward and again in 24 hours, being careful not to work it too much at a time; to pack it closely in stone jars, till nearly full, and then spread clean, white muslin cloth over the top, pack closely a layer one inch thick of fine salt upon the muslin, and finally cover the jar with a neatly fitting cover. Butter thus made will keep a year, if placed on the bottom of a cool cellar."

PRUNING EVERGREENS.—The *Horticulturist* furnishes the following observations on pruning evergreens:—

It is a question not often mooted, whether evergreens do or do not require the same cutting back as deciduous trees when removed. Our own experience indicates that a slight trimming is useful. The mode of operation on the Norway fir, for instance, is this: Cut back the limbs of last year's growth, using the dissolved shell-lac on cuts, and leaving the leader untouched. The effect is the same as that on deciduous trees, with this additional advantage: the plant throws out at least two—probably more—leading limbs, and the result is that of thickening the growth, and improving the appearance. For the sake of experiment, we carried this system to as great an extent, with a single specimen, as possible; ere many years elapsed, the limbs became so heavy with numerous branches, that they broke with their own weight. Others, cut back once in every three years, have attained rare beauty and a close habit.

ADVANTAGE OF KEEPING MANURE COVERED.—An experiment conducted by the President of an Agricultural Society, in England, shows that manure which was kept covered by 9 inches in depth with earth, so that no evaporation escaped, produced 4 bushels more of grain per acre, than the same quantity and kind of manure applied to the same extent and quality of land, but which manure had lain from the 13th January to the 4th of April, exposed to the weather.

MEETING OF THE BOARD OF AGRICULTURE.

A meeting of the Board was held, pursuant to a call of the President, in the City of Kingston, on Tuesday, June 10th. Present:—E. W. Thomson; J. B. Marks; Baron De Longueil; R. L. Denison; Sheriff Ruttan; Asa A. Burnham, and Professor Buckland.

After the minutes of the former meeting had been read and confirmed, the Secretary submitted a communication from the Secretary of the Bureau of Agriculture, stating that the four retiring members of the Board had been re-elected; viz:—E. W. Thomson, R. L. Denison, John Harland and Sheriff Ruttan. It was then resolved that, Mr. Thomson be President, and Mr. Marks, Vice-President, for the current year. Several letters were read, chiefly referring to matters connected with the Annual Exhibition; after disposing of which the Board adjourned, in order to meet the Local Committee; a nearly full attendance of which were present.

The intended site of the next show was then visited and examined. It consists of about 20 acres of the rear of the Penitentiary block, pleasantly situated on the Bath Road, upwards of a mile from the city. The land has been leased by the Government to the Agricultural Society of the County of Frontenac for a number of years, at a mere nominal rent. Subscriptions are being raised in Kingston and the United Counties, towards laying out and beautifying these grounds, and for erecting permanent building for holding agricultural and horticultural exhibitions. It is proposed to erect an ornamented building chiefly of glass, a small crystal palace in fact, for flowers and the finer sorts of artistic and useful work. The glass, which is of great strength and thickness, is shortly expected out from England. All extra expenses in consequence of erecting permanent fences, buildings, &c., will be defrayed from local funds, now in course of collection for the purpose. Much credit is due to the Kingston Committee, and the inhabitants generally, for their discriminating public spirit; and it is much to be desired that they will succeed in fully carrying out their patriotic object, and that other places, where the Provincial Show is likely to be held hereafter, will follow so truly, praiseworthy an example. The Board after approving of the plans, &c., could not but repose confidence in the judgment and efficiency of the Local Committee, who expressed their determination to find ample accommodation from their own resources, for the purposes of the Exhibition. After partaking of an excellent luncheon, provided by the Local Committee, near the grounds, during which, a most interesting convention and discussion were carried on, in reference to the forth coming exhibition, and the agricultural capabilities of the various sections of the Province, the Board adjourned to next day.

WEDNESDAY, June 11th.—The Board met at 9 o'clock, A.M. Same members present as yesterday. The Report on the Premium List was received, and with a few modifications and additions, approved, and the list they amended was ordered to be printed and circulated. It was agreed to dispense with the refreshment tickets at the show, and to present each Judge with two dollars, in lieu thereof. Entries, as last year—are to be made on printed forms, which will be furnished by all Societies in due time, which forms must be filled in and signed, and remitted to the Secretary of the Board of Agriculture in Toronto, not later than Saturday, September 6th. All entries made afterwards, except in the ladies and horticultural departments, will be subject to a charge of 5s. each. The entry books are to be positively closed

on Tuesday evening, September 23rd, after which, no entries will be received on any account whatever. It was agreed that the trial of ploughs sent in for competition, should take place on Tuesday, September 23rd, Professor Wilson, of Edinburgh, having kindly undertaken to procure the Society, a dynamometer of the most recent and improved construction. The President, Baron De Longueil, has generously offered, in addition to his handsome premium for the best labor-saving machine, to supply hay to stock at his own cost; and the owners of wharves at Kingston, have also consented, with a considerate liberality, to forego the usual landing charges for live stock and articles brought to or returned from the exhibition. Altogether, the prospect of a first rate show is of the most encouraging description, and we are convinced that nothing will be wanting in the Local Committee, or the inhabitants of the good old town of Kingston, to make it such. After another consultation with the Local Committee, and the disposal of numerous details, the Board adjourned.

G. B.

RED ROOT—ENQUIRY.

To the Editor of the Agriculturist.

Cooksville, May 28th, 1856.

SIR,—I should feel much obliged to you if you would give me some information respecting a most noxious weed that has now got into our farms in this neighborhood, and which has so overrun some of them, that it has entirely choked the wheat. It is called here the Red-Root. I first perceived it about eight years ago, when I did not know what it was. As I then had only a small patch of it, and as I seeded the field down, I forgot all about it, (although I soon found it in all my other wheat fields, and I kept it down by hard weeding,) I broke up the field that had the small patch in it after it had been in grass for five years, and I gave it a good summer fallowing, and put in wheat; and last Spring I found that I had about a quarter of an acre of Red Root as thick as it could lie on the ground, just where the small patch was. I mastered it by constant hand weeding, but I had to go over it five times. I have just been looking at my wheat, and I find that there is some of it in every field. Could you tell me the real name of the weed, and the best means of destroying it; for I find naked fallows ploughed ever so well will not do; and also where it came from; for I think it must have been brought here with some seed wheat; for I don't think there was such a weed known here ten years ago. I send you a plant of the Red Root.

ALBERT PARKER.

REMARKS.—The specimen sent by Mr. Parker is well known as the *Red-root*, or *pigeon-weed*, in the adjoining townships, and probably has extended to most parts of Upper Canada. It is nearly, if not quite as difficult to keep under as the Canada Thistle. We have not had much personal experience with it, nor do we know much of its history. We understand that farmers in the Niagara District keep it down by Spring cropping for a few years, successively. Will some of our readers who are able to shed light on the subject, do us the favor of replying to our correspondent through the next number of the *Agriculturist*?

MORE ABOUT FENCES.

To the Editor of the Agriculturist.

SIR,—On looking over the April No. of your journal I was not a little surprised to see that that part of the country is so far behind in regard to Fencing. In this part of the country there is no controversy as to which kind of fence is best. The Agricultural Society of the County of Renfrew, 1855, awarded Mr. John Fisher, of McNab, the first prize for the best fenced farm. County of Lanark, Mr. Jas. Snedden, do.

The fences that took these prizes are the straight picket. It is undoubtedly the best and the most durable and cheapest that has yet been tried in this vicinity. In this Township the plan is universally adopted. I would make mention, in particular, of James Morris, Esq., John McIntyre, Flat Rapids; James O'Connor, and many others.

Those fences are built of cedar rails or poles; the ground block is $3\frac{1}{2}$ feet long, say 9 inches thick, in which two holes are bored 10 inches apart, with a 3-inch augur. 3-inch pickets, 5 feet long, of round or split cedar, with sawed blocks to fit in between the pickets, to support the rails. The cap-piece is 15 inches long, bored to fit the pickets. It is 6 rails high, with small riders 38 feet long, so as to break joints, which makes a strong and neat fence. It is likewise the cheapest kind, as it only takes 138 rails to the acre, and the rails may be lighter than for angle fences. The pickets and block can be prepared in winter or bad weather. They can be put together and laid by until required for use, and then waggoned to any part of your fields or farm. The above kind of fence is never changed or removed by frost, and if you want to remove your fence, you can do so without taking your blocks or pickets apart.

Below is a rough sketch of the blocks, pickets, &c.

I find that I have trespassed too long on your time.

McNab, 24th May, 1856.

I remain, yours truly,

JOHN ROBERTSON.

REMARKS.—The sketch referred to hardly needs to be engraved, as our readers will understand the plan from Mr. R.'s description. We may add that the rails are shown side by side, between the pickets, and not above each other, as they are sometimes placed. We don't see what is gained by this arrangement, as it is evident that the expense of "sawed blocks" between each pair of pickets and each tier of rails, would be avoided by making the end of each rail operate as a block for the other. The greater *width* of the fence gives it some advantage as against lateral pressure from wind, &c., but still, it strikes us that unless the pickets go through into the ground 10 or 13 inches, Mr. R.'s fence would be easily overturned by a high wind.

DISEASE AMONG CATTLE.

There has been a disease among the Cattle here the two last winters, by which many lost nearly all their cattle. Some call it the Black-hoof. They first swell above the hoof and then get lame, and in cold weather freeze, and then crack all round the foot. There has been no cure as yet got for the disease here.

Could you suggest any cure through your journal?

JOHN ROBERTSON.

BUTTER ADULTERATED WITH FLINT-STONE!—Astounding as is the announcement at the heading of this paragraph, it is nevertheless true. Butter is adulterated with flint-stones! This heartless and wicked fraud is especially practised in the low kinds of butter usually sold in large manufacturing towns to the poorer and industrious population. The flint-stones are ground and then chymically manipulated, until they are reduced into a soluble substance, which is known by the denomination of "soluble silica." When this latter preparation is dissolved in water it becomes a stiff gelatinous body, somewhat resembling strong jelly. This jelly is mixed to a considerable extent with butter of low quality, to which the fresh salt and colouring matter are added. The produce of this villainous adulteration is a compound which resembles a very good-looking dairy-made butter. But it has not the firmness or bright appearance of genuine butter, and is devoid of the richness and wholesome qualities of the latter. We have seen this gross adulteration at the laboratories of the Northern Analytical College, Sheffield; and we are credibly informed that Professor Calvert, of Manchester, has detected this fraud recently and frequently. Such is one phase of the adulterating system. It is a near approach to, if not a verification of, the poor man asking for bread and having a stone given to him. If such unprincipled sophistications are not soon done away with by stringent laws and public condemnation, it will end in our better halves treating ourselves and friends with luxurious gastronomic entertainments, in which flint-stones, lime, sloe-leaves, and sand, will form the chief ingredients of the family spread; and we shall be enabled to ask our particular friends to come and take a cup of sloe-tea, with a little "toast and flint," gravel, constipation, and diarrhoea included. Surely some legislative interference might be brought to bear upon the subject; if it were only to compel the vendors to placard on their goods the real quality. We should then be edified by show cards announcing the tempting truths as "flint butter," "Turmeric Mustard," "Vitriol Vinegar," "Carrot Coffee," and "Chalk Sugar-plums."—*Doncaster Gazette*.

DEEP CULTIVATION.

In a recent number of the *Mark Lane Express*, we find the following judicious remarks on the subject of *deep* ploughing as practiced by the best farmers in England.

"When the prophet alludes to the divinely-given wisdom which leads the ploughman to "open and break the clods of his ground," he characterized the operation of tillage in terms which the light of modern science and practice has enabled us more fully to understand. We "open" the ground not only to admit the seeds or to allow the free spreading of the roots of our crops, but to let in the atmosphere, the rains, and dews which impregnate the recesses of the subsoil with fertility. We "break the clods" not merely to favour the fine rootlets of young plants, but to expose an infinitely multiplied extent of superficies in the pulverized mould to the chemical action of the gases we call "the air." And the teachings of Jethro Tull, of Deanston Smith, and of Lois-Weedon Smith; the practice of Flemish farmers and vineyard cultivators abroad, and of market-gardeners, cottagers, and trench-ploughers at home, are all commentaries and illustrations developing the significance of the Hebrew's descriptive phrases.

And have we not a corroboration of the advantage of deep and minute tillage in the natural processes which are working around us? Have not we all seen the changed texture and productive quality of a weathered subsoil; seen the sterile clay from the deep drain moulder into manageable and wholesome soil under the culture of a single wintering: reminding us of the saying of Dr. Clarke, that "the frost is God's plough, which he drives through every inch of ground," pulverating and fructifying all?

But to come to particular examples. Mr. Hoskyns has described the practice of the vine-growers in Madeira, which forms a remarkable and striking lesson for us. The vine is not a native of that island; and after growing well for a few years, the fruit begins to degenerate, and makes inferior wine. The expense of new stocks being very great, as they are usually brought from the hock-vineyards of Germany, every expedient has been tried in order to postpone the evil as long as possible; but no manuring, or pruning, or attention, is of any avail; and the only remedy is found in *deep cultivation*. "I once happened," he says, "to see the process. Nearly a score of laborers, hard at work, were standing in a long trench as deep as they were tall, stocking the earth from one side and throwing it up on the other. On inquiry, they told me they were trenching *an old vineyard* for fresh planting—trenching *nearly six feet deep!* Some months afterwards, a merchant in taking me over his wine-stores, pointed out in some casks that were being broken up a mineral incrustation about as thick as a half-crown and as brittle as glass, which he called *tartrate of lime*; adding, that it was commonly deposited by the wine, especially when new. I afterwards ascertained that potash and soda existed in the deposit. Now these minerals are very deficient in the soil of the island. Here, then, was good reason for deep trenching. The vine, to supply its mineral wants, robbed the soil so fast of what little alkali it contained, that nothing but the opening of a great depth to the action of the roots would keep up the supply for many years; for the roots of delicate plants will not travel through earth that has never *seen daylight.*"

The vegetable gardens which supply Covent Garden, and other markets of the metropolis, we all know, are not only profusely manured, but deeply tilled; and in many cases the subsoil has been dug up, in the gradual course of time, no less than *four or five feet deep*, to supply the waste of mineral matter to the soil above.

In certain parts of Flanders they have a peculiar mode of gradually deepening the staple by spade-trenching: trenches being dug between the lands when sown, and the subsoil thrown over the surface. They go about two inches deeper than the cultivator has hitherto reached; and by shifting the trenches sideways each year, at

the end of a certain number of years two inches of the entire subsoil become mixed with the upper surface, and the soil is thus deepened by that amount. The same process is then repeated a couple of inches deeper still; and after four or five courses of trenching, the land is brought to a depth of 18 or 20 inches of uniform quality.

In Jersey they use a trench plough, which follows the common plough, and by means of a shelving mould-board raises the subsoil out of the furrow and throws it on the top of the just turned furrow-slice. This is done as a regular thing once at the commencement of every rotation—that is, at the breaking up in autumn for the next year's turnip fallow.

Now let us observe in these instances that the subsoil is not brought up in large masses to defy the disintegrating powers of weather and crushing implements; nor is the whole of the cultivated staple buried underneath a great thickness of the lifted subsoil, and so placed out of reach of the young plants above; neither is the subsoil merely broken and stirred, and covered again immediately by the original staple, soon to coalesce again into its former impervious condition: nor is it simply mingled partially and imperfectly with the staple, as is the case in some descriptions of subsoil ploughing. But it is lifted bit by bit, *a little at a time*, and *exposed in a granulated state openly upon the surface*, so as to be subjected to the anchoring agencies that are above ground.

And it is by appealing to long-known and well-established practices like these, that we can readily confute the objections which have been brought against trench-ploughing, and explain the causes of failure in many cases of its trial. The secret of want of success in trenching clays and strong loams, wherever it has occurred, lies, we believe in the want of judgment exercised in performing the operation, and not in any poverty or badness inherent in the subsoil. If a man will bury his fertile and highly-conditioned staple of four inches underneath half-a-foot thickness of raw unmellowed clay—thus providing for his crops a banquet of mineral food in abundance, but food uncooked and incapable of being digested by those fastidious epicures, young plants—can he expect an adequate and quick return of profit from the expensive process? But on the self-same kind of soil he knows there are cottage gardens in plenty, which are yielding richly and profitably to the deep-working spade and fork: and one of the main points in the matter has been that the deepening was gradual. Reason tells us that what the atmospheric influences, manurings, and the growth of vegetation have, in the course of time, made of four or five inches of a mass of clay, they can in the same manner make of several inches more; and this manner is by penetrating and permeating through the avenues opened by tillage. Of course, we ought not to be too wild in our expectations, or too extravagant in our descriptions of such a transformation; so that when a practical man states that “where clay land is drained, the action of the air and water passing through it so alters the very nature of the strong yellow clays, that in a few months they will become a *deep rich loam*,” we may challenge the accuracy and appropriateness of the terms employed. At the Farmers' Club, Mr. Webster took this course; but in so doing he unfortunately went too far, and said that we might expose the strongest clays to the action of the sun and air for years “and yet they never alter.” Quite true that after centuries of cultivation our tenacious clays have not been rendered into friable loams; but is not the thin staple which has been cultivated mellowed and of freer texture than the untilled subsoil which it once resembled? And where the tillage has been adapted to accomplish the change talked of; where it has gradually deepened the upper soil opened the subsoil by deep drainage, subsoiling, and trenching—there it is just as true that the land is made more workable, as well as richer and warmer. If any man's personal observation, or the instances we have adduced, are not sufficient to convince him, let him go to Lois-Weedon, and thrust his walking-stick into Mr. Smith's fallow intervals, or witness the easy traction of his ploughs, while in the adjoining fields four horses are turning up a furrow four or five inches deep.

GEORGE HOPPER, ESQ., OF BLACK HEDLEY.

BY THE HON. ADAM FERGUSSON.

This gentleman was an excellent sample of the North of England yeomen. Possessed of a good property and in easy circumstances, full of all the energy, enterprise and bodily activity, which characterised the Borderers of old, and having to boot a spice of more honesty and civilisation, he secured the good will and friendship of all with whom he had to do.

He was likewise noted for some original or eccentric habits, always, however, tending to benevolent or harmless results.

About the time of my visit, he was running the gauntlet of his friends, for a joke got up at his expense. He had been met rather *mal a propos*, jogging along the highway with a comely Northumberland lass, seated on his crupper and encircling Mr. H. most lovingly to secure her seat, giggling and laughing in high glee, while Mr. H. was ever and anon jearing and ogling her over his shoulder. The simple truth was, that pitying the poor girl tramping through the mud, and well assured of the steady temper of his nag, he offered her a cast, which was very thankfully accepted; and from this unfortunate reconnoitre with a friend, the story got wind, and the laugh was raised against him.

Mr. Hopper's experience and skill in husbandry, especially in the department of live-stock, was universally admitted, and he took pleasure in communicating information to his friends, and to give them on all occasions, a hearty welcome at Black Hedley. I had the pleasure of making his acquaintance at Parkend, the hospitable mansion of John Kidley, Esq., in 1813-14. We took kindly to each other, and I was pressed to pay him an early visit. My residence was about twelve miles from Black Hedley, and as the country was, for the most part, open and moorish, I shouldered my gun one fine frosty morning, and shot over.

Mr. H. welcomed me most kindly, and we spent a most agreeable evening, at least, so I can say for my share of it. I found that Mr. Hopper farmed largely. He was one rather famous for his black-faced sheep. For several years, he had abandoned this breed, finding more profit in the Cheviot, or rather in what is called the Tynewater. The wool of the Tynewater sheep is decidedly finer in quality. Mr. H. considers Mr. Kidley of Parkland, and his father, to be the most extensive storemasters on Tyne and Reed waters; their clip this year must realize at least £2000. Mr. H. is an extensive jobber, and is for ever on the road. Mr. Bates of Halton, and he, frequently speculate in purchasing turnips for consumption on the ground, by sheep; choosing dry soils, such as the neighbourhood of Corby Castle, &c. In 1812-13, they purchased 3 year-old Widders, at £1 15s. per head, and sold them to butchers at £4 6s., leaving a very handsome profit.

I find Mr. H. altogether sceptical as to a real *unfailing milking breed*. He has frequently had common Teeswater cows, who gave 30 or 40 quarts of milk per day; but he never knew any of their progeny, come nearly up to that mark.

He is not sanguine in the success of our friend Bates's Cross breed. In his opinion, *if you leave thorough bred Shorthorns*, you will find no breed, pay acre for acre, so well (*ceteris paribus*) as pure Kyloss. The Earl of Strathmore is making up a very fine herd of Skye cattle at Streatham Castle; Mr. H. saw his lordship's Steward, Mr. Dobson, sell lately in Darlington Market, a lot of 3 year-old Kyloss steers to a butcher, at 30 guineas each. These were reared upon an upland farm of rough pasture, and finished off at Streatham. Mr. H. quite concurs with Mr. Bates

in considering the qualities of a good breed to be chiefly developed when put up to be fed off for the shambles. Mr. Robson, butcher in Newcastle, who kills upon an average of twelve months, one beast a day, besides sheep, calves, &c., also coincides. Robson purchases largely from Mr. Bates, and declares the Cross breed beef to be particularly delicate and rich, and that he finds his account in giving extra prices, as a certain class of customers, are willing to pay him for it, above the ordinary market rates.

THOMAS BATES, ESQ., OF KIRKLEAVINGTON.

This gentleman, of noted celebrity as a Shorthorn breeder, farmed Halton Castle, near Hexham, at the period when I formed his acquaintance, in 1813-14. It was a very great privilege to me, and I can with truth say, that his knowledge of husbandry, was only equalled by his kindly spirit, and frank communication of valuable information. My residence was within a reasonable distance of Halton, and a kind of hearty welcome, tempted me, I fear, to trespass over much upon his hospitality. Like most men, Mr. Bates had his weak points, but he enjoyed, as he well deserved, a high character for skill, integrity and zeal, in his vocation.

About the time, when my acquaintance with Mr. Bates commenced, the manufacturers of York and Lancashire were in *full blow*, and the demand for beef of superior quality, was universal. Having this in view and entertaining a belief, that it was possible to introduce a *permanent* breed of cattle, which would be superior to Shorthorns, in delicacy of fibre, without sacrificing early maturity, dairy qualities, or any of the valuable properties of that most estimable breed, Mr. B. began to cross the Kylos cow with the Shorthorn bull. It is well known that the rule laid down by Culley, Cline and other distinguished men of sciences and practical knowledge, is to use a *small male*, or at least one of a breed, inferior in bulk to a *female*. Without disputing the accuracy of this theory, Mr. B. simply declared, that he was *determined* to have Kylos blood, on one side; and that he had failed in finding a Kylos bull, possessing these points, which he considered to be desirable. He certainly effected a great deal, and was, *for a time*, quite satisfied with the results. The Grade cows proved excellent dairy stock, more especially in the article of butter. I saw one which was giving 15lb. of butter per week, but as this was ascertained from churning a portion of her milk in a bottle, I confess that it appeared to me, to be a somewhat questionable test. The great and perceptible improvement in the Grades, was in the additional depth and weight of the fore quarter.* The Kylos and Grades, are, for the most part, kept upon a moorland farm, some distance from Halton, which Mr. B. had improved by draining, pairing and burning, and laying down to pasture. Eventually, the cattle experiment failed, and was abandoned. The first cross was in general the best. *No reliance could be placed upon the progeny of Grade bulls*, and the cows, as the process advanced, step by step, reverted to pure Shorthorns. The farmers and breeders of the district, always decried them, even when they carried off many prizes, and fetched higher prices for animals of like age, but of *pure Shorthorn blood*. At every Agricultural meeting, Mr. Bates puts forward a challenge, offering to stake 100 guineas, against a like sum, *Grades against Shorthorns*, which no breeder was found to accept, (as they said) from the difficulty, or impossibility of coming to a satisfactory and a fair decision. That Kylos and Galloway blood, was employed by the Messrs. Collings, is beyond all doubt, though how applied, or in

* Mr. B., kept altogether, a very large breeding stock. He expects ninety calves this season, 1813-14, Pure and Grade.

what form and measure, I believe to be *absolutely unknown*. I am further inclined to consider it, as a mistake made by these clever men. The *alloy* may be traced, even at this day, in some of our highest bred stock, but which, it will be wise to regard, rather as a *beacon*, than as a *guide-post*.

Halton was the property of Sir Charles Loraine, and was entirely farmed by Mr. Bates; I believe upon a lease of 21 years. It contained a considerable portion of rich, and a yearly old pasture. This portion of the farm lay much upon a declivity, and was laid under water (catchwork) for a portion of the winter. It was thus made early, and afforded an early bite for stock. Mr. B. used it much in *finishing off* his stall-fed cattle, and always to good profit, enabling him to hit the critical period, when turnips were used up, and grass beef in ordinary pastures, was not ready. He always said, that this system paid him remarkably well.

In after life, Mr. B. purchased a beautiful estate in Yorkshire, where he pursued his course as a breeder of Durham, chiefly from his favourite Duchess tribe, which are probably unrivalled for all the valuable qualities of good Shorthorns, early maturity, &c., possessing, moreover, high claims as dairy stock, an important consideration often too much overlooked in high bred herds. Mr. B. was by no means rigid in his notions of breeding *in* and *in*. His rule was to regulate that by circumstances. So long as no degeneracy appeared in the produce, he felt no scruples on the score of affinity. At the time when I was in the habit of visiting his stock, he had two Shorthorn bulls in use. Ketton by Favourite, and Baron by Ketton, both of them very superior animals. Mr. B. valued Ketton at 1000 guineas, and declared that he was well worth that money to him as a breeder. I frequently saw the original Duchess, for whom, as a yearling heifer, Mr. B. paid 185 guineas, at the great Collings sale. To my unpractised eye, I confess she seemed to have been pretty well paid for; but I did not know then, as I do now, *that blood is all in all*.

Mr. Bates lived and died unmarried, keeping always a most comfortable bachelor's hall. Waste not, want not, was his rule, and his house-keeper, old Barbara, never failed in making her master's guests feel entirely *at home*.

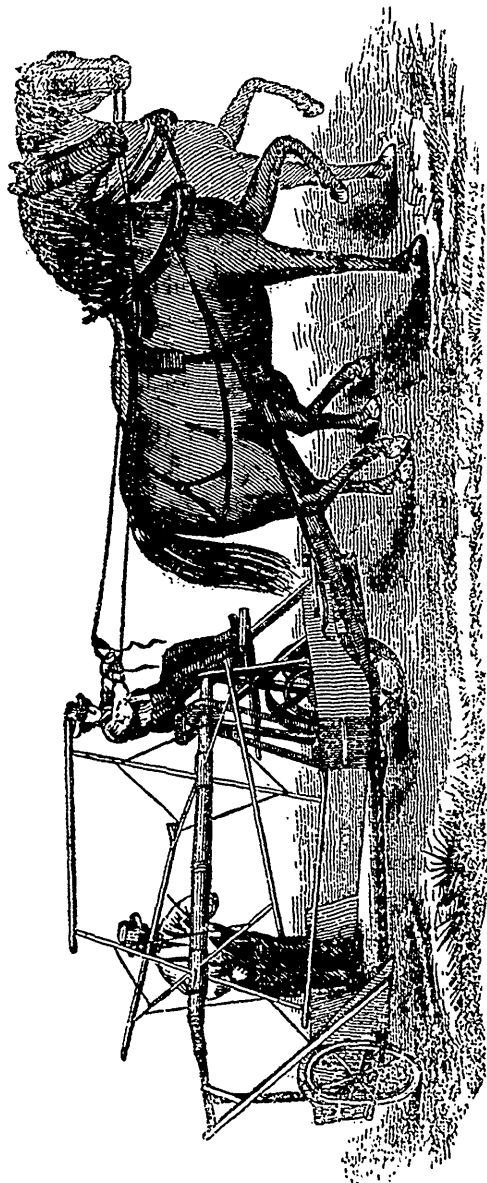
THE FARMER A MAN OF TASTE.

But the farmer of to-day should be *not only* a thoroughly educated man, and possessed of sound accomplishments; he should be pre-eminently a man of fine taste. He is an indweller of Nature's Temple, and is every where surrounded by the beautiful creations of Art Supreme. Here he may take lessons from the choicest pencilings of a perfect Master. In matters of taste, order and neatness, the American farmer need be second to none; and these qualifications should be manifested in all his operations.

When I see a farm laid out without regard to order or system, the fields taking shape as the convenience of the moment might dictate, I conclude that the owner has never studied taste or economy. When I see the fences of a farm overgrown with bushes, briars, weeds, etc., it is quite clear to me that the man who "*stays*" there has very little taste, so far as his business is concerned.

When in passing the domain of a large farmer, I find his spacious dwelling and his extensive barns and stables, side by side—door-yard and barn-yard in close juxtaposition—the latter odoriferous of its fertilizing contents—I at once see that with all his acquisitions, the proprietor has neglected to store his mind with a little *humanizing taste*—a few ideas and principles of order and propriety—which would have put his barns and stables, with all their unpleasant accompaniments, back, in rear of the dwelling, where they belong, giving the latter prominence and character, showing that the farmer and his household believe themselves superior to the beasts of the stall, and are unwilling to live virtually in their midst.

When I see a door-yard overgrown with wild grass and weeds, the fence shabby, no flowers or trees about, I know at once that there is no taste there, in doors or out.—*Bells' Agricultural Address*.



SEYMOUR AND MORGAN'S REAPER.

Above is a cut of this excellent Machine, which is generally approved by those who have used it. It was extensively introduced into Canada last season, and is now being made by several of our own manufacturers. It is Reaper a only, and when made of good materials, we can recommend it with confidence to those whose fields are tolerably level and clear of stumps and stones.

FIELD-MICE, HEDGES, &c.

To the Editor of the Agriculturist.

DEAR SIR,—I was talking the other day to a shrewd, practical old Canadian farmer—one of the very early settlers in the neighborhood—on the subject of field mice destroying the orchard trees. He suggested as a preventative, first the careful removal of straw and loose litter from the roots of young trees in the fall; substituting in lieu of the usual mulching a dressing of leached ashes, fine mould, or well-rotted manure; and as soon as the snow acquired any depth, to send a man with heavy boots on, to tramp the snow well round the tree, beating it as hard as he could with his feet. This plan would, he assured me, effectually preserve the trees from the depredations of the mice, who harbour among the loose rubbish, and work their way through the new-fallen snow. This advice, coming from an old, experienced apple-grower, and one remarkable for his general practical knowledge, I considered as valuable, and I venture to offer it, on his testimony, to the readers of the *Agriculturist*.

I have seen a mixture of tar and lime used as a paint in the old country to prevent the ravages of hares and rabbits on young apple trees, the paint being applied with a brush to a height of three or four feet from the ground.

The practice, so universally adopted, of mulching the roots of young orchard trees with stable litter may be one fruitful source of the increased destruction of fruit trees, thereby affording shelter to vermin of this kind. The substitution of ashes and earth, to be removed again by the hoe in the month of May, would, I think, be equally serviceable to the tree, and not offer the same objection, especially if it were well trodden down or beaten hard with the spade.

Even if this process be a remedy for the barking of trees from mice in orchards, I fear it will hardly be available in respect to the hedge plants, as these little animals would find a comfortable shelter among the roots in the interior of the hedge, where no person could use his foot for beating down snow or earth: even were labour so cheap as to admit of time being so employed.

MR. EDITOR,—Among the various shrubs and plants suggested for hedging purposes, no one has taken notice of the Prickly Ash, (*Xanthoxylum*). This forms a thick thorny bush, very ornamental to the eye, and I should imagine, if closely set, would make a formidable barrier against man or beast. It is found chiefly in swampy grounds, but I have seen it in gardens, on dry soil, where it grew very luxuriantly. Possibly, some of your correspondents may be able to tell you more about its properties. It is a powerful tonic, the bark being used in ague by the lumbermen. In its wild state I have never seen it injured by animals. Perhaps Mr. Leslie may know something of its capabilities. My remarks are merely suggestive.

Rice Lake Plain, June 14th.

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NECESSITY OF VENTILATION.

The temperature at which the living organisation must be continually maintained, the physical power which enables a man to execute the decisions of his will, and the intellectual force by which he explores and controls the natural world, are all dependant upon the chemical action of oxygen, and in that exact proportion in which it is supplied by perfectly pure air. Of the two conditions of animal life, the supply of nutriment, and of oxygen to decompose it, the latter is rendered in the plan of nature by far the most immediately and directly important. A person requires food but once in several hours, and may do without it for days, but if deprived of air for as many minutes he perishes. Accordingly, while the supply of food is to be had only by forethought and with active industry, and fails if these fail, on the other hand the supply of air is as boundless and omnipresent as its connection with life is intimate and indissoluble.

THE SUPPLY OF AIR.—We dwell at the bottom of an immense ocean of air, which presses upon all sides of us with the weight of tons. It accompanies us into all places; unless by special arrangements we contrive to bar it out. All that the infinitely wise Creator can do he has done to supply us with this first and highest of earthly necessities. The birds of the air, the beasts of the field, and even the savages of the forest in their open wigwams, enjoy the blessing in all its beauty and fullness. *Civilized man* alone cuts himself off from the beneficent, all invigorating atmosphere, by retiring into air-tight chambers and using the same gases over and over again, as if they were a taxed commodity and he a miser. It is because the air is so abundant and all pervading, and therefore costs no exertion to obtain it, and also because it is an invisible and ethereal medium, and therefore not fitted to strike the senses like most other forms of matter, that its relations to animal life have been so recently determined, and that so little attention is paid to a copious and healthful supply of it in the arrangement of dwellings.

EFFECTS OF BREATHING AIR ARTIFICIALLY CONDENSED.—The foregoing views of the connection established by the Creator between the atmosphere and animal life have been admirably illustrated and confirmed by experiments, in which the amount of oxygen introduced into the lungs varied from the normal quantity. They deserve to be attentively considered at this point of the subject. By means of a suitable apparatus, M. Junot subjected different persons to the effects of a considerable variation of atmosphere pressure. "When a person is placed," says he, "in condensed air, he breathes with a new facility; he feels as if the capacity of his lungs was enlarged; his respirations become deeper and less frequent; he experiences in the course of a short time an agreeable glow in the chest, as if the pulmonary cells were being dilated with an elastic spirit while the whole frame receives at each inspiration fresh vital impulsion. The functions of the brain get excited, the imagination becomes vivid, and the ideas flow with a delighted facility; digestion is rendered more active, as after gentle exercise in the air, because the secretory organs participate immediately in the increased energy of the arterial system, and there is therefore no thirst."

AN INTERESTING EXPERIMENT.—Similar effects have been produced in a novel way, and on a much more extended scale, upon workmen employed in a coalmine in France.—The seams of coal are situated under a stratum of quicksand, some twenty yards in thickness, which lay below the bed of the river Loire, and was connected with its waters; they were therefore inaccessible by all the ordinary modes of mining previously practised. So insurmountable was this obstacle regarded, that the coal bed, although known for centuries, had remained untouched. M. Trigger, an able engineer, at length grappled with the difficulty by sinking a shaft encased with sheet-iron cylinders or tubing riveted tightly together. The openings in the top to admit the miners were so contrived as to be closed perfectly air-tight, and into the cylinder air was driven, and sufficiently condensed by a steam-engine and forcing-pumps to repel the water and quicksand at the bottom, and thus permit the miners, who were immersed in the condensed air, to proceed with the excavation. The pressure employed was that of three atmospheres, that is, the air was made three times as dense as common air, "it infused such energy into the miners that they could easily execute double the work without fatigue that they could do in the open air. Upon many of them the first sensations were painful, especially upon the ears and eyes, but ere long they got quite reconciled to the bracing element. Old asthmatic men became here effective operatives. Deaf persons recovered their hearing, whilst others were sensible to the slightest whisper—an effect due to the stronger pulses of the dense air upon the membrane of the drum of the ear. Much annoyance was at first experienced from the rapid combustion of the candles, but this was obviated by substituting flax for cotton thread in the wick."—(*Supplement to Ure's Dictionary.*) The same increase of muscular energy is experienced by those who descend to considerable depths in diving-bells.

CUMBERLAND HORSE BREEDERS.

The chief buyers of carriage horses at Howden Fair, are the Messrs. Wimbush, Gray, East, &c., and the most paying colour is a brown or a "Jersey bay." This class of animal does not come there so much from the county of Durham as formerly, but is principally bred in the neighbourhood of Howden and Holderness. The breeders of Durham horses confine themselves more to Northallerton and Newcastle fairs, which are also the great marts for the Cumberland men. The latter, although they kept the first and second hunter-sire prizes against all comers, with Ravenhill and British Yeoman, and made the other horse-classes considerably less of a dead letter than they had hitherto been, at the last Royal Agricultural Show, breed almost solely for the carriage, and hence it is next to useless to bring a chesnut horse, however fine his points, into the county. When Mr. Richard Ferguson, the owner of Ravenhill (who has been rechristened "Royal Ravenhill," in token of his triumph), introduced a coaching-sire some six-and-thirty years ago, he was assured by his neighbours that the climate was too cold either for pure shorthorns or anything in horses shape, that was more than half-bred, and it was only when he sold a pair of his four-year-old Candidates for £150, which shortly afterwards reached the King's stables for, as it was said at the time, £300, that a contrary conviction dawned on them. Candidate, Bay Chilton, and Grand Turk, who were all "Northern Lights" in their time, had very little blood, but were fine sturdy specimens of a species of Durham or rather Yorkshire coaching-horse, which is now almost entirely superseded by thoroughbreds. In size they were a medium between Magog and Lord Fauconberg, and none of them were certainly up to more weight than Meteor; but perhaps the finest type of a coach-horse we ever saw was a brown one by Screveton. Mr. Charles Philips, of Cracrop, in Cumberland, is perhaps the most successful English breeder of the pure Clydesdale cart-horses; and one of his two-year-olds was so much prized when he arrived in Canada that he was sold at 4s. 8d. per lb., and realized upwards of £4000 on his weight. This is Mr. Brigg's querist over again, "How much a pound if I take the whole of him?" — From "*The Post and the Paddock*;" by the *Druid*.

NEW EXPERIMENTS IN CHURNING CREAM.

[Our readers are aware that we do not usually attach great importance to "theories," (as the term is commonly understood) until they are tested by practical trial. We insert the following for the experiments it details in connection with the suggestions of theory, and invite attention to the subject.]

Mr. E. Conklin writes to the *Country Gentleman* as follows:—

I have something amusing to tell you, to set you to thinking of a new theory of churning, and should you approve of the theory perhaps your lady readers would be gratified at the prospect of getting the long-looked-for, perfect churn. The thought occurred to me that to rupture the globules of cream perfectly and expeditiously, it should be done by a force-pump, ejecting a stream of 3-16, or 1 4 inch with great velocity, against a hard substance, or into itself. Much to the amusement of my family for trying to do that which thousands have failed doing, I procured a pint syringe and a quart of cream, and commenced squirting it into itself; when, lo, the butter developed itself shortly. I then borrowed a little force pump, and again succeeded. I then had a tin pump, 2½ inches diameter, 11 inches long, made, and gave it a good trial. I found the cream would soon break, but that it required a common churn to finish it by aggregating the butter as a gatherer. I have concluded, my plan is to provide for all churns, a breaker, thus performing much the most important labour, and greater production. My theory is, to rupture the globules by a sufficient concussion in once passing the cream through, by giving it sufficient force, ejecting the stream of cream against a hard substance, or into itself. I thus get all the butter in a much shorter time.

I propose to have got up a breaker by itself separately, or to be added to present churns; if made separately, have a single force-pump attached to a board or frame, under which place the crock of cream to be broken; pass the cream from the pump into churn.

Our present churns are good gatherers, but all churns to be perfect, must have a breaker to do the main work. The present mode of churning is a good deal like taking a stick to break a pile of walnuts; one nut protecting the others from concussion, render it tedious and imperfect. The present dashers produce insufficient concussion to expeditiously and perfectly break the globules; hence less product of butter, and constant disaffection with all churns.

CLEAN YOUR CELLARS.

By a beneficial arrangement of Providence, gasses and odours most prejudicial to human life are lighter than the air which surrounds us, and as soon as disengaged, rise immediately to the upper atmosphere, to be purified, and then returned to be used again.

The warmer the weather, the more rapidly are these gasses generated, and the more rapidly do they rise. Hence, it is, that in the most miasmatic regions of the tropics, the traveller can pursue his journey at mid-day, but to do so in the cool of the evening or morning, or midnight, would be certain death.

Hence also, the popular, but too sweeping dread of night air. To apply this scientific truth to practical life in reference to the cellars under our dwellings, is the object of this article.

In the first place, no dwelling-house ought to have a cellar. But in large cities, the value of the land makes them a seeming necessity, but it is only seeming, for during many years residence in New Orleans, we do not remember to have seen half-a-dozen cellars. But, if we must have them, let science construct them in such a manner, and common sense use them in such a way as to obviate the injuries which would otherwise result from them.

The ceilings of cellars should be well plastered, in order most effectually to prevent the ascent of dampness and noisome odours through the joints of the flooring.

The bottom of the cellar should be well paved with stone; coble stones are perhaps best; over this should be poured, to the extent of several inches in thickness, water lime cement, or such other material as is known to acquire in time almost the hardness of stone; this keeps the dampness of the earth below.

If additional dryness is desired for special purposes, in parts of the cellar, let common scantling be laid down at convenient distances, and loose boards laid across them for convenience of removal and sweeping under, when cleaning time of the year comes.

The walls should be plastered, in order to prevent the dust from settling on the innumerable projections of a common stone wall.

Shelves should be arranged in the centre of the cellar, not in the corners or against the walls; these shelves should hang from the ceiling, by wooden arms, firmly attached before plastering, thus you make all free from rats.

To those who are so fortunate as to own the houses in which they live, we would recommend the month of June as the appropriate time for following these recommendations.

Let everything, not absolutely nailed fast, be removed into the yard, and exposed to the sun, and if you please, remain for a week or two, so as to afford opportunity for a thorough drying.

Let the walls and floors be swept thoroughly, on four or five different days, and let a good coat of whitewashing be laid on.

These things should be done once a year, and one day in the week at least, except in mid-winter, every opening in the cellar, for several hours, about noon, should be thrown wide, so as to allow as complete ventilation as possible. Scientific men have forced on the common mind, by slow degrees, the importance of a daily ventilation of our sleeping apartments, so that none but the careless or the most obtuse neglect it; but few think of ventilating their cellars, although it is apparent the noisome dampness is constantly rising upwards and pervading the whole dwelling.

Emanations from cellars do not kill in a night, if they did, universal attention would be forced to their proper management, but it is certain, from the very nature of things, that unclean, damp and mouldy cellars, with their sepulchral fumes, do undermine the health of multitudes of families, and send many of their members to an untimely grave. Especially must it be so in New York, where the houses are generally constructed in such a manner that the ordinary access to the cellar for coal, wood, and vegetables, etc., is within the building, and every time the cellar door is opened, the draught from the grating in the street drives the accumulation of the preceding hours directly upwards into the halls and rooms of the dwelling, there to be breathed over and over again, by every member of the household, thus poisoning the very springs of life, and polluting the whole blood.

With these views we earnestly advise our city readers, as a life-saving thought, in the selection of a dwelling for the ensuing year, to give ten per cent. more for a home which has a model cellar; you will more than save it in the doctor's bills, in all probability, to say nothing of taking pills, and drops, and bitters, and gin, from one month's end to another.—*Hall's Journal of Health.*

CANADIAN AGRICULTURAL EXHIBITION.—The Lower Province holds its exhibition at Three Rivers, on the 16th of September; and the Upper Province at Kingston on the 23d. The New York is on the 30th of September, at Watertown, thus affording an opportunity for breeders and implement makers, in this State and in the Canadas to exhibit at all of these exhibitions, of which many will doubtless avail themselves. The Scientific Association meets in this city the third week in August, and we understand the Agricultural Associations of Canada intend to extend invitations to the distinguished gentlemen who may be present, especially those from Europe, to attend their exhibitions; a like invitation will be extended by our Society.—*Trans. N. Y. State Soc.*

NOVEL SEED PLANTER.—By George A. Meacham, of New York City.—This is a seed planting contrivance which is attached to the heel of one's boot, and is so arranged that by the act of walking, the grain is dropped and planted in the ground. The seed is contained in a belt worn round the waist. A flexible tube conducts the seed down to the planting apparatus. Farmers may henceforth dispense with their cumbersome planting machinery. To plant their crops they will only need to slip on a pair of these magic boots, and leisurely stalk over the soil. Horses feet may be supplied with shoes of the same sort, and the animals thus become converted into four-legged, self-moving seed planters. Verily the march of improvement is onward.

THE BEST HEDGE IN THE UNITED STATES, says the *Genesee Farmer*, extends about a mile along the highway, on a plantation of three hundred acres, near Augusta, Georgia. It is the Cherokee rose, which is now in full bloom, presenting a magnificent spectacle, and filling the atmosphere with delicious perfume. No animal without wings can get over or through it. Having stood forty or fifty years, it still promises a good fence for a century to come.

EFFECTS OF CLEANLINESS.—Count Rumford, the celebrated practical philosopher, whose writings have been of greater value to mankind, than the abstruse speculations of a host of metaphysicians, thus describes the advantage of cleanliness:—

With what care and attention do the feathered race wash themselves, and put their plumage in order; and how perfectly neat, clean, and elegant do they appear. Among the beasts of the field we find that those which are the most cleanly are generally the most gay and cheerful, or are distinguished by a certain air of tranquility and contentment, and singing birds are always remarkable for the neatness of their plumage. So great is the effect of cleanliness upon man, that it extends even to his moral character. Virtue never dwelt long with filth; nor do I believe there ever was a person scrupulously attentive to cleanliness, who was a consummate villain.

MOTHER.—How sweet the reflection in after years of a mother's tender training. It were well that to a mother this duty were confided, if it were only for the delicious pleasure of musing on it after many years of struggle with the cold realities of life.—Who is there that finds no relief in recurring to the scenes of his infancy and youth, gilded with the recollection of a mother's tenderness? And how many have nobly owned that to the salutary influence then exerted they must ascribe their future success, their avoidance of evil when no eye was upon them, but when rested on the heart the warnings, the prayers, and tears of a mother.

DAUGHTERS.—There is nothing more desirable in a daughter than a intelligence joined to a gentle spirit. The mind is fashioned and furnished in the main at school. But the character is derived chiefly from home. How inestimable is the confidence of that mother in producing kind feelings in the bosoms of her children, who never permits herself to speak to them in a loud voice, and in harsh, unkind tones.

TO TAKE INK STAINS OUT OF LINEN.—There are various chemicals capable of extracting ink stains from linen, but the most simple and convenient, when the stain is comparatively fresh, is the juice of lemons, applied to the spots, then washed out with warm water. Some use common salt with lemon juice, but this is of no use unless the salt is decomposed by the citric acid of the lemon uniting with the soda of the salt, thereby setting its chlorine free, which is a most powerful bleaching agent.

Lemon juice was long used (and is by some yet) by straw hat bleachers, for removing iron stains from leghorn hats, but oxalic acid has nearly superseded it. The latter is much superior, but is dangerous to keep in families where there are children, as it is a poison. Muriatic acid (old spirit of salt) is a more powerful extractor than either citric or oxalic acids, but it is unsafe in the hands of others than experts.

RESTORING FRUIT TREES DESTROYED BY MICE.

It is not as extensively known, as it ought to be, that young fruit trees can be restored to full life and vigor after the bark has been stripped off all around their stock by mice. Last winter being unusually long, and severely cold weather, and the ground covered with snow for several months, it was evident, as soon as the snow had disappeared, that these little pests had made sad destruction among the shrubbery and young fruit trees generally.

In a little orchard of thirty trees which I had planted, of the best selected fruit, and had cultivated and trained with much care for six years, until they were beginning to bear, I discovered in the spring that the bark was completely stripped off nine trees, all around the stocks close to the ground, varying in width from three to six inches. I at once banked the earth around them, so as to protect the exposed wood from the weather. In the course of six weeks after, when the uninjured trees were beginning to put out their leaves, I concluded to try an experiment, and to endeavour to restore those trees that were injured. Four of them I operated on in this way: I took a straight limb of an inch diameter, from an older tree, and cut off pieces of such a length as to reach the sound bark above and below the injured part. I then split off slabs of about three-eighths of an inch thick, with the bark—being careful not to injure the bark. These I fitted nicely into the stocks of the trees—the ends of the girdled bark fitting close, so that the connection was formed, and the sap conveyed past the injured parts.

The other five trees were so badly stripped that it required strips of from six to eight inches in length to form the connections. These I treated differently. I took young sprouts of less than half an inch thick, beveled the ends and then raised the bark of the trees with a sharp instrument, and inserted the ends of the sprouts in the incision, and then applied plenty of grafting wax to the injured parts. When this was done, I again banked the earth around them, and applied plenty of water to moisten it well. In less than a week the buds were perceptibly swollen; they afterwards put out leaves, blossomed, and the young fruit bids fair to come to perfection. They are all flourishing equally well with the others, and no person could tell from their appearance they had been injured in any way.

To save the trouble of thus doctoring trees, it would be well to apply tar, or any other preparation that would be offensive to the mice, about the roots of trees at the approach of winter.

MACHINE FOR BLACKING BOOTS.—Ayckbourn, of London has invented a machine for the foregoing named purpose. It is made of a framework of wood, with concave brushes on spindles surrounding a step on which the boot is placed. A trough containing blacking is set beside each brush to supply it, but which are moved out of reach by touching a rod when sufficient blacking is put on. The brushes are made to do their work of blacking and polishing, by simply turning a crank handle, by a person while standing. He has but to place his booted foot on a step and turn a crank, and by a few whirlabouts, his boot from a muddy brown hue, will be developed into a black shining mirror.

WASHING SILVER WARE.—It seems that housekeepers who wash their silver ware with soap and water, as the common practice is, do not know what they are about. The proprietor of one of the oldest silver establishments in the city of Philadelphia, says that "housekeepers ruin their silver by washing it in soap suds; it makes it look like pewter. Never put a particle of soap about your silver; then it will retain its original lustre. When it wants polish take a piece of soft leather and whiting, and rub it hard.

If one ounce of powdered gum tragacanth, in the white of six eggs, well-beaten, is applied to a window, it will prevent the rays of the sun from getting in.

CHEAP CAKE.—One cup of sugar, one of buttermilk, two ounces of butter, one teaspoonful of saleratus, one essence of lemon; stir in flour till quite stiff; beat the mixture well before baking.

WHITE CAKE.—One and a half cups of sugar, one of milk, two of flour, four tablespoonfuls of butter, one teaspoonful of cream tartar, one-half do. of soda; the whites of three eggs.

COOKIES.—One cup of butter, two of sugar, two eggs, one teaspoon of saleratus dissolved in two tablepoons of milk.

PRUNING AND CARE OF FRUIT TREES.

The proper season for pruning fruit trees is still a disputed question. Some of high authority, contend it should be done in mid-winter, or at any time when vegetation is not in progress. Others claim that the only proper season is when the sap begins to flow freely in the spring, and before the buds have become fully developed. A third class, among whom we must rank ourselves insist that should be done after that period, when the excessive flow of thin and watery sap has subsided, and the leaves have fully matured, which happens in this latitude, from the 20th of June to 15th of July. For this last opinion, there are two important advantages: 1st. There are no obtrusive young shoots pushing themselves forward where the branches are lopped off, as at other times: and 2d, the wounds made in pruning are immediately covered with a thick gummy sap, which, by effectually shutting up the pores of the wounded limb, secure a rapid healing of the part, and a re-covering by the extension of the bark from every side till it meets and is effectually joined in the centre. These reasons are conclusive with us, and we think should be so with our readers, until they show some better for the contrary practice.

The cause assigned, for the effectual protection and speedy recovery of the maimed part, by some, who have supposed they were speaking philosophically on the subject, is altogether a mistaken one. They assume two distinct periods during the existence of the summer foliage, one the ascent, or upward flow of the sap; the other its downward course, or descent to the roots. Let us correct this misapprehension here. The sap *circulates* throughout the entire length and breadth of the tree, from the minutest spongioles of the root, invisible to the naked eye, up to the farthest point of the topmost leaflet; just as the blood courses through the animal system. In the tree, the leaves are the lungs, the principal respiratory organs that change the character of the fluid, giving out oxygen and inhaling carbon from the atmosphere; though the bark of the fresh shoots performs this office to no inconsiderable extent, and at all times, at every period of the tree's life, there is an intimate and vital connection of the bark with the surrounding air, perspiring its sap and imbibing a portion of the atmosphere; an operation, analogous to the functions of the skin in the animal system. This constant circulation of the sap is a law so irrevocably fixed upon the living tree, that even in mid-winter, when not absolutely arrested by congelation, it still circulates; changes are still in progress within the trunk and branches, and the air from without is constantly affecting some alteration in the condition of the vital fluid. *Life* still manifests itself, and like every other living thing endowed with this inscrutable principle by its Maker, it is incessantly occupied in the exercise of its peculiar functions. But though the sap is constantly *descending* as well as ascending, it descends in a very much diminished quantity, owing to the escape of moisture through the leaves and branches. The *exchange* of oxygen for carbon is equal in *quantity*. but owing to the evaporation, the downward current is not only less but different in quality, is of a thicker and more viscid consistence, and the volume is rendered still less in every successive advance it makes towards the roots, as it is constantly appropriated between the inner bark and the alburnum or outward wood, for the future growth of the tree.

Notwithstanding the much more favorable condition for healing, when trees are pruned at the proper season, it is well, especially when large limbs have been cut off, to apply a saive or dressing to the wound. We give for this purpose the following composition: $\frac{1}{2}$ lb. tallow, 2 lbs. tar, and 1 oz. saltpetre, thoroughly mixed while warm; or equal parts of clay and fresh cow dung with strong fresh ashes added to the mixture; or tar and brick dust.

Light American plows have superseded the heavy Scotch plows in Malta. They were introduced recently by the Governor, Sir Wm. Reid, formerly of Bermuda.

LOAF CAKE.—One pint of bread sponge, one cup of sugar, one of butter, three eggs, one tablespoon of saleratus; spice to the taste. Mix thoroughly, but not very stiff, and bake when light. It is much improved by adding raisins.

TO MAKE FRUIT PIES.—No under crust should be made to apple or any fruit pie. It is always heavy and not fit to eat. Place a narrow rim of paste around the edge of the plate, and fill with the fruit either raw or stewed, and cover it. The juices will be retained much better, and it will save a sight of butter and flour, which is no trifling consideration in these days, and what is of more consequence, save *dyspepsia*, which costs more. After cutting, they are taken out with a spoon.

GOURDS AND PUMPKINS (CUCURBITA, OF MANY SPECIES AND VARIETIES).

Pumpkin-pie is a favourite with many of our peasantry ; but its real merit, like that of stone or flint soup, lies in the ingredients that are added to it. Vegetable marrow (*Courcourzelle* a *la moelle* of the French) is the most relished of its class as an esculent in England, and that only in its green or half-grown state. In vain will Mr. Cuthill recommend it ripe ; people's palates are even harder to convert than their hearts and minds. "After two years' trial," he says, "of ripe vegetable marrow as food, having used it with all sorts of meat, I can confidently recommend it as a first-rate winter vegetable. Many object to eat it in a ripe state, and it may be many years before it receives universal acceptance as a winter vegetable ; but in this it only shares the fate of many other things now common on our dinner-tables. The potato passed through the same ordeal ; many a weary day did this valuable tuber struggle for a place. When ripe, vegetable marrows must be stored in a dry place, from which frost is excluded. The under-ripened ones should be used first. In boiling ripe marrows, cut them up into pieces of four or five inches in length ; take out the pith and seeds, but do not remove the skin before boiling. Then boil in plenty of water with a little salt. After three quarters of an hour's sharp boiling (this depends upon its ripeness), let the pulp be scraped out into a dish, and press out all the water that it has imbibed during the process of boiling. Add pepper and salt, and mash as with turnips ; and no one who has not tried it can have any idea what a fine winter dish it makes. To captains going long voyages it would prove most valuable. Vegetable marrow in its young state, makes famous pickle. Cut it into two or three inches in length, as cucumbers are served." In Italy, young marrows and other immature gourds, are split or sliced, and fried with the skin on, when about three or four inches in length. The skin thus becomes crisp, and the flesh really acquires a marrow-like consistency. Throughout the same part of Europe, gourd-seeds are used in cakes and confectionary, as we should almonds. At Naples, the *porraeteau* gourd, or Naples gourd, a large cylindrical fruit, more than half a yard long, is simply cut in halves, baked in an oven, and then eaten cold in slices.

But, with the exception of the vegetable marrow, pumpkins and gourds may be regarded in England as plants rather of ornament than of use. They require an inconvenient extent of space ; but their luxuriant vines, their bold foliage, and their noble-looking fruit, afford powerful elements of decoration in the hands of those who know how to use them. The *potiron jaune*, or mammoth gourd, attains an enormous size. (If monsters are wanted, only one fruit should be allowed to each plant). The writer had one presented to him which filled a donkey-cart. The orange gourd, both smooth and warty, make pleasing chimney ornaments ; as also does the pear-fruited gourd, with its shining green and yellow skin. The snake cucumber is an extraordinary plant, producing green vegetable serpents from three to six feet in length. The club gourd, a favourite with the Venetians, bears bludgeons a yard or more in length ; while our American relations delight to cultivate a variety of vegetable marrow called the crook-neck, which has small yellow slightly warty fruits, bent in two almost at right angles at one-third of its length. The bottle gourd actually supplies drinking vessels. The Turk's cap is a faithful imitation of a turban, besides being one of the best to eat.

Gourds are safest sown, each seed in a separate small pot, in a frame or hotbed, some time in March. The plants must be gradually hardened by giving them air as often as general weather permits. At the beginning of June, they may be turned out with the balls entire, and protected by a hand light, or oil-paper cap, till the summer heats cause them to luxuriate in rampant growth. Windy exposures are most unsuitable, on account of the breadth and tenderness of the leaves. Abundant supplies of tepid water may be given. Some gardeners throw earth over the principal stems after they have grown to any considerable length. Roots shoot forth at the joints so buried, and the fruit derives benefit from the additional nourishment. When gourds are made to climb over walls and arbours, the same object may be attained by passing the leading shoots through a concealed pot of rich earth.—*Irish Farmer's Gazette*.

STEWED CELERY.—The Horticulturist recommends highly stewed celery. Cut the blanched or white portion of the celery stalks in pieces about an inch in length, and put them in a saucepan over the fire, with milk and water, in equal proportions, barely sufficient to cover them ; add a little salt and let them stew gently, until perfectly tender. Then take out the celery, add a piece of butter to the liquor it was boiled in, thicken it slightly with flour, pour it over the celery, and serve it up.

ELECTRICITY THE CAUSE OF WATERSPOUTS.—A NEW THEORY.

Two violent currents of air meeting at an angle cause a vortex, and form a hollow vertical whirling tube, sucking up within its folds heavy objects, and carrying them, sometimes, to a great height. On a minor scale, these may be observed on a dry, windy day, in the shape of dust-whirls, on any public road. Heretofore, waterspouts have been attributed to such a cause—two intense angular currents of air meeting, and forming a huge vortex on the face of the ocean, lifting up the waters, as it were, by a huge hollow screw of wind, thus forming the waterspout.

Dr. M. F. Bonzono, of the U. S. Mint, New Orleans, goes deeper into the subject, and presents the following new theory of the cause of waterspouts, and he backs it up with good arguments:—

“From the conductor of an electrical machine suspended by a wire, or chain, a small metallic ball, (one of wood covered with tin foil,) and under the ball place a rather wide metallic basin, containing some oil of turpentine, at the distance of about three-quarters of an inch. If the handle of the machine be now turned slowly, the liquid of the basin will begin to move in different directions, and form whirlpools. As the electricity on the conductor accumulates, the troubled liquid will elevate itself in the centre, and, at last, become attached to the ball. Draw off the electricity from the conductor to let the liquid resume its position: a portion of the turpentine remains attached to the ball. Turn the handle again very slowly, and observe the few drops adhering to the ball assume a conical shape, with the apex downwards, while the liquid under assumes also a conical shape, the apex upwards, until both meet. As the liquid does not accumulate on the ball, there must necessarily be as great a current downwards as upwards, giving the column of liquid a rapid circular motion, which continues until the electricity from the conductor is nearly all discharged, silently, or until it is discharged by a spark descending into the liquid. The same phenomena takes place with oil or water. Using the latter liquid, the ball must be brought much nearer, or a greater quantity of electricity is necessary to raise it.

Those who have had occasion to observe the sublime phenomenon of a waterspout will at once perceive, in this experiment, a faithful miniature representation of the gradual formation, progress, and breaking up of that grand phenomenon.

If, in this experiment, we let the ball swing to and fro, the little waterspout will travel over its miniature sea, carrying its whirlpools along with it. When it breaks up, a portion of the liquid, and with it anything it may contain, remains attached to the ball.—The fish, seeds, leaves, &c., that have fallen to the earth in rain squalls, may have owed their elevation in the clouds to the same cause that attaches a few drops of the liquid, with its particles of impurities, to the ball.

It is well known that waterspouts generally form on hot summer days in southern climates, and in so-called dead calms. They never form on windy days, nor in rainy weather. If, in our experiment, we blow upon the surface of the liquid, the discharge of electricity from the ball will be so much facilitated as to prevent the elevation of the liquid entirely, or, at least, to retard it very much. By holding a pointed conductor near the liquid, the elevation of it is entirely prevented. It seems not a forced deduction that lightning rods, and not the firing of cannon, are the proper safeguards against the formation and disastrous effects of waterspouts. When we contemplate the effects of electrical attraction on liquids, our attention is naturally drawn to its effects with regard to gases, and especially atmospheric air. The non-conducting air will, like other fluids, be attracted, electrified and repelled, to seek its dissimilar electricity, giving rise to currents and counter-currents, and at the electrical machine to the phenomenon known as the electrical wind, whilst by the operation of the grand electrical machine of the clouds, it produces those fearful and destructive currents known as whirlwinds and tornadoes.

The table lands of Mexico are never wetted by rain, and but very sparingly by dew. It is in these elevated and dry regions that whirlwinds are most frequent. Waterspouts and whirlwinds seem to be the lightning rods that nature constructs to afford to the electricity of the clouds a passage to the earth”

The wear and tear of English railroads is great; it takes 20,000 tons of iron every year to keep the tracks in repair, and 26,000,000 sleepers, to furnish which requires 3,000,000 trees, covering a space of 50,000 acres.

BONES,

When ground to dust, form a valuable manure, as they supply the phosphate and carbonate of lime essential for our cereal plants. 400 pounds of bone will furnish acid to eight acres, or 50 pounds to an acre.

A bushel of bone dust will weigh about 54 pounds.

In Great Britain they apply as much as 20 per cent. per acre to their turnip lands.

As a top dressing to pastures, 200 pounds per acre are sufficient.

Bones should be collected on every farm, and may be dissolved readily and converted into manure thus: Make a basin of ashes in any convenient place, into which put the bones: then to six quarts of sulphuric acid (vitriol) add six quarts of water. Sprinkle this mixture over the bones, which will soon become soft; cover them with the ashes, and spade them well together in one uniform mass.

MR. J. B. LAWES AND AGRICULTURAL CHEMISTRY.

In an official report in regard to agricultural products, &c., at the Universal Exhibition in Paris, Mr. J. E. Denison, M.P. and Vice President of the International Jury, uses the following just and discriminating language in regard to one who has rendered most valuable services to the cause of agricultural improvement: "In speaking," says Mr. D., "of the progress of agricultural chemistry, the name of Mr. Lawes must be placed by English farmers, in the first place of honor. Without entering on the high controversy between Baron Liebig and Mr. Lawes, lately revived with increased animation, the English farmers have wisely accepted the teaching of Mr. Lawes, based on experiments, in the care and accuracy of which full reliance may be placed, and the results of which are open to the view of all. They have learned that the approved artificial (concentrated) manures are not mere stimulants, but agents of fertility, which, when properly applied, may be depended upon with certainty to produce a crop. The principles on which the growth of corn (grain) depends, are better understood. The repetition of corn (grain) crops on the same soil can no longer be considered as necessarily faulty in principle, and to be unconditionally condemned. It is rather a question of expediency, to be decided by the costs of manure and of produce. These lessons the English farmers have learnt from Mr. Lawes. They have accepted them with becoming gratitude. They are practising them with increasing confidence, day by day, to their great and proved advantage."

Mention is also made of a series of experiments by Mr. Lawes, on the laws concerned in the feeding and fattening of animals, and in regard to these experiments Mr. Denison, with due candor and appreciation, remarks as follows:—"The number of animals experimented upon, the intelligence and care brought to bear upon every detail, and the very considerable expenditure which has evidently accompanied them, place these investigations far in advance of any of a similar kind that have been undertaken elsewhere. Although the results are of a practical character, the experiments of Mr. Lawes must not be classed with the very numerous trials on the feeding of animals, that are to be found dispersed through agricultural publications, and which are *merely* practical, being undertaken without reference to *general principles*." The results of Mr. Lawes' inquiries are too numerous to be stated here; but they seem to point out that a just balance of the different constituents of food is of more importance than a predominance of any one; that neither the albuminous nor the farinaceous elements have an exclusive value; and that those vegetable substances which contain the most nitrogenous matter are not necessarily the most adapted to produce growth of muscle, as is generally thought. Moreover, according to Mr. Lawes the valuation of foods by the amount of nitrogen contained in them is attended with much fallacy. These labors of Mr. Lawes certainly entitle him to gratitude and honor.

TO MAKE PURE WINE OF APPLES.—Take pure cider made from sound ripe apples as it runs from the press. Put 60 pounds of common brown sugar into 15 gallons of the cider, and let it dissolve; then put the mixture into a clean barrel, and fill the barrel up to within two gallons of being full with clean cider; put the cask in a cool place, leaving the bung out for forty-eight hours; then put in the bung, with a small vent, until fermentation wholly ceases, and bung up tight, and in one year the wine will be fit for use. This wine requires no racking, the longer it stands upon the lees the better.

MANURING ORCHARDS.

When orchards bear profusely, or the soil through which their roots extend, yields crops which are removed from the ground, the trees ought to be supplied with an ample dressing of manure, as often, at least, as once in four or five years. We think, however, a better way is to allow the orchard to take its place in a rotation. Unlike many others, we would not object to occupying the ground with any particular species of vegetation, but, let it be potatoes, corn, wheat, or oats, as the soil or the judgment of the owner may dictate. But we do insist that where an exhausting crop has been taken, ample compensation in manures should be made, for the exhaustion thus occasioned.

It is better, however, as a general rule, that orchards be plowed only in their younger days, before their tops become much developed; then put the ground in the highest condition of fertility, and lay it down to grass, and invite the extremities of the outspreading, pendent branches to fall as low as the ground, if they should prefer. This greatly facilitates and economizes harvesting when fruit is hand picked, as all valuable fruit should be, and the grass may be equally well secured under such trees, as when the branches are more elevated. We admire a luxuriant orchard, with its broad, umbrella top sweeping the ground when loaded with rich, blushing fruit, and no fields can be better occupied than with such a harvest, if the varieties are well chosen, and the trees have received the proper care.

If the orchard is in a meadow, and the grass and apples are annually removed, the leaves will of course follow them, as soon as the autumnal blasts or wintry winds sweep over the smooth surface, and thus is the ground robbed of all the vegetable matter to which it has given life through the season. Were the orchard well protected as the forest, by its numerous low swales, fallen branches, or upturned trunks and roots, and the innumerable standing trees, the decaying leaves and branches, and fallen trunks would restore to the soil all it had abstracted; but in the absence of these its natural manures it must receive others or starve.

Ashes are one of the best applications for an orchard; so, also, is swamp muck, or a compost of barn yard manure; charcoal is excellent, as is also lime, and occasionally bone dust, plaster, and salt, each of which is appropriately applied around the roots. Scraping the trunks when they become unthrifty, mossy, or hide bound, and washing with strong soap suds or wood ashes ley, and then give a strong coat of whitewash, are attended, with the best effects. These act both as manure and destroy insects and worms.

TO PREVENT COWS FROM KICKING.—MR. EDITOR—One of the trials or vexations that dairymen have to be subject to, is kicking cows. From the removal of calves from their mothers, chaped teats, and bad dispositions, it may be safe to say that no dairyman gets through the milking season without encountering this annoyance. Any method therefore that will save the poor cows the cruel knockings, kickings, and hard names, that they frequently on such occasions, or even the more moderate system of a "single blow, with time for reflection," as recommended in the "*Cultivator*," a few years ago, is at least worthy of trial.

Cattle are, in some respects, like some human beings: they will do more to gratify a bad disposition, than to comply with wholesome discipline; hence it will be found very difficult to find a remedy that will apply equally well in all cases. The following method will perhaps approach as near perfection in that respect as any that can well be hit upon. It has at least humanity to recommend it. Cause the cow to stand upon *three legs* during the operation of milking. This may be done by simply noosing a small cord around the fore foot, and bringing it up to the body, and wrapping the cord twice around the leg above the upper joint, and tucking the end under, or which will do about equally well, fasten the chain or tie rope to the manger or stanchion about two feet from the floor, and then hang the fore leg across that.

The next best method perhaps is the old English "cow tye," which is nothing more than a soft rope about 2 inches long, with a noose at one end and a wooden tie on the other. Wrap this around the slender part of the hind legs and cross it once or twice between, so as to make it lap tight, and it will generally, in a short time, make a cure.—*Country Gentleman*.

ENEMIES OF THE FARMER.

Geese in the grass or cabbage.

Turkeys in the grain.

Poultry at seeding time.

Hawks among poultry.

Robins in fruit season.

Orioles.

Cedar-birds.

Meadow-mouse, to trees under snow.

Black Gum on cherry trees.

The Slug on fruit trees, especially the cherry.

Curculio. Jar the trees; the insects will fall on any article prepared to receive them; then crush them.

Peach Worm; attacks the young tender bark at the foot of the tree. Thrust in a probe and destroy the worm; boiling water kills it.

Borer, in the apple and quince tree: kill by a wire.

Wire Worm is annoyed by plaster and lime; but worm is disturbed by salt.

Turnip-Fly; steep the seed in train oil.

Hessian Fly.

Wheat Fly.

DISTRIBUTION OF PLANTS.—It would be an instructive as well as interesting occupation, to trace in detail the effect of this and other climatic condition upon the several plants which occur in particular regions or countries; but, after having exhausted all our ingenuity in referring their range and distribution to the influence of one or more of such causes, much, it will be apprehended, will remain unaccounted for, and an ample margin left for further speculation. It is difficult, for instance, by any such considerations to explain why all the Heaths, excepting five or six European species, come from the Cape; whilst the Epacris, a nearly allied family, are confined to Australia; why the Orange tribe is derived exclusively from China or India; why the whole of one particular division of syngenesious plants—those which are called bilabiate—proceed from South America; why so large a proportion of the Passion-flowers are natives of the New World and nearly all the Roses of the Old. The exceptions, indeed, which occur to the generality of these observations, do but enhance our perplexity. Had the whole of one family been circumscribed within certain geographical limits, it might have been surmised that there was some yet undiscovered condition in plants of similar structure indigenous in continents so disconnected from the one which harbours the greater number of species: it becomes difficult to believe that climate can have anything to do with the matter.—*Popular Geography of Plants.*

COMMON SOAP.—To make excellent soap for common use as you must have good ashes, and put them in hoppers or barrels, on a thick layer of straw, adding a half bushel of lime to a common sized hopper; wet the ashes for several days to let them rot; then run it through, and it will be strong; put it in your kettles and boil it, and fill it up for two or three days, or till you can skim up thick potash, that looks like dirty salt, then take out one-fourth of the lye and potash, and set it aside. Now get your grease, and put in the the coarsest skins of bacon, bones, &c., you have, and the lye will soon eat them up. If clear grease rises on the top, lade it off till it eats up all the bones, &c.; then, if there are any left, take a large fork and pick them out, and throw them in the other kettle of potash; then add the pure grease you dipped off, to make the soap so mild that it will not quite take the skin off your tongue; try and see if it lathers well, then stir it in an hour, and make the other kettleful in the same way, and it will be hard, so you can cut it out when cool. If you now wish to refine some, put in a pailful of brine in a clean kettle, and dissolve ten pounds or so in it, stirring it till it boils; then let it cool in the kettle, and cut it out and dry.—*Ohio Farmer.*

ROOT CROPS—TURNIPS.

As the period for turnip sowing is now at hand, we subjoin a few sensible observations on the subject, which we find in the *Rural New Yorker* of 3rd May:—

There are many varieties of turnips cultivated by our agriculturists, of which, two species, the Swedish or ruta-baga and English or flat, receive the most attention. Of their utility as provender for stock, it is not our purpose to speak, but rather to give a few practical hints relative to culture &c.

In the selection of seed for this crop, certain questions arise which should have the careful consideration of the farmer. Which variety will give the largest yield, and at the same time furnish the greatest proportion of nutriment for the amount of soil under cultivation? Which, for the uses intended, will be most economical?

The Swedish turnip is the most valuable to the stock raiser for late feeding, and has this great advantage over all others—the easiness with which it can be preserved. In a rotation of crops, the best time to sow would be after wheat or corn—in a new soil or newly turned pasture the largest yield might be obtained.—The Swede is a rank feeder and delights in a rich, deep soil. To attain perfection, the land must be in this condition. If the ground be heavy, ridge slightly where sown, and deposit the seed in drills about two feet apart. Thin successively, as may be deemed requisite, and let the space between each be from six to eight inches. Should vacancies occur, transplant and fill up during damp weather. The seed should be sown early, say from middle of May to same period in June, as in case of failure there would be time to “try again.” Many farmers sow as late as the first of August—between rows of corn—but the roots do not mature, and as a consequence are small. They will answer, however, for early feeding, and should any be too diminutive to store, turn in the sheep, so that nothing may be lost. Preparations for soaking the seed are abundant, where there is a desire to force germination, among which urine, soot water and liquid guano are recommended.

The English turnip is much esteemed as a table vegetable. The period for sowing is about one month later than for the Swede. When raised as a field crop, from two to three pounds of seed is requisite to the acre. The ground should be freshly broken and harrowed immediately before sowing. Put in the seed when the ground and atmosphere are damp, as moisture promotes germination, and places the young plants early beyond the reach of insect depredators. A top-dressing of ashes and plaster will enhance the prospects for a good crop. When they make appearance the hoe or cultivator should be used freely, and the ground kept loose and free from weeds.

Where this root is stored for the purpose of feeding stock, the process is similar to that used for potatoes, with the exception, that they do not require to be kept from frost so exclusively as the former. Too much warmth injures them. Should they be stored in heaps in the field, it is best to leave an opening, covered lightly with straw through which the gases generated may pass off. When intended for the table, one of the best modes, is to pack in barrels with alternate layers of leaves or straw—giving the leaves the preference provided you can obtain them.

The turnip is subject to visits from numerous species of insects, and remedies almost equally countless are offered and advised. Recipes compounded of nitrates and sulphates, urine, soot water, curriers' and fish oil, diluted sulphuric acid, etc., to the end of the catalogue, are stamped with the seal of perfection—by those introducing them—and yet all fail. The *very best remedy* is to get the earth in the *right* condition for the growing plant, sow liberally and give to the crop, from seed-time to harvest, the attention it so richly deserves.

THE CROPS.—From personal observation, and from enquiry, we are glad to be able to say that the crops in this county are looking exceedingly well, especially wheat. The hay crop is very promising, the growth of which will be materially advanced by the late rains.—*Kent Advertiser*.

The London *Prototype*, in alluding to the crops, says:—“We learn from correspondence from Elgin, Huron and Middlesex, that the grain crops in those counties look exceedingly well. The hay crop in the same district, is also good, and has not suffered so much from the rain, as it has been subject to in a more easterly direction.”

CONVENIENT WRITING INK.—Dissolve half a pound of the extract of logwood in five gallons of hot water, add half an ounce of the bi-chromate of potash. Stir for a few hours, and bottle for use. The cost for five gallons of ink is about twenty-five cents.

SURFACE OF THE MOON.—The Earl of Rosse, who has recently completed the largest telescope ever made, alluded, at a late meeting in London to its effects. He said that, with respect to the moon, every object on its surface of 100 feet in height was now to be seen; and he had no doubt that, under very favourable circumstances, it would be so with objects 60 feet in height. On its surface were craters of extinct volcanoes, rocks and masses of stone almost innumerable. He had no doubt that if such a building as he was then in were upon the surface of the moon, it would be rendered distinctly visible by these instruments. But there were no signs of habitations such as ours—no vestiges of architecture remain to show that the moon is, or ever was inhabited by a race of mortals similar to ourselves. It presented no appearance which could lead to the supposition that it contained anything like the green fields and lovely verdure of this beautiful world of ours. There was no water visible—not a sea or a river, or even the measure of a reservoir for supplying town or factory—all seemed desolate.

BENEFITS TO MAN FROM THE VEGETABLE WORLD.—Plants satisfy the common necessities of man and beast. They nourish man's body in health, they restore him in sickness; they give him the clothing that covers him, the varied hues that delight his eye, and odours which refresh his senses: the timber of which his houses, his factories, and his ships, are partly or wholly constructed—all these are a few of the many benefits which the vegetable world confers upon man. Wherever we look, we see in it our great resource: even our railroads and our mines could not exist, were we not masters of forests. We would succumb to the cold of winter, food that becomes nutritious only by the aid of fire would be useless, the power of steam would not carry us from land to land and over the broad ocean, if we had no trees. The very destruction of plants is made necessary for their existence, for the wisdom and forethought of the Creator are in this also manifest, that whilst plants invest and ornament the earth, animals browse and trim them to check their luxuriance, so as to maintain the whole system of creation in order and beauty. And yet this is but the humblest purpose that plants serve on earth—the humblest because it only satisfies material requirements, however we ourselves may have refined and varnished them over.—*Stray Leaves.*

A LUXURY FOR ANIMALS.—It is related of Rev. Sidney Smith, that when on his farm, each cow and calf, and horse and pig, were in turn visited, and fed, and patted, and all seemed to welcome him; he cared for their comforts as he cared for the comforts of every living being around him. He used to say, "I am for all cheap luxuries, even for animals; now all animals have a passion for scratching their back-bones; they break down your gates and pailings to effect this. Look! there is my universal scratcher, a sharp-edged pole, resting on a high and low post, adapted to every height from a horse to a lamb. Even the Edinburgh Reviewer can take his turn. You have no idea how popular it is. I have not had a gate broken since I put it up. I have it in all my fields."

CORN STARCH.—Another large manufactory of Starch from Indian corn, is about to be established in the Scotia Valley. A company at Columbus, Ohio, it is reported, are about to put up buildings and machinery sufficient to work up six hundred bushels of corn a day. Such use of corn will do less mischief in the world than some other modes of using it, largely practised in Ohio.

RICE CAKES.—Boil rice until it is soft, and while warm make it into cakes or flat balls. Dip these balls into a beaten egg, and then roll them into Indian meal till thoroughly coated. This done, fry them in lard, which is better than butter for this purpose. Serve them with sauce, or with butter or cream and sugar.

GINGER BEER.—Two gallons of ginger beer may be made as follows: Put two gallons of cold water into a pot upon the fire; add to it two ounces of good ginger bruised, and two pounds of white or brown sugar. Let all this come to the boil, and continue boiling for half an hour. Then skim the liquor, and pour it into a jar or tub, along with one sliced lemon, and half an ounce of cream of tartar. When nearly cold, put in a tea-cupful of yeast to cause the liquor to work. The beer is now made; and after it has worked for two days, strain it and bottle it for use. Tie the corks down firmly.

A GOOD WAY OF COOKING ONIONS.—It is a good plan to boil onions in milk and water; it diminishes the strong taste of that vegetable. It is an excellent way of serving up onions, to chop them after they are boiled, and put them in a stew pan, with a little milk, butter, salt and pepper, and let them stew about fifteen minutes. This gives them a fine flavor, and they can be served up very hot.

THE PREMIUMS.—In accordance with our previous announcement, we publish below the names of the agents entitled to receive the premiums offered for obtaining the largest number of subscribers to the *Agriculturist*. The successful competitors are as follows:—

1st. A. Law, Richmond Hill.....	\$25
2nd. A. Roy, Saugeen.....	20
3rd. F. Boate, York Township.....	15
4th. J. Atkin, Bradford.....	10
5th. T. Orchard, Innisfil, Copy of the <i>Farmer's Guide</i> .	

By a special agreement, one or two of our agents were to receive a copy of the *Guide*, &c., for a certain number of subscribers; these, of course, cannot expect prizes also.

DRAINING TOOLS.—Mr. Fleming has just received from England several complete sets of English Draining Tools, to which we would direct the attention of those who contemplate draining. They are very substantial looking implements, far superior to any got up on this side of the Atlantic. Mr. F. deserves credit for introducing these important tools, for it is doubtful whether he will be reimbursed his outlay and trouble. We trust soon to see tiles furnished at a reasonable price, and then there will be no excuse for neglecting an improvement which lies at the foundation of good farming.

COL. S. G. MORRIS' GREAT SALE.—A very full account of Col. Morris' sale of thoroughbred cattle, sheep, and swine, appears in the *New York Tribune*, of 25th and 26th ult. The prices upon the whole must have been satisfactory, though some of his Durhams of unblemished pedigree, and from the most celebrated herds in England, sold at a very low price. Romeo, six years old, bred by the Marquis of Exeter, and imported in 1852, sold for \$600 only; but he was the first put up, and competition had not been aroused. He went to Ohio. Several Bull calves sold at prices between \$300 and \$675. We notice that Mr. Robert Gordon of Paris, C. W., was the purchaser of the "King of Algiers," a red and white bull calf, dropped last April, at \$400. He is of the best blood to be had in this country. His sire is Duke of Gloucester, (11,382,) dam, Beauty of Brawith, by Emperor, (6,973). We trust Mr. Gordon may be

successful with his royal charge. The Devons brought medium prices, ranging from \$150 to \$360 for bulls, mostly young; and from \$125 to \$340 for Devon cows. The South Down Sheep brought the longest prices, ranging from \$140 to \$400 for sheep and rams, and from \$25 to \$140 for yearling bucks and ewe lambs. Such prices must be considered high, when sheep from the same English flocks can be had in this country at much lower prices. We shall endeavour to give some particulars of this sale, the largest ever held in America, in our next number.

TORONTO MARKETS.

TORONTO, July 1.

For the past month the supply of produce has been abundant in the Toronto Market. With the exception of Wheat, prices have declined for every article. The receipts of Wheat for the month cannot fall far short of 100,000 bushels. Many farmers who had held on to their last year's crop, refusing 10s. and above, have at length been compelled to sell at a considerable reduction; but still a fair remunerating price. We are glad that many of them have not the temerity to hold it over for a longer period, as the probabilities are that a further decline will take place. By selling their Wheat now they have received a good price, and will be enabled to pay their debts, and give ease to the money market. The price for the month has ranged from 6s. 8d. to 7s. 4d., the average price of the month being about 7s. per bushel. It is selling to day at 7s. to 7s. 3d. The demand has been active for prime samples. Purchases have been made for the Liverpool market to a considerable extent, and large quantities have been brought to supply a rapidly increasing consumptive demand in the New England States. Flour, by wholesale, is difficult of quotation there being but few transactions. It is held at \$5 50, for superfine, and \$6 for extra, per barrel. Potatoes are selling at 2s. 6d. to 3s. per bushel. Oats, 2s a 2s 6d. Hay \$10 a \$17, per ton. Butter, 9d. a 11d. Eggs, 11d. a 1s., per dozen.