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THE FARMER AND MECHANIC,

Devoted to Agricultural, Horticultural, Mechanical, and Domestic Subjects.

Vol. I. TORONTO, CANADA WEST, MARCH, 1849. No. 6.

Sugar Making.

The season for manufacturing sugar is at hand, and a few practical directions may be found useful to those who intend to devote attention to the business. In consequence of the severe frosts that have prevailed this season, it will, doubtless, be favourable for the manufacture of sugar from the maple. Some suppose, that, on the score of economy, the time expended in making maple sugar might be more profitably employed in prosecuting other branches of labour on the farm. We can confident'y advise those who have a good sugar bush to pay every proper attention to it, as it will be found, upon a strict investigation of the matter, to afford as profitable a return as almost any other branch of farm labour.

In a season, tolerably favourable for the business, three pounds of sugar may be extracted from the sap produced from each tree, besides a considerable quantity of molasses and vinegar. The saccharine matter produced, suited only for the manufacture of the latter, will, in an average of years, be equal to one-sixth of the whole quantity yielded by the bush.

Two men will attend to five hundred trees, without any inconvenience, provided that proper appliances and fixtures be provided. The season, in an average of cases, does not exceed four weeks, and by using ordinary economy, in that time, two men may make 1500 lbs. of sugar and upwards, besides molasses and vinegar sufficient for a common-sized family, for a twelvemonth. A good quality of maple sugar is worth £2 per 100 lbs., which, on the above amount, without including the molasses and vinegar, would give a cost return of £30. The writer is acquainted with Canadian farmers who make a practice of tapping from one to two thousand trees annually, and from which they derive an annual income of from £50 to £100; but the usual practice is to manufacture only what would be required for domestic use, being the product from two to three hundred trees.

The most northern portions of Canada settlements will produce the greatest quantities of sugar from the maple. The forests on the south shore of Lake Huron, as well as those on numerous islands, on that extensive sheet of water, contain a very large quantity of the largest sized sugar maple; and in that region of country, the sugar season lasts one-third longer than it does on the borders of Lakes Ontario and Erie. A merchant, who trades extensively in the article of maple sugar, manufactured by the Indians, has repeatedly assured us, that if proper encouragement was given to the business, the sugar manufactured in that region, by the Indians and white population, might be made to yield an annual return of upwards of £100,000. On the great Manatoulin Island, even as unfavourable as was last year for the business, the aborigines made and sold upwards of 100,000 lbs. of sugar: a considerable proportion of which was bought by Michigan merchants, in exchange for woollen and cotton goods.

This province contains an abundance of sugar maple to supply its population with sugar for a hundred years to come; but it does not follow, from this fact, that sugar will be made in a sufficient quantity to meet that demand. To argue on such a basis as this, would accomplish no good, and besides, it would result in disappointment to those who might favour the opinion. Because the soil of Canada contains the natural elements for the production of a hundred or more times the quantity of grains and vegetables that are annually produced, it would be wrong to argue that any approach towards such an abundant yield, could be harvested from our soil. But, nevertheless, it would be fair to infer, that the average yield might be greatly increased. So it is with the production of sugar from our extensive forests of maples, with the difference in favour of the latter, arising from the fact, that, in the business of making sugar, no cultivation whatever is required, the trees being the natural

products of the soil. This, upon a close investigation, will be found to be the most favourable feature of the whole matter; and it would be well, for those whose circumstances would admit of such an arrangement, to engage in the business, upon a respectable scale, for the purpose of ascertaining the exact cost of producing a certain quantity of sugar from the maple. In an average of seasons it will be found, that the profits on making maple sugar will be equal to fifty per cent. on its value. The only correct method of determining the real value and importance of any particular agricultural product, is for the producer to note down carefully every item of cost, which should be based strictly upon the interest of invested capital, and the value of labour and board, and in the vicinity in which the experiment or operation is made. We venture the opinion, that if this excellent rule be acted upon, the manufacture of maple sugar will show, on an average of years, as large a net profit as that of any other branch of farm labour.

The single item of sugar alone, costs this colony many hundred thousand pounds annually, which has to be paid for principally in cash. If only half the quantity required for consumption be produced at home, it would be a saving of a large sum of money, which would be retained in circulation among the producing and commercial classes, and thus benefit every branch, of industry. Without farther attempting to show the advantages of manufacturing sugar from our maple forests, to supply either the whole or a part of the demand for home consumption, we shall, in as brief a manner as possible, give some plain, practical directions, which, for convenience sake, will appear under their different heads or departments:—

Tapping the Trees.—This operation is performed in a variety of ways, but the one, in every particular the least objectionable, is that of using the augur. The instrument should not be more than three-quarters of an inch bore, and the hole in the tree should not exceed three-fourths of an inch. The spiles ought to be so constructed, that they would fit the hole so completely, on the edge next to the bark of the tree, that not the slightest particle of sap would be wasted; whilst the inner point of the spile should be beveled so as to allow the sap to freely press between the spile and the edge of the bore in the tree. They should be from 12 to 20 inches in length, having a fourth of an inch hole in the centre of the point that enters the tree, through which the sap will pass to the channel gouged ont in the centre of the upper surface of the spile. It will require some pains and labour to make spiles of this kind, but when properly made, they will last many years. In using the augur, the hole should have an inclination upwards, so that the water, after the sugar season is over, will not lodge in it, and thus cause that part of the tree to decay. On most trees a three-fourths of an inch augur hole will grow up in four years, and as soon as this is the case the tree may be retapped in the same place. On large trees from two to three taps may be made leading to the same vessel, and the spiles should be made of various lengths, to be adapted for that purpose. By employing the augur and the hollow spile, the air will be completely excluded from the incission in the tree, and, besides, no sap will be lost.

Apparatus for Boiling.—When the business of sugar making is carried on upon a pretty large scale, the best apparatus for boiling down the sap that can be employed is one or more large sized potash kettles, set in an arch of stones. More sap can be evaporated in vessels of this kind than any other, unless perfectly flat-bottomed boilers be used, such as are employed in many salt works. Boilers may be made of sheets of iron, about seven feet long, two feet wide, and two feet deep, which, if set in an arch, will be found very efficient in boiling down or evaporating sap. The ends and sides may be made of well-seasoned boards, and, by a little care in the construction of the arch, the wood may be completely protected from the action of fire. A house for boiling sap is very desirable, as it will enable the business to be prosecuted both night and day, if it should be required. The most convenient method of supplying the boilers with a regular supply of sap is to place a long trough or vessel directly alongside or over them, from which a small tap,

by means of a spile, can be made to convey a steady, small stream to them, which must be regulated by the rate with which the sap is evaporated. The sap is usually stored in a large trough or puncheon; but a much better plan is to make a cement cistern, under the boiling-house, and by the use of a pump, the feeding trough may, with much expedition, be regularly supplied. The foregoing suggestions are by no means indispensable, but in many cases they might be carried out with much advantage. The great point to be observed in sugar making is *perfect cleanliness;* and, when this principle is acted upon, it matters not whether the boilers be large or small; whether cement cisterns, or a trough made from the trunk of a tree, or puncheons be used for the storing of sap; nor is it essential that the boilers should be set in an arch; but they are here mentioned so that those who may be desirous of doing a large and profitable business might, if they are disposed, adopt them.

Clarifying and Granulating Syrup.—This operation is performed in a great variety of ways. If a large business be done, the methods practiced by the clarifying establishments might, with advantage, be adopted. But as it would require some expense, and a nicety in executing the matter, that could not well be observed by inexperienced persons, having only written directions, we shall not at this time make mention of this, for fear that evil, rather than good might result from it. We speak advisedly, when we say, that with a very trifling expense, sugar fully equal to the *double* refined cane loaf sugar may be manfactured, by our farmers, from syrup extracted from the sap of the Maple. For ordinary domestic use so fine an article is not required, and a quality equal to that bought in the stores, being the product of the Indies or the Southern States, would fully satisfy most people. The usual method of making either cake or stirred sugar is not adapted to make an article that would be sought after by persons of cultivated taste; and in order that it might become an important item of commerce, for local consumption, it would be well to adopt a more enlightened system of clarifying and granulating it.

To clarify the syrup for 100 lbs. of sugar, the whites of six eggs well beaten, a quart of sweet milk, and a tablespoonful of saleratus should be used, the whole to be mixed with the syrup before it becomes scalding hot. The fire employed for sugaring off should be regulated, so as to make the syrup boil very moderately; but; before it is allowed to come to a boil, the syrup should be carefully skimmed off, and much much care should be observed in preventing it coming to a boiling heat until the whole of the scum has been removed, or, in other words, until it becomes perfectly white.

Many object to the use of maple sugar for sweetening tea, and for many pastry and culinary purposes, as it imparts a taste that is peculiar to the maple, which may probably be traced to the fact, that the wood of the maple contains a very large quantity of alkanine substance and protoxide of iron, which are extracted from the tree, and form a portion of the sap. Be this as it may, it is quite certain that this flavour may be extracted by a very simple process, which will be found neither difficult nor expensive. Instead of making the sugar in brown cakes, or stirring it while hot until it becomes perfectly fine, it should be reduced to a proper consistency for making drained sugar, and then be poured into vessels made of wood, in the shape of a cone, which will each hold about 80 or 100 lbs. of sugar. A number of holes must be bored in the bottom of those boxes, as soon as the sugar becomes thoroughly granulated, which generally will be the case within three or four days from the time it is made. To keep the entire mass, or loaf, in a moist state, it is only necessary to cover the top closely with a number of layers of a thick woollen blanket, which for a fortnight will require to be rinsed daily in clear, cold water. If it be required to make an article that, to appearance and flavour, will compare with double refined loaf sugar, to effect that purpose it will only be necessary to dissolve the sugar, and repeat the process already pointed out.

The molasses extracted from the sugar will be of an inferior quality, but for many purposes it will be found useful in a farm-house. Whether the foregoing method be practiced or not, it will be found, upon trial, to be a much better plan to make wet sugar, and afterwards drain out the molasses, than to make it into hard, or dry sugar in the first instance.

Annexed we give the process of making sugar from the cane, in which mention is made of using lime; this, as far as we are aware, has not been tried in making maple sugar, but would doubtless be of service, and would probably remove its peculiar taste: we would, therefore, suggest to our readers to make a trial, on a small scale, so that its effects would be fully tested:—

"In the manufacture of sugar from the cane, the first process consists in obtaining the juice, which is done by grinding and pressure. This is then evaporated by a gentle heat, during which a quantity of lime is added, partly for the purpose of neutralizing any free acid, and partly for the purpose of separating extractive matter which unites with the lime, and forms a scum on the surface of the liquid. The evaporation is continued until it acquires the consistency of syrup, when it is transferred into wooden coolers, where a portion concretes into a crystalline mass, and in this state forms what is called *muscovado* or *raw* sugar. It is then placed in vessels with apertures in the bottom, where the more fluid parts drain off, and from the well known sweet syrup, *molasses*.

"*Refined sugar.*—Raw sugar is refined by the following process: The sugar being dissolved in water, is mixed with the whites of eggs or the serum* of blood, and boiled. The albumen or serum is thus coagulated by the heat; and rising on the surface, brings with it such impurities as the sugar contained, which are removed by a skimmer. When the syrup is judged to be sufficiently clear, it is placed in smaller pans, and farther concentrated by boiling, and then transferred into coolers, where it is agitated with wooden oars, until it appears thick and granulated. It now becomes white, and the crystals being broken by the agitation, facilitates the draining off the colored matter which remains.

"It is next placed in conical cups of earthenware, of the well known form called *sugar loaf*. These having apertures at the bottom, a portion of molasses drains off, leaving the sugar much whiter than before. Lastly, a quantity of pipe clay is mixed with water to the consistency of cream, and poured on the loaves to the thickness of an inch. The water from this slowly percolates through the loaves, and washes all remains of the coloring matter from the sugar. The loaves are then dried by heat, and put in paper for sale.

"Refined sugar undergoes no change when exposed to the air, the dampness of raw sugar being caused by impurities.

"Sugar is decomposed by the sulphuric and nitric acids. By analysis it is resolved into the usual constituents of vegetables, oxygen, carbon, and hydrogen."

* *Serum*, the yellowish fluid surrounding the solid red mass of blood when coagulated.

AGRICULTURAL REPORTS.

On a former occasion, we published the proceedings of the Township of Guelph Agricultural Society, which embodied some excellent speeches on Agricultural topics, made at a public dinner. Farmers, unlike many other classes of society, do not have frequent opportunities of commingling together in large masses, for the purpose of concentrating their influence and talents in effecting improvements in their arts; and when they do meet at their annual festivities, it certainly appears consistent that the greatest possible amount of intellectual enjoyment and benefit should be obtained. The amount of practical information that might be brought before the public, through the Press of the country, by reporting experiments made in Agriculture, would doubtless be very great, if societies could be induced to do, in this respect, what has been done in some isolated cases.

The great national Institution of the State of New York has set a most excellent example in establishing a high order of Agricultural Literature; and it would be well if Canada would adopt similar steps in developing the latent talents of her Agricultural people. It is the business of Agricultural Societies to look well to this matter, for unless more efficient means be adopted by them, for promoting substantial improvements, the propriety of making large annual grants of public money in their behalf will certainly be brought into question.

The business of Agriculture must, in this

enlightened age, be reduced, as far as possible, to a correct practical science. The effects produced in the various departments of husbandry are capable of being traced to their legitimate cause; and this being the fact, why should so important an interest be allowed any longer to be enshrouded in mystery? It need not be the case if the most intelligent farmers, combined with the influence that Agricultural Societies are capable of bringing to bear on the matter, would do their duty to themselves and their common country. The few paltry premiums that are distributed among the members of Societies do not more than compensate for the extra expense and trouble that competitors subject themselves to, for the purpose of obtaining them; and many cautious and sensible farmers, seeing this to be the case, do not take any interest in supporting Agricultural Institutions. But how different would be their feelings if steps were taken by the officers and managers of Societies in collecting and distributing useful information on the various branches of their useful profession!

We publish the following Report, copied from the *Vermont State Agriculturist*, on breeding horses, which will serve as an excellent model for such of our Societies as are desirous of promoting improvements in Canadian Agriculture:—

BREEDING HORSES.

We extract the following from a report made at the last fair of the Windsor County Agricultural Society, by the Committee on Horses. The Report is the best paper we have seen among those yet produced by the agency of our County Societies. The *reasons* for making the awards are given in full, with excellent practical remarks on the business of breeding horses:—

Your Committee are of opinion that there is no branch of stock-raising more profitable than the rearing of the best of horses; and they consider there is no trouble in accomplishing this, provided that none but the very best stallions are bred to, and none are bred from, any but excellent horses, which, by the way, are very scarce, and hard to be obtained, and for the following reasons:—Owing to the high price good "horse flesh" will ever command, the majority of our best mares, as soon as they come to maturity, find their way into our village and city markets, and are never allowed to breed, save a few that may be returned to the country after becoming unsound in limb, or having their constitution broken down with hard usage and old age; and many that remain among the farmers are valued so highly for their labour and fine appearance that they are never permitted to breed until they are in a similar condition to those returned from our business markets. The consequence is, that nearly the whole of our horses are produced from the most ordinary mares, or unsound ones. An unsoundness of the limbs may not impair the value of a breeding mare, but if she has a weakened constitution, it must, more or less, impair the strength, speed, and endurance of the offspring, although they may have fine forms. Your Committee believe it would be far more profitable to purchase and breed from mares worth one hundred and fifty dollars, than from those whose average value, for the last ten years, in a sound state, has been no more than forty dollars, (and this, we believe, is the class of a majority of our breeding mares.) From mares of this stamp, and to good stallions, we cannot raise colts which, at four years old, would have sold, through the abovementioned time, higher than fifty dollars to seventy-five dollars; whereas, from the first class of mares, and to the same stallions, we could with equal certainty raise colts that would command double these prices, and occasionally one may command four times as much.

Another thing that has a great tendency to multiply the number of poor horses is, that farmers too often estimate the profit of raising colts by the first cost of getting them—bestowing their patronage where they can be insured with a foal for the least money, and frequently to a horse of ordinary qualities; when, by the addition of a few dollars, they might secure the services of a horse whose stock would afford them a profit similar to that spoken of with the best class of breeding mares. It should be remarked, however, that stallions are of a much higher quality than the breeding mares. Take these as a whole, there has been a great improvement in them within a few years. And although we may have only a few but what are valuable horses, yet there is a great difference between them—and even among those of a very high order. Independent of the pecuniary advantages of breeding from none but the very best of horses and sires, one may enjoy, according to the fancy of the owner, from five dollars to twenty dollars' worth of satisfaction, in producing a superior animal.

Allow your Committee to throw out a few hints in relation to breeding colts—docking, nicking, framing. Colts should always be kept in a good condition; not extravagantly fed; yet they should have something more than dry food the first two winters. The starving of colts

will not only impede their growth, but will bring on a contraction of the ribs, cords, and muscles, especially about the chests and shoulders, that will, more or less, impair their power, action, speed, and endurance, after coming to maturity.

It is the opinion of your Committee that a horse will have the most perfect strength and action with a natural tail; yet, for appearance, they would recommend a moderate docking, which should be governed by the build of the animal and the character of the tail; but we should very seldom leave a dock of less than twelve inches; and the docking should be performed when the colts are one or two years old, (one year old is preferable.) Colts may be docked at these ages with less injury to them than when nearly grown; they will have more of a bush to the tail with longer hair, and will be inclined to carry it in a more elevated position. Nicking should be looked upon as a cruel and useless practice, which undoubtedly impairs the strength and action of the horse, and may sometimes seriously injure the constitution.

Great care should be used, in breaking colts, to have them kind; and there is but little difficulty in this, provided they have proper and gentle treatment. They very seldom need but little, if any whipping. They should be learned to do their work in an easy and handsome manner, and without fretting. A horse that is trained to chafe and dance in the harness, or under the saddle, may do very well for fops and horse-jockeys, but it is not what a sensible man wants in a horse designed for service, as it is a waste of strength and action, without accomplishing any useful purpose. And in forming an opinion of a restless horse, it will be well to consider whether the apparent energy and action is *natural*, or whether it is brought about by *training*, and the *fear* of the *braid*.

All of which is respectfully submitted.

In behalf of the Committee,

EBENEZER BRIDGE, Chairman.

Hussey's Reapers.

A correspondent in the "Ohio Cultivator," in relation to these machines, says, that he had used one of them during the past harvest, and was well satisfied with its performance—having cut 50 acres of his own wheat, and 150 acres for his neighbours.

He also states that he has made a slight improvement in the machine, to obviate a difficulty which occurred by the falling of considerable wheat, after it was cut, over the edge next to the standing grain. The upright edge on that side was lengthened and made higher; and this improvement caused all the grain which was cut to fall upon the platform.

This machine was also used by the same correspondent, for the purpose of cutting up corn. To adapt it to cutting corn it only requires the platform to be made wider, so as to hold the stalks, and prevent them from falling off, which was done by one piece of board, about 15 inches wide, nailed to cleats, on the back part of the platform, and which can be easily removed when it is wanted to cut wheat. From eight to ten acres of corn may be cut with this machine, which is an additional claim that this excellent implement has upon the public.

Culture and Preservation of Potatoes.

In the January number of the "Agriculturist," of New York, a communication from the pen of Mr. John Wilkinson, of "The Mount Airy Agricultural Institute," on the above subject, has been read by us with much interest. The average yield throughout the field was 250 bushels per acre. The principles embodied in the practice of cultivating and preserving potatoes, at the above institution, are almost precisely such as have been frequently urged upon the consideration of the Canadian farmers by the editor of this paper. The mode of cultivation we can confidently recommend, having tested it repeatedly on a large scale. A potato crop, managed in the manner described, would cost but a trifle more than making a naked summer-fallow, and with very different results in the pocket. Spring wheat, barley, and flax, may be made to follow the potato crop with most perfect success in nine cases out of ten; and with those crops, the land may be sown with clover with much advantage and profit.

The great point, after all, since the prevalence of the potato epidemic, is the saving of the crop after they are grown. Until more light be thrown upon this difficult subject, it would be unwise to cultivate the potato to any great extent. Without further comment, we give the following extract from the letter in question:—

"About the first of May, I planted five acres in the following manner: the soil was a dry, micaceous, sandy loam, gradually rolling with

a southern exposure; the seed used was both white and purple Mercers, principally large ones, cut into three pieces, and rolled in gypsum, and allowed to lie but a few hours after cutting.—The field was an old sward, chiefly of moss and garlics; the manure employed was entirely from the yards, made from the cow and horse stables and the styes, about twenty-five two-horse loads per acre, spread broadcast before the plough—the land having been heavily limed several years previous. The planting process commenced with the tillage, by dropping the pieces of the tubers (prepared as above) about one foot apart in the bottom of every other furrow, which was five inches in depth and ten inches wide, strewing them with ashes and fine charcoal (from a locomotive, in which pine wood was consumed), about twenty bushels per acre. The ploughing was performed in the usual manner, in the lands of twenty-five yards each.

"Immediately after planting, the ground was thoroughly rolled. After it had lain a few days, it received repeated harrowings, lengthwise of the furrows, in the warm part of the day, which was continued until the tops were three inches in height, after which they remained without tillage until they were some eight inches high, when the cultivator was passed through, between the rows, and the weeds, if any, removed. They then received a light top dressing of gypsum, after which they remained untouched until fit to harvest, which was done as soon as the skins of the new tubers were firmly set, but before all the tops were entirely dead. We began to dig about the first of September, before the autumnal rains commenced. They were placed in a cool, dark cellar, and spread on the ground floor, about eighteen inches thick, where they remained for two months, when they were assorted and placed in bins about four feet deep, there to remain until marketed in the spring. They have so far kept perfectly, there being no visible traces of disease in the entire crop."

Origin of the Soil.

" SCIENTIFC AGRICULURE."

We have received, in pamphlet form, the Address of Professor Norton, of Yale College, delivered on the occasion of the great fair at Buffalo, in September last. It affords a rich repast. The following is an extract:—

The farmer of the present day, who desires to improve, and to thoroughly understand his profession, has a wide range open before him. All of the natural sciences offer advantageous fields for exploration. In the air, the earth, the water, in the vegetable and animal worlds, the mind once aroused, finds sufficient space for its utmost energies.

Each one of the subjects that I have indicated, affords ample scope for a host of observers during a long series of years; even with the great progress already made in research, each possesses within itself a multitude of unresolved problems waiting for solution, and harmonious laws which we only need to understand, to be impressed with a still greater admiration than that we now feel when we are only able to see their incomprehensible workings.

These assertions it is my purpose to illustrate to-day, by some observations upon one of the above topics.

I have selected the soil—not that it affords a broader field than some of the others, but it seems naturally to come first when we speak of improvement, and because it is the foundation from which all progress must be made. I shall confine myself to one part of this great subject—the structure, the physical properties, and the chemical composition of the soil. This may seem to some a narrow limit, but there will be no difficulty in proving it far too broad for the limits of a single address.

The soils which now exist upon the face of our earth, have been produced by a variety of agencies; the chief of these have been, the gradual decomposition and crumbling down of the rocks themselves, and deposition by water. We know that the external outline of the earth has undergone most extensive changes. In some places it has sunk, in others risen. Sometimes it is evident, from the present conformation of surface, that violent currents of water have swept across strata of rocks, wearing away the uppermost, and transporting their ruins to fill up depressions elsewhere. We often find strata upheaved and dislocated by accident from below, and in many cases see the inferior rock presenting itself on the surface, having burst upwards in a state of fusion, in spite of every obstacle. Scarcely a region can be found which does not present striking evidences of the throes, convulsions, and changes, which took place before man became an inhabitant of this planet. It is for geologists to decide, if they can, how long a time was occupied in these changes; suffice it for our present purpose that they have taken place, and that they seem to have been especially ordered for our benefit. Had the stratum last deposited or formed, continued unbroken and unchanged around the whole earth, we should have none of the beautiful variety of scenery which now greets our eyes on every side; no alternation of hill and dale, mountain, plain, and valley, with the attendant variations of climate and production, which now remind us of perfection itself.

The soil would have been identical in com-

position over vast districts, if not over the whole earth, being all formed from at least allied species of rocks. Now as few rocks contain all the material for a good soil, this soil would doubtless have been imperfectly fitted to sustain most of the plants necessary for our existence and comfort. When exhausted, too, we should have had no stores of mineral substances in forms convenient for supplying the deficiency.

The convulsions of nature, however, have been directed for our good, and they seem to have continued in a very long series before this earth was deemed fit for the abode of man.

Geological researches have shown us the existence of races of animals, that lived and died and succeeded each other in countless myriads, through long and indefinite periods of time. We find them all changed to stone, entombed in rocky sepulchres. Sometimes the appearance of the rock denotes that it was deposited from a calm and quiet sea, where the animals died naturally, and in consequence seldom remain whole or unharmed. In other cases life and its functions seem to have been suspended by some sudden change, so that we find large fish with smaller ones in their mouth but half swallowed, and others with their thorny fins yet erect in the attitude of fear or rage with which they received their death shock, when that sudden mysterious destruction came upon them. In some of these periods also, upon that part of the land elevated above the water, there flourished a vegetation of exceeding luxuriance.

Internal fires have borne a decided part in all these changes, if they have not been the chief agents. It is well known that even now, as we go towards the centre of the earth, for each foot in depth the heat increases, indicating interior combustion still active. In the early history of our globe these fires must have burst forth many times. The masses of melted matter may be plainly seen, penetrating the stratified rocks, filling cracks in their substance, flowing over their surfaces, or upheaving or contorting them.

But while some rocks were thrust upwards, others sank in corresponding depressions; and vast currents of water produced by these convulsions, seas and lakes turned out of their beds, seem to have swept over the world; completing the scene of confusion by tearing away and grinding down strata, bearing the materials to other regions, there to form beds of sand, clay, or gravel, according to the nature of the original rock. The vegetation, at such periods, seems to have been carried into hollows, and buried deep by succeeding or continuing shocks, to form, under enormous pressure and a high temperature, beds of coal, for the advantage of beings yet to be created.

Thus all these tremendous revulsions and changes of surface, seem to have been made with the great end of preparing the earth for the habitation of man, making its resources available to him.

In such a view the globe appears to have been a vast manufactory for our benefit. Its beds of limestone, of marl, of gypsum, are dispersed in every direction, that they may be accessible to all; the various composition of its rocks, produces soils capable of growing every necessary plant; its ores are abundant in proportion as they are the more indispensable for the formation of necessary implements; while on the walls of our coal mines, we may still trace the forms of a gigantic vegetation which flourished long ages ago, and was then stored for our use.

It is not to be supposed that the present surface assumed its present shape, in every place at the same time. Some regions, without doubt, became tranquil long before others, but all must at first have presented a strange naked aspect. There was of course no soil, except in the tract of some former current where matter in suspension had been deposited. This appearance of absolute raggedness and sterility, could not have continued long unaltered. Atmospheric influences, heat and cold, moisture and dryness, worked surely then as now, and after a time the most enduring rocks began to crumble. As the decomposing fragments became minute, little patches of soil were formed here and there. If it were on the side of a hill the fine particles had a tendency to descend into the hollows, being washed down by the rain. In ordinary circumstances, therefore, soil must have first appeared in the valleys in every little hollow of the hill sides. The durability of each particular species of rock, had of course much influence upon the readiness with which the soil formed. Thus most of the slates, many limestones and sand stones, soften and decay readily when exposed to the air; on these were to be seen soils at a comparatively early period, and such soils soon became deep. But the granites, and some of the harder limestones, remain almost unchanged for a long period of years, and we see even at this day that the soils upon those formations are thin, while at frequent intervals project masses of the native rock, yet defying the influence of time.—[Michigan Farmer.

Agriculture the leading Interest.

It is supposed that three-fourths of the population of the country are employed in agriculture; the other quarter being divided among all other employments and professions. Besides, the mechanic, the manufacturer, the merchant, and the professional man are all mainly dependent upon the farmers for patronage and support. When the farmers, as a class, are prosperous, all the others participate in their prosperity. From this it follows, that whatever benefits the

agricultural class, directly benefits three-fourths of the people, and indirectly benefits the other fourth.

Surely, then, the farmers have a *right* to demand of government the means to sustain their agricultural societies, and to collect and disseminate important information relating to their calling. Let the light of science and education be brought to the aid of agriculture. Let our resources be developed, and the skill and industry of the husbandman be directed into their proper channels, and results would soon be attained in which not only the farmer would rejoice, but the whole community with him.—[Maine Far.

Marks of a Good Working Ox.

Mr. Asa G. Sheldon, of Wilmington, who has great experience in cattle, particularly in working oxen, and is regarded as the best authority, gives the following:—

Long head, broad and oval between the eyes; the eye full, keen and pleasant. Such marks denote ability to receive instruction and a readiness to obey. The short-faced ox starts quick at the whip, and soon forgets it. The black-eyed ox is inclined to run away. An ox with very large horns near the head is apt to be lazy, and he cannot endure heat well.

Forward legs straight; toes straight forward; hoof broad, not piked; the distance short between the ankle and knee. These properties enable an ox to travel on pavement and hard ground. If the ox toes out, the strain comes on the inside claw, and when travelling on a hard road, he will be lame at the joint between the hoof and the hair. When the toes turn out the knees bend in. An ox with crooked knees is apt to become lame by holding heavy loads down hill.

Breast full; straight on the back; round ribs, projecting out as wide as the hip bones. These are indications of strength and a good constitution.

Diseases of Swine.—Dry warm beds, free from winds or storms, and suitable food, will most effectually prevent fatal attacks. The hog has little external covering to protect him against cold; nature has provided this imediately within the skin in a deep layer of fat which surrounds the full plump hog. Fat being one of the best non-conductors of heat, the pig that is well fed bids defiance to the intese cold which would produce suffering and disease in the ill-conditioned animal.

Glass may be drilled like metal by keeping the instrument (a common iron drill) moist with a solution of camphor in furpentine.

SCIENCE OF FARMING.

BY LEVI BARTLETT.

There are four other elementary bodies that enter into the growth and composition of plants, and it is from these that the greater part or bulk of plants and animals are composed.—These four substances are oxygen, nitrogen, hydrogen, and carbon. The three first of these are known to us only in a gaseous form. Carbon is pure charcoal, and, when burned, it combines with the oxygen of the air in certain and exact proportions, forming carbonic acid. These four are termed by chemists *organic* bodies, and they are susceptible among themselves (and with the organic constituents of plants) of forming an infinity of chemical combinations, and yielding an endless variety of products.

The atmosphere we breathe, and in which plants grow and live, is composed principally of a mixture of oxygen and nitrogen gases, in the proportion, very nearly, of 21 of the former to 79 of the latter. It also contains, as a constituent necessary to the very existence of vegetable life, a small per centage of carbonic acid, on an average of about one twenty-five hundredth part, and however incredible it may seem to those unacquainted with agricultural chemistry, yet it is a fact, that from this source is derived about one half of the solid substance of all plants that grow upon the face of the whole globe.

At the first view it would seem impossible that this apparently small amount of carbonic acid diffused through the atmosphere could supply to growing plants the *carbon* found in their solid parts, as it amounts to from 40 to 50 per cent. of all trees, plants, and vegetables, in fact, all the parts of plants which are cultivated for the food of man or animals, and unquestionably most of this carbon is derived directly from the air, by the agency of the leaves of plants, although there can be no doubt but a small portion of it is taken up by the roots mixed with water, and some of the inorganic matters that are in solution, such as potash, lime, &c.

When we reflect that the atmosphere not only entirely surrounds the earth, but extends in every direction about forty-five miles, "and if the whole acid were collected in a stratum or bed accupying the lower part of the atmosphere, such a stratum would have the thickness of about thirteen feet," and this would be spread over the entire waters of the oceans, seas, lakes, rivers, the deserts of sand, the frozen regions of the poles, and, in fact, over every part and place of the globe, and, by the wisdom of the Great Contriver, this gas is, in

innumerable ways, returned to the air as fast as abstracted, by growing plants. Here, then, our wonder ceases.

We know, if we take a given quantity, by weight, of well-seasoned wood, and distil it in a close vessel, or burn it in heaps, covered over so as to exclude the free access of air, wood charcoal is left behind. When this process is well performed, the charcoal will weigh from 40 to 50 per cent. as much as the wood did. The charcoal consists of *carbon*, with a slight admixture only of earthy matter and saline matter, which remains behind when the coal or carbon is burned in the open air. When the charcoal or carbon is burned in the open air, it combines with the oxygen of the air, to keep up the combustion, and the whole of the coal enters into a chemical union with the oxygen, and forms carbonic acid, or, in other words, carbonic acid consists of oxygen, with a definite or fixed quantity of charcoal or carbon *dissolved* in it. This gas is composed of two proportions of oxygen and one of carbon. In this state it is taken in by the leaves of plants. The leaves of plants are their lungs, and they possess the power of absorbing from the air carbonic acid, and in daylight it is decomposed, but much more rapidly in clear sun light. When thus decomposed in the leaf, the oxygen is set free, and is again restored to the atmosphere, but the carbon is retained and mingled with the *true sap* of the plant; and, in obedience to those mysterious laws of chemical combination, is made to form a moiety of the endless variety of wood, fruits, seeds, &c. &c., which are the results of vegetable life.

It may seem a mystery how the leaf of a plant can take from the air the carbonic acid, when in such apparent small quantity, and separate the carbon from its oxygen. We grant it is a mystery; but then we know for a certainty the fact of the leaves of plants possessing this power of absorption and decomposition; it is the way the growth of a plant has been provided for—the Creator has so willed it.

Plants take from the atmosphere, by their leaves, carbonic acid, a deleterious gas, and decompose it, and restore to it the oxygen that is taken into the lungs of animals, which combines with the carbon of the food, and by the process of respiration is given off to the atmosphere in the form of carbonic acid, the food of plants.

It is sometimes said that politicians and gamblers play into each other's hands for their own private good. Animals and plants perform a more honourable operation: they play into each other's mouths for the general good.

A BRIGHT PLOUGHSHARE is the cheapest commodity ever used by a farmer.—[Gobbett.

BLIND BRIDLES.

"Yes, use your thinking powers, friends: they were given you to use, and not abuse. Blind bridles! Truly named, surely. Art never invented a more fatal thing to the eyes of horses than when she devised this plan of depriving the horse of what nature intended he should enjoy. But, says one, how are blinders injurious to the horse? Because they gather dirt and heat around the eyes. Dirt irritates the eye, and heat produces inflammation. These bridles so entrammel the eyes of the horse that he is compelled to be constantly straining them, to see his way. The over exertion of the nerve brings on disease. Eyes were not made in vain. Had they been needless, the Creator would not have located them in the head. They were placed on the corner of the head, that he might have the advantage of looking in different directions. Men, in the abundance of their wisdom, concluded the horse had too much sight, and they wished to curtail it; hence the origin of blind bridles. Think of this seriously, and you will abandon the use of so destructive an appendage. Remember, that blind bridles and diseased eyes are inseparably connected. Custom hoodwinks the senses of men as much as blind bridles do the vision of horses."—[J. Maddock, Farrier.

Agricultural Address.

We are glad to be able to record the fact that the fine agricultural county of Lenawee has at last wiped off that reproach of having no agricultural society—a reproach under which several of our oldest and most populous counties still rest.—How long will they suffer this reproach? The following is an extract from the interesting address of John Gibbons, Esq., delivered on the occasion of the organization of the above named society. We shall give more of it in our next:—

One farmer believes, (and I am sorry to say that so far from this being a mere imaginary case, there appear to be many such men,) that he has arrived at the "ne plus ultra" of agricultural knowledge—that "no man can teach him much about farming—he was brought up to it and has followed it all his life—he would not give a cent for all 'the book knowledge' contained in all the agriculiural papers in the country." Another by careful observation and enquiry into the natural history and habits of the animal and vegetable kingdoms, by making himself acquainted with the experiments and facts ascertained by others, and by investigating

the laws of chemical analysis, and ascertaining the constituent principles that compose the various kinds of plants and vegetable productions of the earth, and the soil that produces them, together with the relation and effects of light, heat, electricity, air, water, &c., upon them, and discovering by the researches of geologists in relation to organic remains, that the earth has at some former period of its existence, produced plants of immensely larger growth than any of the same species to be found at the present time, and knowing from the fixed and established laws of nature that *exactly similar* circumstances would *necessarily* produce similar results now, he concludes like the great Newton, that so far from having nothing more to learn in relation to agriculture, he is but "as a child playing on the sea shore and gathering a few trifling pebles, while the whole ocean of truth lays unexplored before him?" That man, then, has the best right to his opinions, who has taken the most pains to investigate, and the best means to arrive at a just conclusion in relation to any proposition. But few, if any of us, have a *very good right* to think we know much about farming yet; that is, we so understand the true scientific principles of Agriculture and Horticulture, as to reduce them to the greatest practical benefit, and therefore, that in forming our opinions we should not only pay a due and proper regard to the views of those who have given greater attention to the subject, but in addition to their investigation and experiments, we should make use of the best means within our power to arrive at the just and correct conclusions, founded on experiment to test theories, establish facts, &c. No doubt but many a self-conceited professed *practical* farmer would ridicule such sentiments as some of the preceding, calling them "stuff, mere theory, book farming" Suppose we should set such an one to work side by side with a "book farmer," a *real full-blooded, thorough-going book farmer*, such as that eminent French Chemist, Lavosier, (who, although he probably never performed a day's manual labour at farming in his life, so instructed those who laboured for him, that from his farm of 240 acres, he is said to have obtained double the produce of his neighbours on the same quantity of land,) or as the late Judge Buel, or David Thomas, or Lewis F. Allen, or Doctor Lee, or very many others that might be mentioned in our own country, all "book farmers," (though to confess the truth, I do not know that I should call them, or that any of them would claim to be *thorough bred* book farmers, as that, in my estimation, would require in addition to the facts and experiments of practical farmers, a knowledge of almost the whole range of natural sciences, among which geology, chemistry, and vegetable physiology would claim very prominent places.) But I seem to hear some one say, "what! is he so simple and visionary as to suppose that every farmer must thoroughly understand chemistry, and botany, and geology, mineralogy, ornithology; entomology, phisiology, and all other *ologies?*" Not by any means; for great as the pleasure and advantage of such knowledge would be to him, I very well know that *every farmer* has not the time or means, or even the capacity, for acquiring such knowledge. But *some* farmers should understand them and apply them to practical use, and we should be willing to avail ourselves of the benefit of their knowledge, and pay due respect to their suggestions in making experiments to test the truth and availability of principles they have discovered, and in obtaining through their agency, the analysis of our soils, &c. In this way we might commence a set of rational experiments that would probably lead to very great improvements in your agricultural operations; for is there not just ground to believe from well authenticated facts that are constantly reaching our ears, that such improvements may be made. Some of us have repeatedly seen in this county, on some of the lightest soil in the vicinity, more than one hundred, even as high as one hundred and thirteen bushels of corn grown to the acre, by our highly respected and much lamented friend and fellow-citizen, the late Darius Comstock, (another 'book farmer;') and he assured me in the strongest terms, that it was a great mistake in any one to suppose that the increased trouble and expense, were in proportion to the increased yield—113 bushels of such a crop probably not costing more than two thirds as much as they would have done raised in the same way, on *three* acres of land, which I think would be a full average yield in this county. Now, the probability is, that, were we fully acquainted with the principles of chemistry, geology, vegetable phisiology, and other branches of science that relate to, or have some connection with agriculture, so as to adopt a proper system of rotation, and to give to every crop only those manures or substances necessary for its full development, reserving those not necessary for other crops of a different nature, we might increase them all in at least a two-fold proportion, which you readily admit would be as great a change as any that has been going on in the public mind within the last year or two. Not only so, but while making these improvements in our agricultural operations, we should be very likely to make corresponding improvements in our buildings, our orchards, our gardens, &c., converting our country into a second Eden, a real Paradise, if we were equally careful at the same time, that the improvement in our *minds and manners* should keep pace with our other improvements.

But as our book and anti-book farmers are all this time waiting to be at work, let us give them farms of the same quality side by side, and

watch their operations awhile. B. being a chemist, and acquainted with the elementary principles that constitute the different crops he wishes to cultivate, and knowing that no organic body can be formed in perfection without a due proportion of all the constituent principles that enter into its composition, he thinks a careful analysis of the soil of his farm is necessary before he can go to work understandingly and economically. Perhaps he finds it sufficiently supplied with all the organic and inorganic substances necessary to produce 35 or 40 bushels of wheat to the acre, except phosphate of lime, silicate of potash, or some other material of which it requires but an exceedingly small quantity, and yet *without* which he knows that he could no more obtain a good crop of wheat than he could make soap without oil, or egg shells without lime. Now suppose the soil is so deficient in phosphate of lime as to be incapable of producing more than ten or fifteen bushels of wheat to the acre—instead of incurring much trouble and expense in giving the land a heavy coating of manure that might add but little if anything more than such materials as were already in the soil, he knows that about fifteen pounds of old bones dissolved in a little diluted sulphuric acid, (and that he might find in some corner of his neighbour's fields, left there by a valuable horse or cow that had died of the botts or murrain, or some other disorder, because its owner had not read in some agricultural paper how he might have prevented or cured the disease,) would furnish all that is lacking so far as the soil is concerned, to produce forty bushels to the acre. Will any man of observation at the present time, pretend to say that it is impossible for fifteen pounds of bone dust, or *any other substance*, to increase a crop from fifteen to forty bushels to the acre? Which of us have not had ocular demonstration that from a peck to half a bushel of gypsum will add at least a ton of clover hay to the acre? And it appears, (if I remember right,) by experiments recently made in France, that one quart of sulphuric acid, diluted in a large quantity of water, and sprinkled over an acre, has produced as great an effect. Nor is this at all strange when we understand that all plants "require certain salts for the sustenance of their vital functions, the acid of which salts either exist in the soil, (such as the silicic, phosphoric or sulphuric acids,) or are generated from nutriment derived from the atmosphere; thence if these salts are not contained in the soil, or if the bases necessary for their production be absent, they cannot be formed, or in other words, plants cannot grow in such soil—and as different plants require different salts, and in different quantities, the aptitude of a soil to produce one, but not another kind of plant, is due to the presence of a base which the former requires, and the absence of that, indispensable for the development of the latter;" therefore it is evident that upon the correct knowledge of the bases and salts requisite for the sustenance of each plant, and of the composition of the soil upon which it is grown, depends the whole system of a rational theory of agriculture. By understanding these, then, our thorough-bred scientific "book farmer," with the least possible expense, may go on as Lavoisier did, increasing the products of his farm, orchard, or garden, until they are double or treble those of his *anti-book farming* neighbor, who we will suppose is a good, industrous thorough-going "practical farmer," knowing well how to plough and sow, harrow and hoe, reap and mow, and perform all the manual operations relating to his occupation, well; and having come, perhaps, from a part of the country where he has seen great effects produced by the application of lime, finding his land does not produce well, and not possessing that scientific or "book knowledge," that would discover to him that his land is already sufficiently supplied with it, he goes to much expense in giving it a coating of that material, and to his surprise finds it produces but very little if any good effect — or perhaps he has seen very beneficial results from the use of ashes, and applies a coating with like success, because the salts of potash were already in the soil in sufficient quantity.

Thus, then, may he toil on with wealth ready at his hand, only that he does not, like his scientific neighbour, know how to take hold of it..

As two such farmers once I knew,
Could I but fairly bring to view
Why one had ever good success
In raising crops, the other less:
You'd see, perhaps, with some surprise,
Why "one was foolish," one was wise.
A *trifling* difference I could see,
Which made the reason *plain* to me:
One laughed at scientific men,
Who labour only with the pen,
Pretending that they understand
How working men should till the land,
And how they might improve the soil
With surer hope, and less of toil,
By help of analytic art
To show them each constituent part,
That forms the land and the grain,
That springs from out the fertile plain,
And where there might for barren ground,
The lacking element be found,
And thus with scientific skill,
There lengthened barns and granaries fill.
The *other* deeming wisdom's part,
Would be, to give to every art
Relating to his avocation,
A little time and observation;
That thus he might perhaps discover
That all improvement was not over;

And having early learned to read,
Within his mind at once decreed,
He'd hand some money to a friend,
And for a *farmer's paper* send,
And read its pages o'er with care,
To see if ought presented there,
Might to his benefit accrue,
And now, what I would ask of you,
Is just to come along with me
To these two neighbouring farms and see
A working man, with pains and labour
Much greater than his book-learn'd neighbour,
Possessing, too, as good a soil,
Get far less produce for his toil,
Merely because he does not know
That not a plant on earth can grow,
To form a crop both large and good,
Without its own appropriate food,—
That never yet a plant was made,
By all the help of hoe and spade,
(So Nature's Author did provide,)
Unless its growth were well supplied
Both from the earth and from the air,
By help of man, or Nature's care,
With every element we find
In every plant "after its kind,
If then a farmer still "would thrive,"
Not only must he "hold or drive,"
But wisely study Nature's laws,
And learn the "wherefore and because."

I had no thought of running into such a "doggeral strain as this. It come a little like the boy's whistling that "did'nt whistle—it whistled itself." But as variety is said to be "the spice of life," I thought I would not suppress it. It may serve to "please the boy's," and may possibly catch some scant corner in their minds in which to p'ant a new idea.—[Michigan Farmer.

Treatment of Sick Animals.

There are many erroneous notions prevalent in the community, respecting injured or diseased domestic animals and such unnatural or injurious practices as a consequence of these incorrect views, that no apology is necessary for an attempt to subserve the cause and interest of these useful creatures which, if they had tongues to speak, would tell sad tales of the wrongs to which they have been, and still are, too often subject.

We do not propose to give an essay on the particular cases that require attention—our object is rather very briefly to ask the owners of domestic animals to be guided by a few correct principles, which are applicable to nearly all cases, and which will at least prevent us from doing harm, and be the means, probably, of doing much good.

In the first place, then, we would insist that when an animal is well he never requires any medicine; and when he his sick, we would protest against his being dosed with articles that are said to be 'good' for a particular disease, without any reference to its violence or the symptoms, as common sense would dictate, that remedies the most opposite in their character and effects, may be equally advantageous in different periods of the case.

Always distrust a man and the remedy, when your friend declares that an article is *alwaays good*, or *a certain cure* for a disease, without reference to its symptoms—prescribing for the name of the disease itself—this is the very essence of quackery, in man or beast.

A large portion of the diseases of animals closely resemble those of the human family, and require a treatment conducted upon the same general principles—with some variations and some peculiarities, it is true; but none of those outrageous departures from common sense, which are too frequently witnessed.

A horse with pleurisy, or inflamation in the lungs, or apoplexy, requires a widely different treatment from one with cholic or worms. There is no more mystery about the disease of a horse or an ox than about those of a man, and a violation of natural laws is as productive of pain and injury in one as in the other.

There is too great a propensity, everywhere, to resort to active treatment in all cases—a feeling that is encouraged by the ignorant or designing for selfish purposes. An adviser in sickness is often most useful, and shows most skill, where he only tells us what is to be avoided and waits for indications for more active measures—doing little more than preventing ignorant but well-meaning persons from interfering with the salutary and useful changes that may be going on.

Remember that there is a restorative power in nature, to which it is always better to trust, than to direct active remedies without knowing for what particular purpose they are given.

There is never occasion for the administration of the disgusting combination which the poor animal is made to swallow, from the mere whim of an ignorant horse or cow-doctor. Many a fine beast has been lost by his owner trusting to such prescriptions.

When your animal has fever, nature would dictate that all stimulating articles of diet or medicine should be avoided. Bleeding may be necessary to reduce the force of the circulation—purging, to remove irritating substances from the bowels—moist, light, and easily digested food, that his weakened digestion may not be oppressed—cool drinks, to allay his thirst, and to some extent, compensate for diminished secretions—rest and quiet, to prevent undue excite-

ment in his system, and so on through the whole catalogue of diseases—but nothing to be done without a reason. Carry out this principle, and you will probably do much good—hardly great harm; go on any other, and your measures are more likely to be productive of injury than benefit. But as we have before said, our object now is not to speak of diseases in detail; it is rather to encourage our agricultural friends to *think* before they *act;* to have a reason that will bear examination for every step in the management of a sick or injured animal; to remember they have a powerful assistant in *nature*, (being fairly used,) and that specifics, as they are called, are much fewer and less to be trusted, than their proprietors would have us believe.

We might, indeed, almost sum up what we would desire, in one general direction of five words:—TREAT YOUR BRUTES LIKE MEN.—[Farmer's Cabinet.

Cough in Horses.

In all disorders accompanied by a cough, the true cause should be ascertained. Sometimes the cough is only a consequence of a chronic or seated disease, as is the case in heaves, &c. At other times it is symptomic of recent inflamation of the mucous membranes of the head and glands about the throat. We have found salt, given freely, together with an occasional dose of saltpetre, to be an excellen remedy in cases where a horse has had the horse-ail, and the cough holds on after the original disease seems to have gone. For a dry, husky cough, not attended with the heaves, green or laxative food, such as roots, or mashes of scalded bran, in which is put the pulverized root of elecampane and lovage, has been found beneficial. If there should be found indications of heaves, put a spoonful of ginger, once per day, in his provender, and allow him to drink freely of lime water. Horses that are kept on musty hay will very soon begin to cough. The best remedy for musty hay cough is, to change the diet to good sweet clover.—[Maine Farmer.

Another Remedy.—Human urine put into a bucket of water, and given to the horse, or sprinkled on his fodder. This remedy has been much used by some, and with excellent success.

Another—The boughs of the cedar have been used as a remedy, with complete success. They should be cut fine, and mixed with the grain given to the horse.

Another.—Arse-smart. as dry fodder, has often been given to horses for cough, with good success. A dose of this fodder occasionally, in the winter, is good for the health of the horses; and it should be saved for that purpose.

Another.—We once cured a horse of an obstinate cough, on which a number of medicines were tried without effect, by feeding him exclusively on sheep's orts. They have peculiar medicinal properties, which they imbibe from the dung and urine.

Another.—Boil a small quantity of flax seed; mix it in a mash of scalded bran, adding a few ounces of coarse sugar, or some molasses or honey.

FLAX-STEEP WATER AS A MANURE FOR FLOWERS.

"I used the water in which I had flax steeped as a manure for flowers last year. I followed up the experiment this year; and although I was from home for five weeks, during which time none of the plants had been watered with the flax-steep, still I am able to say that those dahlias to which I gave the water early continued to keep ahead of those not so treated. The latter grew from two and a half to three feet high, while those to which steep-water was applied, grew from seven to eight feet high, when three of them broke down, the sticks being too weak to support them against the wind; but their beauty, from the abundance of bloom, surpassed any thing that I have seen. I have not manured my garden for these last four years, being determined to keep it poor, in order to try what effect flax-water would have in producing good full-grown flowers in cold worn-out soil. I am now able to assert that none of my neighbours had such a blow of roses or dahlias as I have had; and to them I can refer, as they were witness of the fact. I had, by the use of flax-water last year, dahlias from ten to twelve feet high, loaded with the most perfect flowers. This rich liquid manure (for it deserves the name) will be found invaluable to market gardeners and growers of flowers. I find it to annihilate the green fly."—[J. Dickson, British Flax Mills.

How much Lime ought a soil to have?—Prof. Johnston considers that a proportion of lime is indispensible to the fertility of a soil. He thinks that the proportion of three per cent. of the carbonate, (or common lime-stone,) is not too much, and there are not many cases inwhich it would be advisable to increase the quantity beyond six to 10 percent, provided the carbonate is in a sufficiently minute state of division.

Draining low lands will contribute to promore health and profit. Generally speaking, our wet and marshy lands are the richest in organic matters, and become the most profitable to the owner, when thoroughly drained.—Buel's Far. Com.

Grain Sick.—This disease is caused by improper feeding, in allowing the animal too great a quantity of grain at one time, particularly those which have been subject to the process of distillation.

The first symptoms are a dull, heavy appearance of the eyes of the animal; she frequently shifts about from one side to the other, and when she is let loose and driven about, she complains or grunts more or less. On examination, a fullness may be perceived between the hip and ribs, on the opposite side to the milking one, if pressed down with the hand. This fullness is produced by the extension of the stomach.

Bleeding and purging is believed to be the only remedy; the first to relieve the urgent symptoms—the second to remove the cause of the disease. The quantity of blood to be taken away may vary from three to five pints; after which the following purging drink may be given, milk warm, at one dose, in two quarts of water gruel, and half a pint of molasses:—

Sulphur, from 9 oz. to 1 lb.; grains of Paradise (cardamoms), 3 drachms; saltpetre, 1½ oz.; tumeric, 3 oz.; cummin seed, ¾ oz.

When it has fully operated in unloading the stomach, the weakness of the organ, the loss of appetite that ensues, and the deficiency of milk connected with it, will be repaired by medicines of an aromatic and bracing nature; like the following prescription:—

Gentian, cummin, coriander, valerian, and anise seed, each, ¾ oz.; grains of Paradise, ¾ oz.; flour of sulphur, 1½ oz.

To be mixed, and given at one dose, in a quart of mild ale or beer, after having previously boiled it with a handful of chopped rue. This should be given when warm, and repeated once a day, or every other day, till recovery takes place, which usually happens in a few days.

The regimen should consist of diluted liquors and mashes for some days after; and grains are entirely to be given up till the stomach gains its former strength and tone. They are then to be given with caution in order that no relapse may ensue.

Losing of the Cud.—This malady arises from a relaxed state of the bowels, and the accumulation of food in the first stomach, which, in not being able to be returned by the cow into her mouth, does not undergo the second process of chewing, so essential to the preservation and maintenance of health.

This disease readily yields to the treatment recommended in "Grain Sick," first by purging, and then bracing up by tonics, diluent washes, &c.

Hydrophobia, or Madness.—This disease arises from the bite of a dog, or other animal affected by madness, or rabies. Although it is regarded as incurable, it is proper to know its symptoms. These are a constant distress and lowing of the cow, a great flow of froth from the throat and tongue, with the breathing some what irregular; the malady at last breaks out into an ungovernable frenzy, or madness, and the loss of power over the voluntary muscles extend throughout her whole frame, and in four or five days from the commencement of the disease she dies.

The cow, as well as the hog, the sheep, and the horse, does not appear to be able to transmit this malady by biting, like the dog, the cat, the wolf, and the fox.

Wounds by Goring, or Pokes.—Cows, when they get together in the yard, or elsewhere, are liable to be gored by each other in different parts of the body, especially if any one of them is wounded, and they see or smell the blood. This renders them furious, and they fight and poke at each other with their horns.

The treatment of all such wounds is to be conducted, first by endeavouring to stop the effusion of blood, either by styptics, by pressure (binding up), or else by sutures, or stitching of the part. The styptics commonly used consist of

Oil of vitriol (sulphuric acid), and brandy, each, 1½ oz.; or common salt and nettles, a handful each.

To be beaten together in a mortar till it becomes a pulp, and then placed on the wound. If not sufficient to stop the blood, it may be assisted by pressure or a bandage; if it still fails, and should the situation admit of it, the lips of the wound, or the divided skin, may be brought together with crooked needles or pins specially made for the purpose. When this is done, everything is to be left for the first twenty-four hours, in order that the blood vessels may collapse, and a further effusion of blood may be prevented. At the end of that time the wound should be dressed.

In case the external opening of the wound is confined and the gore very deep, a small candle should be thinly wound round with flax or tow; and after it has been well soaked in the following balsam, and dipped in the digestive ointment prescribed below, it may be conveyed into the wound and there left:—

WOUND BALSAM.

Take compound tincture of myrrh, 4 oz.; cold drawn linseed oil, ½ pint; spirits of turpentine, 4 oz.; and mix well together.

DIGESTIVE OINTMENT.

Take common turpentine, 8 oz.; spirits of turpentine, 5 oz.; linseed oil, 2 oz.; and mix over a slow fire.

The swelling is then to be rubbed once a-day with the following stimulant oils :—

Linseed oil, 8 oz.; oil of turpentine, 2 oz.; oil of vitriol, 1 oz.

The last-named article is to be gradually mixed with the other two. The application of this will prevent any tendency to mortification, and also produce a quick suppuration, or running of the sore. These dressings may be repeated twenty-four hours. If the parts are much swollen and inflamed, a dose of epsom salts may be given, and the following fomentation used once a-day :—

Camomile flowers, ½ lb.; wormwood, a large handful; bayberries (Lauris nobilis), and juniper berries, each, 4 oz.; beer, or ale grounds, 6 quarts; vinegar, 1 quart.

The whole to be boiled for a quarter of an hour, and then to be applied, while quite hot, by dipping in it a large piece of flannel, and fomenting the inflamed parts. When this operation is finished, the flannel should be allowed to remain, and the animal covered up so as to avoid catching cold.

CHOOSING A HORSE.

There is much pleasure and profit in the service of a good horse, but very little of either in a bad one. There are many mean horses that make a good appearance when taken from the hands of a jockey. In purchasing a horse, then, trust not to the sellers words; let your own judgment, or that of a friend, be chiefly relied on. See that he has good fore feet and joints, and that he stands well on his legs. See that his fore teeth shut even; for many horses have the under jaw the shortest: these will grow poor at grass. See that his hair is short and fine; for this denotes a good horse. Observe his eyes, that they are clear, and free from blemish—that he is not moon-eyed or white-eyed; for such are apt to start in the night. A large, hazel-coloured eye is the best.

Look at his knee; see that the hair or skin is not broken, for this denotes a stumbler. Take care that his wind is good; for a trial of this, let him be fed on good hay for twenty-four hours, take him to water, and let him drink his fill, placing him with his head the lowest; if, then, he will breathe free, there is no danger. See that his countenance is bright and cheerful: this is an excellent mirror to discover his goodness in. If his nostrels are broad, it is a sign that he is well winded; narrow nostrels the contrary.

See that his spirits are good, but that he is gentle and easily governed; not inclined to start. In travelling, mind that he lifts his feet neither too high nor too low; that he does not interfere or overreach, and that he carries his hind legs the widest. See that he is well-ribbed back, and not high-boned. The size may be determined by the purchaser. Age, from five to ten is the best. There are many tricks practised by jockeys to make horses appear young, but it is not consistent with the size of my book to detect them; all I would say, is, that horse's teeth, when young, are wide, white, and even; the inside of their mouths is fleshy, and their lips hard and firm. On the contrary, the mouth of an old horse is lean above and below; the lips are soft and easily turned up; their teeth grow longer, and are of a yellower colour.—[Selected.

THE HORSE'S EYE.

I will now inform you how, for certain, you may know whether a horse has a strong and good eye, or a weak eye, and likely to go blind. People in general turn a horse's head to a bright light to examine his eyes. You can know very little, by this method, what sort of an eye the horse has, unless it be a very defective one. You must examine the eye first, when the horse stands with his head to the manger. Look carefully at the pupil of the eye, in the horse; it is of an oblong form; carry the size of the pupil in your mind, then turn the horse about, bring him to a bright light, and if, in the bright light, the pupil of the eye contracts, and appears much smaller than it was in the darker light, then you may be sure the horse has a strong, good eye; but, provided the pupil remains nearly of the same size as it appeared in the darker light, the horse has a weak eye; therefore, have nothing to do with him.—[From an old Almanac.

DURABILITY OF RAILS.

Rails split in the spring when the bark will leave them, last much better than those split in winter, as the bark remaining on the wood causes it to retain moisture, which soon rots the rail. When there is bark on the rails, to turn down so that, as it becomes loose, it can fall off, will promote their last. Small rails last much longer than large ones. All fences should be torn down and re-set within three years after they are first built. The rails are not then so rotten as to break in throwing about, while the bark has generally become sufficiently loose to jar off. For durability, Spanish oak is much better than either red or post oak.—[Southern Cultivator.

Do not wait for extraordinary opportunities for good actions, but make use of common situations.

From the New England Farmer.

THE HAPPY FARMER.

BY MRS E. C. LOOMIS.

His home's a cot embowered in trees,
A garden filled with fruit and flowers,
Where singing birds and humming bees
Make gay the smiling summer hours,—
A range of meadows green and fair,
And fields which well repay his care.

With joy he greets each rising sun,
And gladly hastens to his toil;
In fancy, sees the harvest won,
As covering with the mellow soil
The tiny seed, which yet will bring
A glorious autumn offering.

The golden hours, how quick they fly!
The happy day, how soon 'tis fled!
Then homeward doth the farmer hie,
And finds a table neatly spread
With many a dainty, which the field
And garden-plot so richly yield.

The evening hour is fraught with joy,
For loved ones cluster round him there;
He tastes a bliss without alloy
Which e'en a king might wish to share;
Then seeks his couch and finds repose
Which only he who toileth knows.

Asparagus.

Asparagus seed may be planted in drills in the fall as soon as ripe, or early in the spring. If the ground is rich, light, well cultivated, and kept free from weeds, the plants will be large enough to transplant when they are one year old.

Having the plants one or two years old, select a spot where the soil is dry, light, rich, and well exposed to the sun. Lay out the bed the size you wish; spread upon it a quantity of well rotted manure, sufficient to cover it to the depth of three or four inches. Trench this in, at least twelve or fifteen inches deep. This is done by standing upon the bed and opening a trench, say a spade and a half deep, and one foot wide, across the head of the bed. Throw the dung which is immediately under your feet, into the trench, spreading it evenly; then take the earth upon which you stand, and throw it upon the manure. By this process the first thench is filled, and a new one opened, and the bed is raised six or eight inches. Having trenched the whole bed in this manner, spread a coat of well rotted manure upon it and dig it in, incorporating it well with the soil: this done, level the bed and rake it smooth. Now strain a line along the bed six inches from the edge, and open a trench about six inches deep. Place the plants along the back of the trench, ten or twelve inches apart in a row, and the crowns three or four inches below the surface. Finish the first row before commencing the second. Let the rows be eighteen to twenty inches apart.

Asparagus should not be cut in less than three years from the time of transplanting, but in four years it will bear extensive cutting. After planting the first row, it is well to place a board on the bed to walk upon, in order not to tread the earth while planting the succeeding rows.—[Michigan Farmer.

Horticultural.

From the New England Farmer.

Transplanting Trees.

MR. EDITOR: As the season is approaching when the transplanting of trees will again commence, I propose, as briefly as the nature of the subject will admit, to state my own experience as to the best method of accomplishing this object.

And first, as to the season of transplanting. I am well satisfied that, for deciduous trees of all kinds, the spring months are most favourable; and the sooner this can be done after the frost is out of the ground the better. My plan is to have the holes prepared in the autumn, when it is practicable, because the action of the frost and the snow and the rain tend to loosen the earth beyond the hole upon all sides, and thus give the new fibres from the roots a better chance for penetrating the earth. Another advantage is, that by digging the holes in the fall, the decay of weeds, leaves, and other vegetable matter that collects in them, forms the best nutriment for the roots.

Evergreen trees may be planted a little later than deciduous trees; but I cannot recommend a later period than the 20th of May, and they will be sure to do well if planted at any time for a month previous.

We have all been cautioned against deep planting sufficiently to prevent the pratice being very common; nevertheless we are apt to commit a very great error, causing a similar result, by loosening the earth too deeply. We propose now to speak of the manner of preparing the ground for the reception of the tree, by which this error will appear manifest.

In digging the holes, reference, of course, must be had to the size of the tree to be planted. The holes should be at least a foot wider in circumference than the roots, but no deeper than is sufficient to sink the crown of the stem where it rises from the roots to a level with the natural level of the ground, or, if anything, a little above it. If we examine a tree growing in its natural

state, we shall always find that the tree bulges out of the ground, and that the diverging roots are generally visible; while the tree which we plant is set so low that it looks more like a stake driven into the ground than a tree. It is a common practice, after digging the holes as deep as the tree is intended to be placed, to loosen the earth still deeper down, sometimes throwing it out, and putting in mould, sods, or manure. The effect of this is, that the tree settles down with the earth, as it hardens, and gets below its natural level, to its great and lasting injury.

In taking up the tree to be transplanted, we are apt to be short-sighted and careless, and we cut away and break the roots without mercy. The proper method of proceeding is, to take off the earth carefully above the roots, and then proceed well outside, and trench round the tree till the operator gets below the tier of roots; then, by passing the spade under and towards the centre of the tree, he can loosen it in its bed, and draw it out. Before setting it out, let him examine the roots carefully, and cut off smoothly every end of a root that has been broken, and it is then ready for planting. To do this in the best manner, it should be placed as near as possible in a similar position to the old one, the roots should be carefully straightened out, and the earth filled in among them by the hand. It should not be trodden down until this has been done, and the earth all in, and then only pressed upon with the foot. No water is necessary; on the contrary, in nine cases out of ten, it is hurtful. If a tree has been out of the ground for a long time, and the roots have become dry, it is advisable to make a puddle of mud, and dip the roots in it before setting the tree.

Mulching trees, after transplanting, is a most simple and ready mode of protecting them from heat and drought. I have never known it to fail in keeping a tree healthy and vigorous against the severest drought. Grass, weeds, stable litter, or even stones around the trees, is a sufficient mulching. This, in our climate, is an essential never to be disregarded, either in fall or spring planting.

Pruning is another important essential to be observed in transplanting deciduous trees. Every tree, when transplanted, loses some portion of its roots; and it follows, of course, that it loses a part of its ability to support its branches, and to furnish the requisite supply of food for a vigorous growth the ensuing season. It becomes necessary, therefore, to sacrifice a part of the tree above the ground, somewhat in proportion to that which has been lost beneath. Now, there are several modes of doing this. I have tried them all, and am convinced that the best, simplest, and the only one that does not detract from the beauty of the tree is, to cut off from every branch, except the topmost leading shoot, the whole of the previous year's growth down to a vigorous bud on the stem. A few more words about transplanting, and I will finish my desultory remarks. A damp day is better than a bright day; and a still day is preferable to a windy one, for transplanting trees; and never expose for a moment, if possible, the roots of any tree, particularly an evergreen tree, to the wind. I have never seen this sufficiently attended to. Where a tree is to lie, if only for a few moments, exposed to wind or sun, a mat should be at hand to protect it. More trees are lost from a desiccation of the roots by a drying wind than from any other cause.

LYNN, Jan. 1849. R. S. F.

From the March Number of the Michigan Farmer.

PEAR CULTURE.

In consequence of the difficulty experienced in raising pear seedlings, in sufficient quantities to supply the demand; also, of the length of time which is required to bring some varieties of pears into bearing, when worked on their own stocks, many experiments have been made in order to overcome these difficulties. The pear has been worked upon apple, quince, thorn, mountain ash and other stocks. None have been found to answer the purpose so well as the quince. When engrafted upon the apple or thorn, they will thrive well for a few years and then die. If engrafted into the root of either of these, and planted sufficiently deep for the scion to strike root, it will be found in two or three years, that the pear has taken root, and now stands on its own bottom. This method obviates one difficulty only, viz, the want of pear stocks. With the quince for bottoms, many difficulties are overcome. Quince stocks are easily raised, and can be had in abundance. The pear takes very readily upon it, with the exception of a few varieties, and these can be made to grow upon it by double working; this is done by budding a variety upon the quince that will grow them freely. When this is one year old, bud the refractory one into it, and it will grow as freely as any other.

Many varieties of pear do better on quince than on their own stocks, and will come into bearing in two or three years, from the bud, bear larger, fairer fruit, and more regular crops. A variety that grows freely on the quince, will attain the height of twelve or fifteen feet; and if properly pruned, will make beautiful pyramidal trees, branching from within one or two feet of the ground. There are many specimens of them in this country, and in France, that have been in bearing from 25 to 30 years, and are

ill as healthy and vigorous as ever, and bid ir to continue so for many years.

Dwarf pears, or those on quince bottoms, are eculiary adapted to gardens, for many trees ay be planted in a small space. They may e planted eight or ten feet apart, thus giving any varieties in a small space, without doing jury to the surrounding shrubbery. Pears, hen on their own stock, should be set at least wenty feet apart; thirty feet would do better. hese trees not only overshadow the garden, ut their roots require much more room than he quince. We prefer pears on their own tocks for orchards, on quince for gardens.

SCIONS.

Scions for grafting may be cut now. The est mode of preserving them, is to pack them n damp saw dust, and place them in a cellar. Packed in this way, they can be had for use at ny time, and they come out clean from grit, which saves the trouble of sharpening the knife o often as is necessary when they are packed n sand.

SUPERIOR GRAFTING WAX.

Take 1 pint linseed oil,
6 pounds rosin,
2 pound bees-wax.

This makes a better and cheaper wax than ny I have used made from rosin, tallow and beeswax. The oil will admit of a much greater proportion of rosin than the tallow. This wax will give entire satisfaction to whoever shall use it.—[Horticulturist.

MELON CULTURE.

Hovey, in his Magazine of Horticulture for December, in speaking of a visit to the garden of H. N. Langworthy, Esq., situated on the Genesee River, near Rochester, says:—

We have stated that Mr. Langworty gives great attention to the culture of the melon. The kinds he cultivates are principally the Imperial and the Black Spanish, but the greatest quantity of the former, which, though so late a variety, that, in the latitude of Boston, it will not come to perfection in the ordinary modes of culture, by Mr. Langworthy's plan, ripens an immense crop. His mode is to start the plants in a hot bed—the same as for cucumbers: the plants are removed to the hills where they are to grow, as soon as the weather is favourable, but they are not immediately exposed to the weather: boxes, covered with a course gauze or millinet, about two feet square, are placed over each hill, and as the plants become inured to the open air, the boxes are removed, and the plants continue to flourish, soon covering the ground. Melons of the Imperial variety are produced, weighing about thirty pounds each. This is a profitable crop as managed by Mr. Langworthy, and it is almost unnecessaryto add, that no crop, either of melons, cucumbers, or squashes, can be grown without a great deal of care, especially in attending to the destruction of insects, &c.

HINTS TO LOVERS OF FLOWERS.—A most beautiful and easily attained show of evergreens in winter may be had by a very simple plan, which has been found to answer remarkably well on a small scale. If geranium branches are taken from healthy and luxuriant trees, just before the winter sets in, cut as for slips, and immersed in soap and water, they will, after drooping for a few days, shed their leaves, and put forth fresh ones, and continue in the finest vigor all winter. By placing a number of bottles thus filled in flower baskets, with moss to conceal the bottles, a show of evergreen is easily insured for a whole season. They require no fresh water.—[Court Journal.

Green House Plants.

Where green house plants are kept in warm dry rooms, they are apt to be infested with insects, such as plant lice, red spider, &c. A good remedy for plant lice, is to take a basin of warm soap suds and turn the ends of the branches on which they are found, into it. This will destroy them immediately. Wash the plants afterwards in clear water.—The red spider increases rapidly in a dry atmosphere; a moist atmosphere is death to them.

Hydrangeas, Oleanders, and plants of that class, may be kept safely in a dry cellar, with some light, where the mercury does not fall more than five or six degree sbelow the freezing point.—[Michigan Farmer.

IMPORTANCE OF GOOD TOOLS.

Those mechanics only who have excellent tools can duly estimate their importance. Many work year after year with poor tools, when a little time or expense would supply them with good tools, enabling them to do far more work and do it better.

Sometimes a mechanic will use a poor implement, when a good one could be obtained for one or two dollars that would last for years, and would annually make a saving of more than double the cost of the implement.

A blacksmith who had far better and more tools than was common with others in the same business, hired an Englishman to assist him. The first thing the stranger did was to make tools, and for more than a week he plied him-

self closely to making tools, before he would do any other work. His time was well spent, as was shown by the neatness and despatch with which he worked, after being properly prepared.

A poor saw often requires twenty-five per cent. more strength than a good one. If it be used one sixth of the time, the loss would be about one day a month, which in a year would be equal to a sum sufficient to buy a dozen good saws. Mechanics should make estimates occasionally. They will present results in a long run that are highly important though they may seem trifling for a single day.—[New England Farmer.

Mechanical.

Hale's Rotary Pump.

An unusual article in the way of pumps was introduced to our notice a short time since at the store of Thompson & Hale of this city. It is a suction and forcing pump constructed on the rotary plan. The valves, of which there are two, work in a cylindrical chest, or box, scooping in the water by an orifice on one side, and driving it out on the other. The position and workings of the valves or buckets is regulated by a heart-shaped groove—as they revolve horizontally within the chest.

The pump is provided with gearing, and is worked by a crank. Its operation so far as we saw it was very satisfactory, delivering a stream of water with great steadiness, through an inch and a half tube; the size of the chamber being six inches in diameter by three in depth.

The advantages which occurred to us in examining it, were that it is wholly constructed of metal—no leather being used for packing a single joint; and that the mode in which it is geared would admit of its being used in wells of great depth with an economy of force. The ordinary force pump requires a rod reaching from the handle to the piston; and when the well is deep this must be of great weight, and no inconsiderable force is required to move it up and down. The rod in Hale's pump would not be required to be raised at all, but would be used merely as a shaft to turn the buckets.

The inventor also claims to save a great amount of force in working the pump: but of this we could not judge. We threw a stream of water through an engine hose to the height of perhaps thirty feet, without any difficulty. And the inventor claims that two men on an engine of this sort will throw a volume of water equal to that thrown by eight men on the common brake.—[Prairie Farmer.

To Make a Gold Powder.—Dissolve gold in aqua regia, or 2 parts nitric and 1 of muriatic acid. The leaf gold is best to use for this purpose. Then take cotton and soak up all the nitro muriate of gold, suffer it to dry and afterwards burn it on a saucer. Take up the ashes of the cotton and wash them, allowing the water to settle before pouring off, when a fine gold powder will be found at the bottom of the saucer, which must be dried and can be used afterwards in the arts, such as ornament for leather or paper.—Scientific American.

Useful Receipes.

Indian Meal Puddings.

Baked Pudding without Eggs.—Boil a quart of milk, and turn it upon three pints of sifted Indian meal, when it is cool stir in half a tea-cup of butter, and half a tea-cup of sugar melted together, a teaspoonful of salt, and a grated nutmeg. Mix them well, and bake three hours.

Cheap Baked Pudding.—To one quart of boiled milk, while hot, stir in a tea-cup of Indian meal, a tablespoonful of ginger, about a gill of molasses, and half a tea-cup of suet chopped very fine. Bake two hours.

Another Plain Baked Pudding.—To two quarts of milk, add half a tea-cup of molasses, and a teaspoonful of salt, scald it, and while it is boiling stir in Indian meal until it has about the consistency of griddle cakes. Put the mixture in a batter pan, and just before you bake pour on a tea-cup of cold milk. Bake two hours.

Baked Apple Pudding.—Pare and core six large apples, chop them very fine, and mix them with a pint of sifted Indian meal, two eggs, a tablespoonful of butter, and about a quart of milk. Bake in a buttered dish about two hours.

Baked Plum Pudding.—Seven tablespoonfuls of sifted Indian meal, three pints of milk, seven eggs, half a pound of raisins, quarter of a pound of butter, and a quarter of a pound of sugar, a grated nutmeg, a tablespoonful of cinnamon, and half a teaspoonful of salt.—Scald the milk, and while it is boiling stir in the meal—let it cool, stone and put in the raisins, the salt and spice. Beat the eggs well, and stir altogether very hard. Put it in a buttered dish, and bake an hour and a half—good heat.

Muffins.—Scald a quart of Indian meal, and add a little salt. Beat four eggs, whites and yolks separately. Stir them into the meal after it has become cold. If the batter should be very thick, put in a little water. Bake in buttered muffin rings.

FRITTERS, QUICKLY MADE.—One egg, two poonfuls of flour, a little sifted sugar and gin-er, milk sufficient to make a smooth batter; ut middling-sized apple into thickish slices, nd put into the batter, and with a spoon put hem into the frying-pan, with just the batter hich is taken up in the spoon; have a sieve ith the bottom up, and, as fried, lay the fritters pon it to drain. The above quantity is sufli-ient for a small dish.

GALLS FROM THE HARNESS OR SADDLE.—Mr. Editor: White lead, finely pulverized, is he most effective application. Rubbed on dry, r made into a paste, with milk, and applied a ew times, it will also prevent white hairs grow-g on galled places. In our fatiguing marches n Mexico, the above was found to be an invalu-ble remedy by A VOLUNTEER.

TO MAKE YEAST.—To two middling-sized oiled potatoes, add a pint of boiling water and wo tablespoonfuls of brown sugar. One pint f hot water should be applied to every half int of the compound. Hot water is better in warm weather. This yeast, being made with-ut flour, will keep longer, and is said to be uch better, than any previously in use.

RICH BUCKWHEAT CAKES.—Take two pints f fresh buckwheat flour and half a pint of sift-d corn meal, mix with milk to a thin batter, dd one tablespoonful of fine salt, and two tea poonfuls of brewer's yeast, or an equivalent of ther yeast. Leave the whole in a stone jar, n a warm place, to rise over night. In the morning, add a teaspoonful of saleratus dissolv-d in a tablespoonful of hot water, and then bake immediately.

BEAN SOUP.—Put two quarts of dried white beans into soak the night before you make the soup, which should be put on as early in the day as possible. Take five pounds of the lean of fresh beef—the coarse pieces will do. Cut them up, and put them into your soup pot with the bones belonging to them (which should be broken to pieces) and a pound of bacon cut very small. If you have the remains of a piece of beef that has been roasted the day before, and so much underdone that the juices remain in it, you may put it into the pot, and its bones along with it. Season the meat with pepper and salt, and pour on it six quarts of water. As soon as it boils, take off the scum, and put in the beans, having first drained them, and a head of celery, cut small, or a tablespoonful of pounded celery seed. Boil it slowly till the meat is boiled to shreds, and the beans all dissolved. Then strain it through a collander into the tureen, and put into it small squares of toasted bread, with the crust cut off. Some prefer it with the beans boiled soft, but not quite dissolved. In this case, do not strain it; but take out the meat and bones with a fork.

Miscellaneous.

RURAL MANNERS OF ENGLAND.

Although England abounds with misery, and too much gilded show yet there is much that is beautiful and benevolent.

The true English gentleman, living, remote from the din of cities, and abstracted from the turmoil of political life, upon his own acres managing his own estate; seeking the best means for its improvement, and superintending, under his own personal inspection, their application; doing what good he can to all around him; making those dependant upon him comfortable and contented; giving labor, counsel, encouragement, and all needful aid, to his poor neighbors, and causing them, and their wives, and their children, to look up to him as a friend and a parent, to whose kindness their good conduct is always a certain claim: whom when the eye sees, it sparkles with grateful joy, and when the ear hears his footsteps, the sounds go like melody to the heart; who is in his neighborhood the avowed and unostentatious supporter of good morals, temperance, education, peace and religion; and in whose house you find an open-hearted hospitality and abundant resources for innocent gratification, and for the improvement of the mind, with a perfect gentleness of manners, and unaffected piety presiding over the whole:—I say, such a man—and it has been my happiness to find many examples—need envy no one save the possessor of more power, and a wider sphere of doing good; and need not covet the brightest triumphs of political ambition, nor the splendors and luxuries of royal courts.

Whatever contributes, then, in any way, to elevate the agricultural profession, to raise it from a mere servile or mercenery labor, to the digniy of a liberal profession, and to commend it not merely for its profit and usefulness, but as a delightful resource and recreation for a cultivated mind, will certainly find favor with those who form rational views of life. who wish well to the cause of good morals, and would multiply and strengthen the safeguards of human virtue.

The class of individuals whom I have described—and I assure my readers I have drawn from real life and deal in no fictions—find often their own efforts seconded and aided by those whose encouragement and sympathy always give new life and vigor to their exer-

tions, and new pleasure to their pleasures,—I mean their own wives and children; and the farming operations, in all their history and details, and all their expediency and fitness, are as much matter of familiar and interested discussion at the fireside, as, in many other circles, the most recent novel, the change in fashion, or the latest triumph of party.—Indeed I have seen in many cases, the wives and the daughters—and these, too, often persons of the highest rank and refinement—as well acquainted with every field and crop, their management and their yield, and with every implement and animal on the place, as the farmer himself; and I always put it down to the credit of their good sense. —[Coleman's Tour.

FRIENDSHIP.

What finer feeling can reside in the heart of man than that of Friendship? It yields a delight where it is felt, and gives a pleasure not to be found in any other feeling. Love is its basis, and from fraternal love springs all its actions. True friendship, indeed, is rarely to be met with; but even the spurious everyday friendship which we all experience, is pleasant, and passes very well for genuine until called into actual service—then, indeed, its deformities appear. But true friendship is a jewel which cannot be too highly appreciated—too dearly cherished.

Some men are prone, from a natural inherent friendly feeling, to look upon the great bulk of mankind as possessing similar feelings, and to be quite ready to serve any one with whom they have been long acquainted, or from whom they have been receiving little acts of kindness and attention, not doubting that, if they stood in need of like services, they could be obtained as readily from others. If such were the general disposition of mankind, how happy might men be! The cares of life would be rendered light by the kind hand of friendship, and few besides the really worthless would know real distress.

While true friendship sweetens life and molifies its cares, that which is not true, like everything else which bears but a semblance of what it professes to be, adds to the poignancy of the affliction, and aggravates misfortune. He who, in his days of affluence, always felt for the misfortunes of others—whose hand was always open to their relief—who never doubted that, were he similarly situated, they would do as much for him, must very keenly feel the disappointment when, upon suffering the reverse, he finds mankind tardy in rendering to him that assistance which he was wont so freely to give to others. His disappointment is rendered still more keen, when he finds persons to whom he has rendered essential service desert him in the hour of need,—or even such as he has, from long acquaintance, considered friends. At such a time false friendship assumes its real appearance, which is as disgusting as that the true is lovely.—Symbol.

Friendship.

In young minds there is commonly a strong propensity to particular intimacies and friendships. Youth, indeed, is the season when friendships are formed, which not only continue through [illegible] life, but which glow to the last, with a tenderness unknown to the connexions begun in cooler years. The propensity, therefore, is not to be discouraged, though, at the time, it must be regulated with much circumspection and care.

Too many of the pretended friendships of youth are mere combinations in pleasure. They are often founded on capricious likings, suddenly contracted, and as suddenly dissolved. Sometimes they are the effect of interested complaisance and flattery on the one side, and of credulous fondness on the other. Such rash and dangerous connexions should be avoided, lest they afterwards load us with dishonour.

We should ever have it fixed in our memories, that by the character of those we choose for our friends, our own is likely to be formed, and will certainly be judged of by the world. We ought, therefore, to be slow and cautious in contracting intimacy; but when a virtuous friendship is once established, we must ever consider it as a sacred engagement.—[Dr. Blair.

Civility.

This is the opposite of rudeness, and in its practical manifestation gives evidence of good breeding, gentleness of disposition, kindness of feeling, and goodness of heart. They who manifest the possession of those attributes always attract the kind regards and secure the warm affections of all who come within the sphere of their influence. Flowers spring up in their footsteps, and sunshine illumines their brow; their advent brings with it peace and pleasure, and their departure leaves behind a sense of serene enjoyment. It is easy to be civil, if one will but be so. Practical civility calls for no

sacrifice on the part of the morally good, the really well-bred, or the truly right-minded. These find their own happiness in that which they create and diffuse around them, and which constitutes a moral atmosphere delightful to inhale. They live in a region of agreeable influences, and fertile of delicious moral sensations, entirely unknown to the rude and uncivil, whether these are so by nature, or made so by a false and vicious system of moral training.

THE SHEEP IN ITS VARIOUS FORMS.

Wise men regard with suspicious eye the assertions of those who profess to accomplish a variety of dissimilar effects by a single cause. It is customary to be jealous of the pretensions of "Universal Restorative," "Heal All," or any other panacea warranted to cure diseases of all symptomsor all origins. And the proposal *to adopt one breed of sheep to all circumstanes* of food, climate, and situation, making it answer all the purposes for which sheep are usually employed, seems justly to meet with similar distrust and suspicion.

From the varied habits of sheep, the widely different circumstances in which they are placed, and the opposite results which the several kinds are intended to produce, we are at once led to doubt the practicability and value of the scheme. We are induced still further to view the proposition as contrary to the order of Nature, when we consider the fact that there is scarcely any animal which appears under so many forms as the sheep. In Persia and other parts of the east it is found with a tail of twenty pounds weight; at the Cape of Good Hope the tail is worth as much as all the rest of the carcass; there and in other parts of Africa the sheep have clusters of horns, to the number of five or six; in Madagascar the same horns and tails are to be seen, the ears hanging down like those of a hound; about Auregabad, between Agra and Bengal, they are found without any horns at all, but so strong that, being bridled and saddled, they will carry children of ten or twelve years of age; the so-called sheep of Chili somewhat resemble camels, being hair-mouthed and hunch-backed, and they are used for carriage and field labour; those of China are small, with short tails, which, however, are a lump of fat; Tercen, in his voyage to Surat, mentions sheep with bent snouts and pendent ears, with wool more coarse and stiff than goat's hair; in Africa, to the north of the Cape of Good Hope, they never eat grass, only succulent plants and shrubs; in Thibet the sheep have large broad tails; in Natolia these tails are laid in carts on wheels; in Anspach, in Germany, a small sort exist that are shorn twice a year, and also lamb every spring and autumn; in Juliers and Cleves, also, they are said to lamb twice a year, and bring two or three at a time—five sheep have brought twenty-five lambs in a year; on the slave coast of Africa, the sheep have no wool, "but," says the old Dutch traveller, Bosman, "the want is supplied with hair, so that here the world seems inverted, for the sheep are hairy and the men are woolly"—this hair forms a sort of mane, like that of the lion, on the neck, and the same on the rump, with a bunch at the end of the tail; the Javanese sheep have tails weighing occasionally forty or fifty pounds, having a coat of red and white hair; four-horned sheep are numerous in several parts of Tartary, and a few have six horns, with wattles under the throat.—[Agricultural Gazette.

APPLYING DUNG TO WHEAT.

The operations of life are on the surface of the earth, and the most plausible theory of the food of plants supposes that it is derived as much from the atmosphere as from the soil. We may also infer that new elements will be produced from the manure and the air, and which may be imbibed by plants. From these grounds, I have long been of opinion that the farm-yard dung, which is now laid on the bare fallows for wheat, might be more beneficially applied as a top-dressing in March on the growing plants. The dung being evenly and thinly spread over the land, it may lie for one or two months; and being harrowed, it will form a top-dressing for the plants, of no common value, of the minute particles of dung and soil, and a bed for grass-seeds of a sort they never receive. A matrix of different substances, in a finely reduced and comminuted state, resembles the "alluvium" of nature, in which plants so very much delight to grow.

J. D.

A GUDE PROVERB.

The Scotch have this proverb: "A gude word is as soon said as an ill one." Will not every child, when he hears others use profane, indecent, ill words, or is tempted to use them himself, remember that "a *gude* word is as soon said as an *ill* one?"—[Well-Spring.

Progress of Industry and Harmony of Labour.

This, then, is the grand moral lesson of the hour — THE PROGRESS OF INDUSTRY AND THE HARMONY OF LABOUR. That PROGRESS is already proved and illustrated when this society remembers, on the one hand, what its fathers saw, and what they did, and on the other, casts its eye on the exhibitions, and gathers up the instructions, of this day. That HARMONY, in interest and growth, in sentiment and purpose, is substantiated by this present re-union of all the sons of labour at this annual civic triumph. These exhibitions are teaching us that we are all producers and all consumers. These holidays are proving to us that the circle of all business and all pursuits is a charmed circle, and that a single jar anywhere spreads discord and disaster through the whole. There is no such thing here as an isolated interest, nor any such man as an isolated labourer. In the formation and growth of communities, labour divides and subdivides itself—to the end, not that this pursuit or that may become easier or more honourable than the other, but that each and all may be the more profitable and the more productive. Would you say that the divisions and subdivisions of human invention in the machinery we have witnessed to-day, with all their nice and varied improvements from year to year, involve any encroachment on the rights of labour? Neither with any more truth would you maintain that any fixed department of human pursuit, whether of the hand or the head, in the field or the shop, in the counting-room or the office, could be stricken out without imparting disturbance to the whole. There is one harmonious idea running through the whole scheme and the whole fabric of society, the whole theory and the whole practice of the world—and that is, increased profit and increased production,—greater capacity for producing, sustaining, educating, advancing the race. The small and despised stream which flows through the heart of this city, is a wiser witness and a more liberal philosopher than we. What growth, and upbuilding, and expansion of industry has it not witnessed! It very early beckoned to its banks a scattered, humble, dependent colony of mechanics. It kept them up through prosperous and adverse fortune, till now a score of smoking shafts penetrate the sky, and from the reservoir on the north to its southern outlet, its banks are vocal with the hammer and the axe, the whirling wire and the building machine, the forming plough and the noisy plane, the fierce glow of the furnace and the heavy working of iron, the whiz of the car-shop and the crack of the pistol—while a host of children, whom no man can number, look towards it in the morning and in the evening for their daily bread. If I were to call upon this productive rivulet for its testimony, what, think you, would it be? Why, to be sure, that the wire-mak and the machine-builder combined to supply t cotton and woollen mill—that the plough-mak furnished his wares for the whole agricultu world—that the iron man, with his five or s scores of hands, was at work for every body and so on to the end of the chapter, concludi with this essential and impressive fact, that this community has increased from year to ye new churches and new schools, a little m counsel and a little more medicine, yet ot stores for wholesale and retail, more boardi houses, and shoe-shops, and tailors and hatte and grocers, and dress-makers, were demand and came in upon us, till the town has beco what we behold it to-day—all helping one a other. AND THE FARMER FEEDING THE WHOLE. hold him to be a suspicious friend who wo scatter the seeds of dissension where Provide and natural causes have established a conn dence of interest; and against his testimony place that ever speaking and benevolent stre as it carries down to the waters of the Bla stone, to be diffused over yet larger communi between this and the Bay of the Narragans that large, universal truth of American lif THE HARMONY OF LABOUR.—[Bullock's Addr before Worcester Ag. Society.

Maxims of Washington.

Every action in company ought to be wi some sign of respect to those present.

Speak not when others speak, sit not wh others stand, and walk not when others stop.

Be no flatterer; neither play with any c that delights not to be played with.

Let your countenance be pleasant, but in s rious matters somewhat grave.

Show not yourself glad at the misfortune another, though he were your enemy.

In writing or speaking, give to every one h due title, according to his degree, and the cu tom of the place.

Strive not with your superiors in argument but always submit your judgment to others w modesty.

Undertake not to teach your equal in the ar himself professes; it savors of arrogancy.

Being to advise or reprimand any one, co sider whether it ought to be in public or pri presently or at some other time, & in what te to do it; and in reproving, show no signs choler, but do it with sweetness and mildne

Wherein you reprove another, be unblam yourself; for example is more prevailing t precept.

Be not hasty to believe flying reports, to disparagement of any one.

In your apparel be modest, and endeavour to accomodate nature more than procure admiration. Keep to the fashion of your equals, such as are civil and orderly, with respect to time and place.

Associate yourself with men of good quality; if you esteem your own reputation; for it is better to be alone than in bad company.

Utter not base and frivolous things among grown and learned men; nor very difficult questions or subjects among the ignorant, or things hard to be believed.

Be not forward, but friendly and courteous, the first to salute, hear, and answer; and be not pensive when it is time to converse.

Gaze not on the marks or blemishes of others, and ask not how they came. What you may speak in secret to your friend, deliver not before others.

Think before you speak; pronounce not imperfectly, nor bring out your words too hastily, but orderly and distinctly.

Treat with men at fit times about business, and whisper not in the company of others.

When you speak of God or his attributes, let it be seriously, in reverence and honour, and obey your natural parents.

Female Education.

"She has finished her education," says my friend. Finished her education, said I; just as though a young lady's education was a stocking or a bonnet, and now it was to be placed in a bandbox, to be displayed to visitors, and to be worn only on set occasions. I protest against the doing up, and finishing off a young lady's education with her 'teens—just at the time when she begins, if ever she does begin, *to think*. A young man has just acquired, at one-and-twenty, the elements of education, and is prepared to study advantageously according to his own direction; but a young lady has done—finished—the circle of her sciences is complete, and she is ready for any situtation for life that may be thrown in her way. Now, why, in the name of common sense, may not a woman *think;* and if she may think, why may she not study, and acquire profitable food for thought? There is a lady of whom I have some knowledge, that finished her education" by having peculiarly good advantages at an early age. She is now a wife, and mother of six children. She plays well upon the piano, sings sweetly, but her husband must, and actually does, put all the children to bed, and has the care of them through the night. And as for her table, the bread is execrable to one who has ever visted his grandmother's pantry; and her coffee, oh! her coffee! it would cost her head if it reached the Grand Turk's palace; and yet the lady has a "finished education."—[Selected.

MUSIC.

Every woman who has an aptitude for music or for singing, should bless God for the gift, and cultivate with diligence, not that she may dazzle strangers or win applause from a crowd, but that she may bring gladness to her own fireside. The influence of music in strengthening the affections is far from being perceived by many of its admirers; a sweet melody brings all hearts together, as it were with a golden cord, it makes the pulse beat in unison, and the heart thrill with sympathy. But the music of the fireside must be simple and unpretending, it does not require brilliancy of execution, but tenderness of feeling—a merry tune for the young, and a more subdued strain for the aged, but none of the noisy clap-trap which is so popular in public. It is a mistake to suppose that to enjoy music requires cultivation; and the degree of enjoyment will, of course, vary with our power of appreciation, but like all other great influences, it is able to attract even the ignorant, and this is what the poets taught when they made Orpheus and his brethren the civilizers of the earth. In cases where musical instruments are not within reach, we may modulate our own voices and make them give forth sweet sounds, we may sing those simple strains which require neither teaching nor skill, but which, if they come from one heart, are sure of finding their way into another.

POLITENESS.

Be polite at all times, and to all persons. Remember that you will lose nothing by thus doing; you will be more respected, and certainly more beloved, than you will be if you are in the habit of answering in an abrupt or unkind manner. It will also render you *happier* to do this; for if polite yourself, you will generally meet with politeness in return; and if you do not, you will still have the inward consciousness of having yourself acted correctly.—[Well-Spring.

THE BAROMETER.

Torricelli invented, and Pascal perfected this instrument, and it is of great use, not only in foretelling the changes of the weather and thus saving the lives of navigators, and preventing the loss of millions of property on the ocean, but also in enabling us readily to ascertain the

height of mountains, or of any other situation to which it can be taken.

This instrument falsifies the ancient maxim that "nature abhors a vacuum." The barometer is constructed upon the principle of atmospheric pressure. The atmosphere on a clear day will support in a vacuum a column of mercury 30 inches in height. It is therefore ruled in this height in the tube by the pressure of the atmosphere, and this is the reason why the barometer is not affected in houses to indicate the nature of the weather. The barometer is employed to measure heights, as the mercury falls the higher we ascend. The rising mercury indicates the approach of fair weather, and the falling mercury indicates foul weather. No captain should go to sea without a good barometer, and the vertical kind are the best. There is no person but can easily make one for himself. —[Scientific American.

AID CHILDREN IN THEIR STUDIES.

The good mother, or other discreet member of the family, can do much to encourage children in their studies. Even when the parent is not well skilled in the branches the child is attending to, she may exercise a powerful influence by showing to the child that she is interested in its success.

If children sit down to what they consider a task, and see no other member of the family attending to study, or taking any interest in their progress, it may be irksome, especially when all the rest of the family seem to be free from care or labor, and enjoying life in a cheerful manner, apparently without the labor of thought or reflection.

Many are qualified to aid children essentially in their studies, and all have the power of encouragement, which often operates like a charm upon the juvenile mind, and causes difficulties that loomed up to a discouragement in the distance, to diminish or vanish away, on near approach, or familiar acquaintance, through the aid of a kind friend.—[New England Farmer.

HABIT.

Parents should endeavour to form good habits in their children—it makes all difficulties easy. Make sobriety, says Lord Brougham, a habit, and intemperance will be hateful and hard; make prudence a habit, and reckless profligacy will be as contrary to the nature of the child grown or an adult, as the most atrocious crimes are to any of your lordships. Give a child the habit of sacredly regarding the truth, of carefully respecting the property of others, of scrupulously abstaining from all acts of imprudence which can involve him in distress, and he will just as likely think of rushing into an element in which he cannot breathe, as of lying, or cheating in selling.

To found these habits in children, however, is no easy task. But there are many men of splendid minds, whose lives exhibit great struggles to break up and overcome bad habits formed in youth either by parental neglect or indulgence.—[Scientific American.

ECONOMY IN SLEEPING.

It is difficult to determine how long a person should sleep, as different persons differ constitutionally, some requiring more sleep than others. But one thing is certain—that some boys sleep far more than is necessary, lying in bed eight or nine hours, when seven would be sufficient. Some lie so long that they become fatigued and tired with inaction.

If a boy sleep an hour too much each day, he will lose fourteen or fifteen days in a year, which will amount in ten years to nearly half a year: in fifty years, to more than two years. This is an important subject. Life is short, and we have a great deal to do in this brief period. How absurd, then, to waste in indolence, in a dormant, senseless state, so large a portion of precious time, which can never be recalled!

If a person would excel in any pursuit, either in business or study, he must husband his time and sleep no more than is necessary for refreshment. The object of sleep is to give rest to the body and mind, and fit them for renewed and vigorous action; and he who sleeps merely to kill time or waste it, that it may not hang heavy on his hands, is indulging in a habit that will become so fixed, after a while, that it will give character to the whole boy and future man.

Let every boy consider whether he is wasting in bed the most precious hours of his life, and estimate on the loss. Let him calculate how much he might earn, or what useful branch of study he might pursue, in the time now wasted in sleep—in a state of oblivion. Thousands of persons who shudder at the terrible thoughts suggested by the doctrine of annihilation, practise every day upon that very principle at which the soul recoils with horror.—[New England Farmer.

Opinion of Dr. Watts.

Among the accomplishments of youth, there is none preferable to a decent and agreeable behaviour among men, a modest freedom of speech, a soft and elegant manner of address, a graceful and lively deportment, a cheerful gravity and good humor, with a mind appearing ever serene under the ruffling accidents of life.

man life. Add to this, a pleasing solemnity of reverence when the discourse turns upon any thing sacred and devine; a becoming neglect of injuries, a hatred of calumny and slander, a a habit of speaking well of others, a pleasing benevolence and a readiness to do good to mankind, a special compassion to the miserable, with an air and countenance in a natural and unaffected manner, expressive of all these excellent qualifications

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FORCE OF CHARACTER.—Man imputes to himself the ability to be constant by his own proper force, and places his honor in that ability. A man of his word, and a man of honour, are synonymous terms. He who can embrace a purpose and persist in it, who can act from a resolve, unsupported by present inclination, nay, even in opposition to present inclination, emotion or passion, of him we say, "he has a character," "he is a man." We despise the man who is always only what things, accidents, circumstances, make of him; the fickle, the inconstant, the wavering.—We honour him who can resist objects, and the impressions which they make upon him, who knows how to maintain himself in the face of them, who lets himself be instructed but not changed by them.

USE OF ADVERSITY.—Do not expect nor desire continued prosperity. A good spice of adversity is the very thing you need, to give strength, vigour, and elasticity to the mind, and, in fact, to mature and perfect the whole man, body and soul. Sun and shade, wet and dry, cold and heat, are what is wanted to produce and ripen good fruit. A few storms only serve to make the tree root the deeper and stand the firmer. Hard rubs will polish the diamond and make it shine more brilliantly. Brushing will purify the garment and make it all the better.

AGRICULTURAL ASSOCIATION OF UPPER CANADA.

The annual general meeting of the directors of this important society was held, pursuant to public notice, in the Court House of the city of Toronto, on Wednesday, 21st inst.—Mr. Sheriff Ruttan of Cobourg, the President of the Association, in the chair. Several important matters were disposed of, and arrangements made for conducting the proceedings of the Association for the current year. Among those, we may mention the appointment of the following gentlemen as a sub-committee of management at Kingston, where the next show will be held in September.

J. B. MARKS, Esq., Vice-President of the Association.

ANGUS CAMERON, Esq. Chairman of the Wolfe Island Agricultural Society.

PETER DAVY, Esq., Chairman of the Earnestown Agricultural Society.

HENRY SMITH, Esq., M.P.P., for Frontenac.

DR. BARKER.

WM. FERGUSON, Esq., Chairman of the Pittsburg Agricultural Society, and Treasurer of the Midland District—*Treasurer.*

G. A. CUMING, Esq., Treasurer of the Pittsburg Agricultural Society—*Secretary.*

The Hon. Adam Fergusson being present, and on his way to Montreal, was requested, in conjunction with J. Wetenhall, Esq. M.P.P. to urge upon the Government, the justice and expediency of allowing a liberal grant of money, to enable the Association to discharge all its outstanding liabilities. It was also resolved, that the President address a circular to the agricultural societies of the different districts, urging upon them the importance of contributing to the funds of the Provincial Association. A vote of thanks was passed to the late executive committee at Cobourg, for the very liberal and successful manner in which they sustained the last exhibition of the society in that town. It was likewise detetermined, that the Secretary, Mr. Buckland, be instructed to draw up a concise report of the origin and progress of the association; and that the directors take such means as will so enable the Financial Committee to meet all the demands against the society. A few individuals in the Huron District have set a praiseworthy example, by subscribing liberally toward that object; and we trust many others will be induced to do the same. £500 are required to place the Association in a healthy condition. The directors adjourned the meeting to the first Wednesday in May, to be then held in the city of Kingston.

RATE OF WAGES IN GREAT BRITAIN.

We copy the following article from the Lowell Courier. The writer, Mr. Aiken, is agent of the Lawrence Mills in Lowell:—

During the autumn of 1847 I visited Europe, and, while in Great Britain, spent several weeks in the manufacturing districts. I was admitted with entire freedom to the

linen factories at Belfast, Ireland; to the machine shops and cotton factories at Greenock and Glasgow, in Scotland; to a large woollen factory at Leeds; to several of the machine shops and cotton mills at Manchester; to a lace factory at Derby; and to the shops at Sheffield and Birmingham. All the processes in the several manufactories were shown to me, and all my inquiries were answered without reserve and to my entire satisfaction. The rate of wages paid to the operatives and the cost of production were of course points which I could not overlook. I was uniformly attended by the proprietor or manager of the factory, and the information received was immediately noted on my memorandum book, from which I take the following particulars regarding wages:

The operative in all cases boards himself out of the wages paid.

In the linen mill at Belfast, wages from 11d. to 13d. per day; average 6s. a week; equal to $1 44.

In the cotton mills which I visited at Greenock and Glasgow, in Scotland, wages ranged from 4s. to 8s. 6d. sterling a week; average not over 7s. 6d.; equal to $1 80.

In the large woollen mill at Leeds, wages ranged from 6s. to 10s. sterling a week; average not over 9s.; equal to $2 16.

In the two best cotton factories I visited at Manchester, one of them spinning fine lace-thread from No. 200 to No. 400, and the other spinning No. 40 mule-twist, the average wages paid to men, women, and children, as given me by the proprietors, was 12s. a week; equal to $2 88. At the same time the proprietors informed me that their rate of wages was considerably above the general rate; and, in accordance with this statement, I found in these two mills much the best clothed and best looking sets of operatives I saw in any factories in Great Britain.

As another test of the cost of labour, ascertained from the proprietors themselves who, in some instances, submitted to my inspection their private weekly minutes of cost, that No. 40 mule-twist was produced and packed for market at a cost of 2d. per pound on labour. And this embraced mechanics and all other labour employed about the establishments.

Skilled labour is also much cheaper in Manchester than in Lowell. In one mill much larger than the new mill of the Merrimac Company, I was informed that the head overlooker, having a general superintendance of the whole mill, received £3 a week, equal to 240 a day; and the overseers of particular rooms from 27s. to 30s. a week, equal to $1 08 and $1 20 per day.

My general conclusion was that labour in the cotton manufactories in Manchester was at least thirty-three per cent, and in the woollen at Leeds at least fifty per cent cheaper than similar labour, at the same time, at Lowell. Very respectfully,

JOHN AIKEN.

MARKET PRICES.

		TORONTO, February 28.				MONTREAL, February 28.				NEW-YORK, February 24.				LIVERPOOL, February 10.			
		s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	St'g.	s.	d.	s.
Flour	196lbs.	17	6	21	3	24	6	24	9	28	1	28	4	barrel.	26	0	27
Wheat	60lbs.	3	6	4	6					5	7	5	9	70lbs.	6	4	7
Oats	34lbs.	1	1	1	3					1	9	2	0	65lbs.	0	0	0
Rye	56lbs.	3	0	3	4					3	3	3	4				
Barley	48lbs.	1	8	2	0					3	0	3	3	per qr.	0	0	0
Corn	156lbs.									3	2	3	3	per qr.	29	6	32
Peas	60lbs.	1	6	1	10½					3	8			per qr.	0	0	0
Pork, mess	barrel.					75	0			50	9	55	0				
" prime	"					41	3			49	4	50	6				
" fresh	100lbs.	17	6	22	6	25	0	28	9								
Beef, mess	barrel.									57	6	62	6				
" fresh	100lbs.	12	6	20	0	20	0	27	6								
Hams	1lb.	0	5	0	6					0	3½	0	5½				
Bacon	1lb.	0	4	0	5					0	4½	0	5½				
Cheese	1lb.	0	3½	0	5	0	6	0	7½	0	4	0	4½				
Butter	1lb.	0	8	0	10	0	10	1	0	0	9	0	11				
Potatos	bushel.	2	6	3	0	2	0	2	6								
Wood	cord.	10	0	12	0												
Pot Ashes	barrel.					27	6			32	2	35	0				
Hay	ton.	50	0	65	0												

NOTE.—The d... upon wheat and ... kinds of grain is ... fixed at 1s. per q... ter on wheat and ... kinds of grain, & ... per barrel on flou... Indian meal; and ... *quotations* are ... *paid*.