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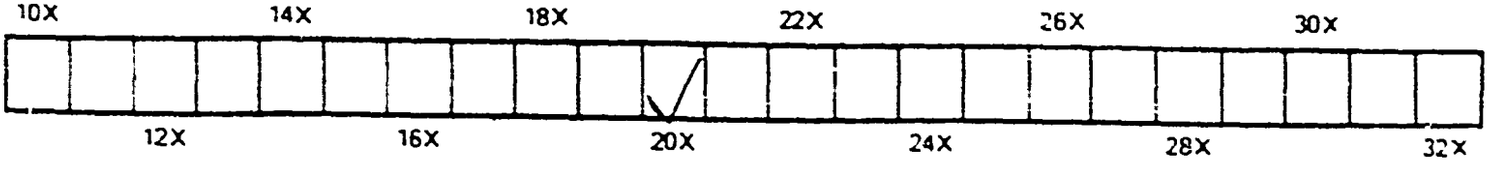

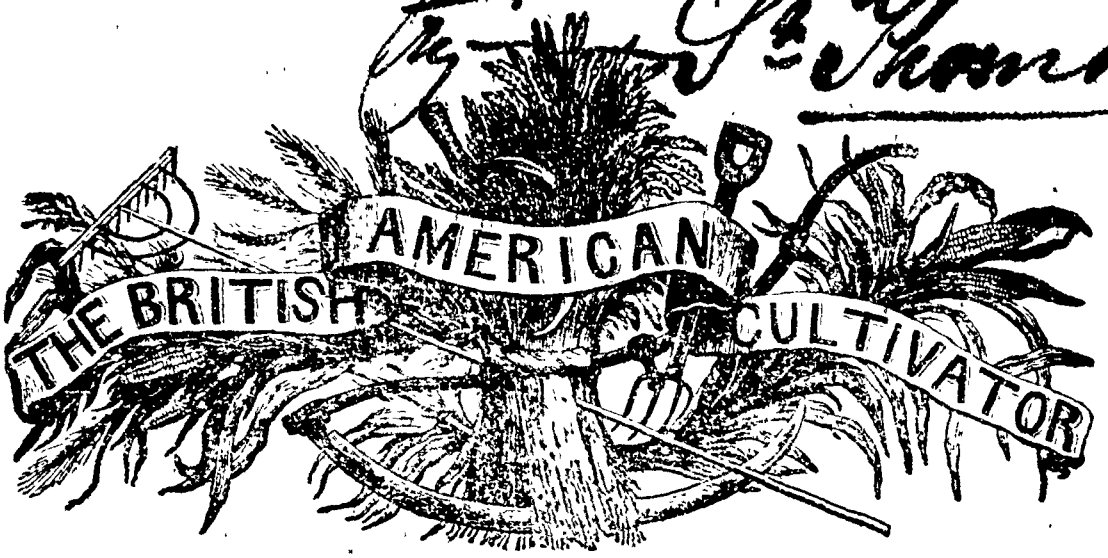

"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own."

NEW SERIES.] TORONTO, JUNE, 1845. [VOL. I.—No. 6.

WORK FOR THE MONTH.

The work to be executed this month will, in a large degree, depend upon the size and character of the farm and the ability and intelligence of the proprietor in executing needful improvements;—and therefore any general directions that may be given, will only in certain cases be applicable; but it is to be hoped, from the many seasonable hints that are advanced, that each subscriber to this journal will find a few that will be profitably practised. By the close of the first week in this month, the potato planting will be completed, and the ruta baga and other root crops will be sown, and the majority of farmers will fancy that there is scarcely anything more to be done upon the farm until the commencement of hay-harvest; now nothing is more preposterous than this, for any correctly observing farmer must be aware that many of the operations that can be better executed at this season of the year than any other, are of the greatest importance upon a well-tilled and properly organised farm. An outline of a few of such operations may prove interesting to a portion of the readers of the *Cultivator*.

The Summer-fallows, if not already broken up, should be ploughed forthwith; and wherever practicable, the manure should be ploughed in with the first furrow, which should not be deeper than four inches. By ploughing the first furrow as shallow as it can possibly be turned, and at the same time neatly covering under the manure, the decomposition of the manure, crude vegetable matter in the soil, root weeds, and especially couch or spear grass will be greatly promoted. The second ploughing should not take place until the inverted grasses or weeds become thoroughly destroyed by fermentation, which is generally the case if the fallows be broken up in the autumn, or even in the early part of this month, by the middle of July; and on all soils, except a light drifting sand, great advantage would result from cross-ploughing from ten to twelve inches in depth. This is a [illegible] ter depth than what is usually [illegible] d; and if

would be well for the advocates of *thin* ploughing to make an experiment in *deep* ploughing, while crossing their fallows in July.

Underdraining such portions of the fallows as are subject to a redundancy of water in the fall and spring, would be an improvement that would pay a heavy *bonus* upon invested capital and skill; and at no season of the year can this labour be done to greater advantage than this. The drains should be carried to the depth of thirty inches, and the materials employed in their construction may be cedars, stones, or brushwood, as would best suit the views and circumstances of the operator.

Stones should be removed off the fallows, and all other obstacles that might be impediments to clean and neat culture.

The long manure in the barn-yard, that is not required or fit for the fallows, should be well turned in the yard, or drawn into the field where it may be required for use, and thrown up into large heaps to ferment; it would add greatly to the value of such manure, if layers of alluvial soil were laid through the heaps, which would not only improve the quality of both barn-yard manure and the mould, but would to a very great extent increase the amount of manure, which may truly be said to be the farmer's mine, if skilfully applied to the soil.

Canada thistles, and other noxious weeds, should be exterminated; and to do this effectually, on land that has been improvidently cultivated for a series of years, will require a large degree of skill and patience. On many farms, there are only patches of those pests to the cultivator, and in such instances there need be but little trouble in getting rid of the evil. The most simple and effectual plan is to plough those patches as deep as the strength of the team will allow, as often as once per fortnight, during the months of June, July, and August, and if time would admit, more frequent ploughings would do no harm; wherever this plan is practised, the Canada thistle plants will be thoroughly eradicated. Where only a few plants are to be found, those may be removed directly after a heavy fall of rain, by pulling them up with a pair of forceps, or with the hand covered with a leather glove. But where whole fields, farms, and neighbourhoods are covered with this troublesome weed, it is a most difficult business to cultivate the land with any satisfaction, as it is almost a hopeless task to get rid of the pest, unless a united effort be made by every cultivator whose farm is in the least infested with it.—In fact, nothing short of a vigorous and united effort, and a thorough system of culture will exterminate Canada thistles when they have full possession of the soil. This however can be accomplished only by a better system of husbandry than is to be met with in any part of Canada. The leading features of this system is clean and deep ploughing, rowing, and horse-hoeing every crop grown upon the farm, except clover. The particular crops grown, and the rotation practiced may to a great extent be governed by the quality and richness of the soil, but so far as noxious weeds are concerned this is a matter of no importance. It is useless to multiply suggestions upon this branch of improvements, as but few if any are prepared to practice what have already been urged upon their attention. One thing is certain, that no system of husbandry can long be profitably carried on, unless a part of the system be calculated to destroy the weeds, which are injurious to agriculture. This fact should be borne

in mind by all, and those whose farms are yearly getting more foul with noxious weeds, should lose no time in changing their mode of cultivation, and substituting therefor the one that is here recommended, or some other that will effect the same object.

Removing stumps and logs from land.—It is truly lamentable to see the neglect that is practiced in this particular in sections of country that have been cultivated for the last forty years. If only a few acres of this half cleared land were thoroughly cleared each year, the appearance and value of the farms that require this improvement would be greatly enhanced. This matter is of so much real importance, and would add so much to the respectability of the farm, that it is to be hoped the spare time will be employed in eradicating stumps and burning the same, as well as useless trunks of trees, brush, and other annoyances that encumber the pasture, fallow-fields, and timbered ground.

Garden grounds.—If any have been so unfortunate, or so indolent, as not to have erected a neat and substantial board or paling fence around their garden, orchard, and door yard, it is certainly a good time to begin to think seriously of the matter. The expense of a few hundred yards of neat fence built with boards, and studded with fruit and ever-green trees, would be trifling indeed, compared with the benefit and comfort it would entail. Where suitable material, for posts and boards can be had at a reasonable price, a few hundred yards of neat post and board fence might be built each year on the boundary of the farm, and were this plan practiced a few years, an ordinary sized farm would be completely enclosed with this style of fence, which would add a much greater value to the farm than the trouble and cost of erecting it. These matters should not be passed over slightly with those who are desirous of elevating the standard of Canadian agriculture.

The garden will require the closest attention during this month, and any farmer who neglects this department of husbandry, deserves the appellation of sluggard. It is to be hoped, that none will be so regardless of the comforts of their family, as well as their own personal and pecuniary interests, as to allow the weeds to overrun the garden and door yard.

A few suggestions upon road-making, management of fruit trees, liming and marling land, and making compost heaps, as well as some other subjects of importance, would have been made in this place had time permitted; but as the first-mentioned topics have been liberally treated in former numbers of this magazine, their absence in this number will be a matter of minor importance.

To Sweeten Rancid Butter.—The *Echo du Monde Sevant*, says—"An agriculturist in the neighborhood of Brussels, having succeeded in removing the bad smell and disagreeable taste from the butter by beating, or mixing in fresh water with chloride of lime, he was encouraged by this happy result, to continue his experiments, by trying them on butter so rancid as to be past use; and he has restored to butter, whose odor and taste were insupportable, all the sweetness of fresh. This operation is extremely simple and practicable to all; it consists in beating the butter in a sufficient quantity of water, in which, put 25 or 30 drops of chloride of lime to two pounds of butter. After having mixed it till its parts come in contact with the water, it may be left in it for an hour or two, afterwards withdrawn, and washed anew in fresh water. The chloride of lime having nothing injurious in it, can, with safety, be augmented; but after having verified the experiment, it was found that 25 or 30 drops to a kilogramme of butter were sufficient.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

We notice in a late number of the *Agricultural Gazette*, that the list of prizes of the above society, for agricultural implements, amount to the very liberal sum of £300 sterling. The amount of invested capital belonging to this association, equals £8,200, besides £1,296 in the banker's hands for the use of the society. The inducements held out to carry out improvements in agriculture, by the Royal Agricultural Society of England, have had, and still will have a powerful influence upon the agricultural prosperity of that devoted country.

When district and township societies are organized and in a healthy state of operation in Canada, a Provincial Association would have the effect of producing similar results in favour of Canadian agriculture to those that have been experienced by the National Society of England. Our confidence is gaining ground that such an institution will be in operation in Canada before the close of the present year. But the whole matter will rest solely upon the success of the friends of agricultural improvement in organizing district and township societies. A liberal provision is now made for such institutions, and unless the people evince a desire to sustain local societies, it is fruitless to hope that they would exert their influence in favour of a general or Provincial Association. We hope to see an agricultural society in each township that is capable of sustaining such institutions, and it would be highly creditable to Canada, if a general movement in their organization could be made the present season. Recollect that each township society, under the new act, receives a share of the *one thousand dollars* of government bounty granted to each district, in proportion to the amount of its subscription; and that by the societies collectively raising only *two hundred dollars*, they will be entitled to the full amount of bounty granted to each district.

We wish it to be understood that we are anxious to see a provincial society established, but not until we can be made satisfied that a pretty general co-operation of the wealth and influence of Canada could be enlisted in the cause.

TO CORRESPONDENTS.

The most interesting department of an agricultural journal is its original correspondence, provided that the contributors endeavor to make their papers useful, by reporting plain matter of fact experiments in agriculture, or such other branches as properly belong to such a journal. Up to this period there has been an unaccountable remissness on the part of the Canadian farmers in contributing the results of their experience for the benefit of their fellow-farmers;—and we have almost concluded that it is useless to make further appeals to stimulate them to engage with us in endeavouring to improve the condition of the industrial classes of this naturally highly favored country. But as the work on our part will be prosecuted with increased vigour, and we trust a corresponding salutary effect upon the productive interests of the province, it is truly desirable that such of the Canadian farmers as are capable, should assist us in preparing original and useful articles for the benefit of the people. It might not be out of place to quote a paragraph from the leading article of the *London Agricultural Gazette*, to corroborate the assertion just made respecting the importance

of an extensive correspondence to enrich the columns of an agricultural journal:

"In closing our first Volume, we take the opportunity of heartily thanking those who have contributed to its pages. It is on its practical Correspondents that an Agricultural Periodical must depend for its real value. Its Editor may certainly speak authoritatively when he treats of the *principles* of the art; but when he descends to any department of its *practice*, he can only state his personal experience, and the circumstances under which it was acquired, and then he only occupies the situation of one of his own correspondents. We say again—it is on the number and qualifications of *these* that the value of an Agricultural Journal must depend. That periodical is necessarily the most useful whose pages are filled with communications of the experience of its readers in all the various circumstances of soil, climate, &c., to be met with in the district where it circulates. We can say, without boast, that we have readers on all the varying soils, and in all the different climates to be met with in the three kingdoms, and if we could induce a greater number of them to state the agricultural experience of their respective neighbourhoods, the usefulness of the *Agricultural Gazette* would be much increased. For, as we said at the beginning of the year—*then* only shall we consider ourselves to have made much progress in the course of usefulness on which we have endeavoured to enter when our readers shall have been brought to consider themselves as the members of one large Farmers' Club for mutual instruction, ourselves occupying the place of the mouth and the ear through which they may communicate with each other. We must continue to solicit our readers themselves to enter upon the great task of mutual instruction. Our columns are always open to *details of facts bearing upon Agricultural practice.*"

We lament that we cannot boast of having such an array of contributors as the *Gazette* has been favored with during its first year's existence, but we hope the day is not far distant when the people of this province will possess more espanded views of what belong to their individual and national welfare, and unite in promoting every enterprise that is calculated to increase the wealth and comforts of the community; and especially that of communicating to their fellow-men, the results of their experiments in agriculture and its sister arts, through such mediums as the *Cultivator*.

The *Albany Cultivator* stands probably at the head of the list of American agricultural periodicals in point of intrinsic merit or usefulness, and its superiority over other similar journals consists in the extent of its original correspondence, the authors of which are principally practical farmers, and of course the matter contained in their communications savour of such things as they best understand. The ostensible editor of this valuable journal knows but little of agriculture practically, but owing to its liberal patronage, has managed to compile a journal which would bear comparison with any similar journal published in the English language. To give our readers some idea of the circulation of this valuable magazine, we would state, that in the month of January last, no less than 8000 subscribers were received, being an increase of 2,500 over the number in the same month for last year.—With a circulation of probably 20,000 subscribers, and a list of upwards of *two hundred valuable contributors*, the *Albany Cultivator* may well take the lead of its fellow cotemporaries. Although we can not boast of tens of thousands of subscribers, nor hundreds of contributors or helpmates to assist in consummating an agricultural reform worthy of so noble an agricultural country as Canada, still we have confidence in looking forward to the period that we shall have both supporters and contributors in abundance to enable us to improve the character of this journal, so that, when its price is considered, it will bear a comparison in point of value, with that of any magazine published on this continent. We cannot, however, work for any satisfaction without means, and we trust that in future there will be no occasion of complaint, either on the score of want of support or practical correspondents.

THE CROPS.

The prospects of the Canadian farmers were never brighter than at present.—Both winter and spring wheat look unusually fine, and in all probability the wheat harvest will come in by the latter part of July. Much of the winter wheat appears too gross, the cause of which must be attributed to the very objectionable practice of heavily manuring for this crop, with crude vegetable matter, upon soils naturally too fertile with this substance. Scores of farmers, whose wheat crops promise them a return of forty bushels per acre, will be greatly disappointed at having to harvest a large crop of damaged straw, giving a yield of some ten or fifteen bushels of an inferior sample per acre; whereas their more skilful neighbours, who have practiced the sound, common sense directions that have been given in the *Cultivator* for the past four years, will have both *straw and corn* in perfection, simply because they have adapted their system of managing the soil to the natural requirements of the wheat plant. Although the wheat crop appears ranker upon the ground than is desirable, still the chance for a good crop is much greater than if the season had been unfavourable to vegetation. The growth of the wheat plants have not been checked, unless in very unfavourable situations, and the result in a great number of cases will be, that the roots will strike very deeply in the subsoil, and convey to the stems and leaves of the plants, silica, potash, lime, and other substances in the subsoil which are calculated to give a hard outer surface, which will counteract the deleterious influence of rust with which this class of plants is so subject. It therefore may be pretty fairly premised that the causes of rust will not operate so prejudiciously upon the wheat crops the present season as has been the case the past six years, and that a greater amount of good wheat will be harvested than usual. The prospects of the spring wheat crops could not be surpassed, where proper attention has been paid to the preparation of the soil, the selection of seed, and early sowing, as was recommended in the March *Cultivator*. If the harvest should come in favorable, there will be a sufficient quantity of spring wheat in the country to bread the whole population of Canada, and a considerable surplus, which should be exported across the Atlantic in wheat, instead of flour, as has been practiced of late years, to the prejudice of the Canada flour trade. There can scarcely be two opinions entertained respecting the great importance of the wheat crop to this colony, but it should be borne in mind, that it is a sure road to ruin for an agricultural country to depend upon only one great staple for export—oats, peas, barley, and the various other grains cultivated in Canada, promise a bountiful harvest.

Fruits, especially apples, cherries and plums, have partially escaped the frosts in this section of the province, and there is every reason to hope for a very liberal product of almost every variety of fruit grown in the country. The extreme southern or south-western townships have been visited with early frosts which destroyed the fruit, and the extreme northern with late frosts, which have done equally as much damage; but the interior townships, extending nearly eight hundred miles in length, have escaped any comparative injury from frosts at the period we are penning these remarks, and the prospect is that of an abundant yield of apples, pears, and stone fruits.

SCIENCE AND PRACTICE OF AGRICULTURE.

In this number will be seen a very sensible letter from the pen of Liebeg, which deserves a careful reading; and we trust that the Canadian husbandmen will not only read, but make it a point to investigate, understand, and practise the noble sentiments it contains. It is frequently asserted by farmers, that their soil is not adapted for certain crops, and at the same time they may unknowingly be in possession of the very substance, at the bottom of some marsh, or in the subsoil within reach of the plough, and this want of knowledge not unfrequently entails the most ruinous consequences. No man deserves the esteem of the agriculturist more than Liebeg; as it is to his researches, and writings that the business of agriculture has been made a science. When the principles of vegetation becomes once well understood by the agriculturist, he may then with confidence engage in perfecting the improvements pointed out by the man of science; but when the whole matter appears wrapt up in mystery, and even the working of the most simple laws of nature, are attributed to chance or improper causes, it is useless, under such circumstances, to expect that persons thus blind and ignorant will engage with any considerable spirit, in the important work of effecting an agricultural reform.

It always was, and we suppose always will be the case, that a much greater amount of manual labor is expended in the production of the common necessaries of life than would be required if the operators understood the causes and effects of their various operations. Science has very liberally lent her aid to art in the numerous manufacturing branches of the day, and at last she has lent her powerful arm to agriculture, in a manner which does great credit to so useful and noble a profession. Any farmer who has thoroughly made himself acquainted with the science as well as the practice of agriculture, will no longer feel that he is engaged in a mineal occupation, but that the cultivation of the soil is the most independent, ennobling, and instructive professions that a man of refined sensibility could possibly engage in. Plants, like living animals, require food to bring them to a state of perfection, and what would be adapted to one class, might prove fatal if applied to others. The science of agriculture very beautifully points out the kinds of food adapted to each; and the farmer who makes himself master of this science, is not only a wiser and better cultivator, but may fairly hope to obtain larger returns and greater profits, than the man who attributes the success and failures of his experiments to the operations of blind chance. A thoroughly clever farmer may manage his soil so, that with one half of the labor usually expended in preparing the ground for a crop, he may obtain fully double the return that would be harvested from the land expensively cultivated. But few would believe this doctrine, but nevertheless it is a fact which has been proved to a clear demonstration in the preparation of the soil for the winter wheat crop in the British Isles. The limits for this article will not admit of a detail of facts to prove the above assertion, but from what we know of scientific agriculture, we would suppose it as rational to calculate that the old fashioned mode of spining and weaving cotton could be made to compete with the modern improved methods, as readily as the old fashioned systems of husbandry could compete with those which the men of science have practiced.

The welfare of this highly favored colony in a great measure depends upon the amount of interest which the Canadian farmers evince in the acquisition of a knowledge of the science of agriculture.

HAMILTON COUNTY AGRICUTURAL SOCIETY.

In a former number of the *Cultivator* notice was taken of the agricultural survey that was instituted by the above society, which is propably the most efficient institution of the kind in the state of Ohio. That mode of collecting and disseminating agricultural facts for the people, was highly applauded by us, and would have been a source of much gratification if the agricultural societies in Canada had followed the patriotic example set them by the farmers of Ohio. It gives us still further pleasure to have it in our power to record the following proceedings of the above institution, in the hope that although no action has been taken in instituting an agricultural survey in Canada, steps may be taken to appoint *Honorary Professors* whose business it will be to deliver periodical lectures upon such branches of scientific agriculture as may be understood, and profitably carried into practice, by the Canadian farmers. We copy the extract from the *Daily Commercial*:—

"In looking over the list of officers for the coming year, we see the Society has appointed several Professors whose duty it is to deliver lectures before the members, upon subjects directly connected with their Professorships and Agriculture. 'There is much wisdom and true policy in such appointments, and we should be gratified to see every horticultural and agricultural society with its professors. This, connecting scientific men, *by professional identity*, with institutions of such nature and objects, has a tendency to secure their active co-operation in the minutia and detail of all that is calculated to advance their interests, as well as to call forth their talents in the illustration of those subjects appertaining to agriculture of a purely scientific character. It will be recollected, that the first regular course of lectures upon Agricultural Chemistry, was delivered by Sir Humphrey Davy, before the Bristol Board of Agriculture; from which beginning, in rapid succession, have sprung those numerous other treatises of similar character, which have so distinguished the present century as the fostering era of enlightened husbandry. In the vicinity of every Agricultural Society in the country there are gentlemen of scientific attainments, who would feel proud of receiving similar appointments, and whose pride of character would induce them to fulfil the devolving duties, from motives emanating from that lofty ambition which teaches the virtuous and the honorable, that among the holiest of human offices is that of doing good. It may be said, that these would be professorships without emolument—true, they would be so; for there are no associations in the country able to annex salaries to them—but they would not be without honor, and though pecuniary advantage would not directly ensue to the professors, yet it would do so indirectly, as it would bring their acquirements within the knowledge of hundreds, nay, thousands, who would not otherwise have known that they had being.'

"The second discourse will be delivered by John A. Warder, the professor of *Anatomy, Physiology* and *Pathology* of the *Domestic Animals*, to-morrow, the 15th inst., at 2 o'clock P. M., at Mt. Pleasant, at which the public are invited to attend."

HAW-THORN FENCES.

We notice in the proceedings of the Botanical Society of Edinburgh, that a Mr. McNab, has lately made a tour through Canada, for the purpose of obtaining information respecting the indigenous plants, and other natural resources of the province. His remarks upon the native haw-thorn will no doubt be found interesting to the readers of the *Cultivator*, as they contain practical directions for the management of live fences,—a subject upon which but few Canadian farmers have had much experience. The prospects of this colony are evidently improving; and there is scarcely a doubt but that the condition of the Canadian farmers will very shortly bear a favorable comparison with that of any other country in the world; it is therefore, but reasonable to suppose that those whose means will admit of the outlay, will turn their attention to the improvement of their farm-buildings and fences, as well as the general routine of their farming operations. But few ornamental improvements upon the farm would show off to the same advantage as enclosing the fields with thorn hedges. The English haw-thorn, is

found to endure the Canada winters, but the growth is not so vigorous as the native varieties. Some of the latter are partially ornamental, and would be particularly so, if planted in hedges and reared under proper treatment. This subject is of such great importance in those sections of the country where timber suitable for building fences is expensive or scarce, that it is desirable that a commencement should be made in propagating either the English or native thorn for fences. A few experiments in each township would lead in a few years to a general acquaintance with the mode of managing live fences, and we have no doubt but that by degrees, they would become general throughout the country. Encouragement should be given to this branch of improvement by every agricultural society in Canada :—

"He was agreeably surprised to see such a variety of native haw-thorns, being convinced of their fitness for forming hedges, so very much wanted in this country, and which many of the inhabitants expressed a great desire to have, instead of the unsightly snake fences which at present separate the fields. But apparently they never thought that the indigenous thorns would answer for this purpose, as they talked of importing haws and white-thorns form Britain. Mr. M'Nab gave instructions to those individuals with whom he had an opportunity of conversing upon the subject, so that they may raise thorns for themselves, as an abundant supply of seeds may be annually procured at no great distance from each settlement. As these instructions may be interesting to others, we here repeat them :—'The fruit should be gathered about the end of October, care being taken to keep the seeds of the luxuriant growing sorts seperate from those of the dwarfer kinds. A pit should be prepared about 1½ feet deep, into which the fruit is to be put with a mixture of earth or sand. It should be turned several times during the season, and if dry, a little water may be added; 1 or 2 ins. of soil being a sufficient covering to insure the decomposition of the pulp. During the following October a piece of good ground should be prepared, and the seed sown as it is taken from the pit, pretty thick in drills about 1 ft. distant from each other, or in beds 3 ft. wide. In the succeeding spring the plants will begin to appear; at which time, and throughout the season, they must be kept clear of weeds. If properly attended to the seedlings will attain a height of from 7 ins. to 12 ins. the first year. The following spring the strongest plants may be either transplanted into drills, or placed where they are intended to remain as a permanent fence. The smaller ones, should be left in the seed-drills or in beds for another year, when they may be treated in the same manner. In forming a live fence, the ground ought to be prepared as soon as the snow disappears, by making a trench about 2 ft. broad, and a spade in depth. Along the centre of this trench the young plants should be put about 6 or 8 inches apart, and afterwards well watered and firmly trodden in. Care should be taken to protect the young plants from cattle, and to keep them clear of weeds. The second year after planting, the thorns should be headed down to within 6 or 10 inches of the ground, and each year afterwards switched up on both sides to a certain ridge, so as to produce the shape generally termed sow-backed; hedges trained in this form, being less liable to be destroyed by snow resting upon them than when cut flat at the top.' If the method here recommended be properly attended to, Mr. M'Nab has not the least hesitation in saying that an excellent hedge of native thorns may be acquired five or six years after planting. At several places he saw the indigenous thorns employed as a fence; at least, they had been planted with that intention, and had attained a considerable height, but from want of proper attention to pruning and weeding, they were so slender that easy access might be obtained between each stem. From such instances of mismanagement, an erroneous opinion seems generally to prepail that hedges will not succeed in America. 'But,' he very properly remarked, 'if newly-planted hedges in Britain were equally neglected, there can be no doubt that they would soon degenerate, and become no better than those which I observed in the United States and Canada.'"

Repairs and white-washing of Out-buildings.—Submit every out-building on your place to a searching examination, repair every one which needs it. This done, make yourself a white-wash after this fashion: dissolve two pounds of potash in five gallons of water, then add 2 lbs. of alum, and when that is dissolved, add 10 lbs. of wheat flour, make the whole into a paste by stirring in the flour a little at a time—then in another tub slack as much lime as you desire to use, and when cold incorporate it with the first, and apply it to all parts of your buildings, both inside and out, roofs and all, and you will not only have put on a beautiful and durable whitewash, but one which will render your wood-work as nearly incombustible as is desirable.—*Am. Far.*

[FOR THE CULTIVATOR.]

When a farmer writes upon any branch of his profession, he should generally keep in view his locality, because a system that might work well at the distance of four miles from Toronto, or any greater city, would not work as well at forty miles distance; and as the following is to be found in the north-east section of the township of Whitby, it may be inferred to suit that or even a greater distance from market.

The writer of this article occupies a very small farm; but it will be found, that the system which he submits for public consideration, may be applicable for those who occupy more numerous acres. The first thing to be done is, to subdivide the farm into fields of which the one under notice is divided into seven, besides the one which is broken with the farm buildings, garden, orchard, &c., each field containing five acres, cultivated under the following mode of succession:—

No. 1. Is sown with fall wheat.

No. 2. Green or hoeing crops.

No. 3. Spring wheat or barley, sown down with grass seeds.

No. 4. Hay.

No. 5, Pasture.

No. 6. Oats.

No. 7 Peas.

Upon the removal of the pea crop, No. 7 is sown with fall wheat, for which crop it is worked in the following manner:—Plough the pea field as early as possible, after the crop is gathered, and with the view of early ploughing, an early variety of peas are desirable, harrow down immediately to make the weeds vegetate, and also to destroy any grass or deep-rooted weeds. The ground should then lay undisturbed until the last week in August, at which period it should be sufficiently harrowed to destroy every thing in the shape of weeds. Then lay out the ridges to the distance of one rod wide, and by ploughing the seed-furrow pretty wide, and inclining the plough towards the land, so that the furrows will not lap upon each other, the seed may be made to come up in rows, nearly as neatly as if sown with a drilling machine. The seed should be harrowed in the direction of the furrows, which operation should be done with a pair of light seed harrows, as straight as the land was ploughed. As soon as the seed is harrowed in, the furrows should be cleaned out with a plough, and the angles made by the cross-furrows, should be opened with a spade.

There is another method which is preferable to the one described, where the land is perfectly clean from weeds, grasses, &c., which is termed by some, ribbing. A ribbing-plough is much narrower in the mould board than the common plough, and is in every respect lighter, and may be drawn with ease with one horse. The land for ribbing should be previously made into ridges, and harrowed lengthwise to smooth the furrows. The difference between ribbing and common ploughing consists in operating upon two lands at the same time, instead of one, and in making the near side horse walk in the last furrow turned, instead of upon the unploughed land, and the plough works upon the right side of the last turned furrow instead of the left. When this operation is neatly performed, it can be made to equal in appearance the most exact method of drill husbandry, and the crops may be horse or hand-hoed at the pleasure of the farmer.

The crops next in order, are the green or hoeing crops, which of course follow the wheat. If practicable, the ground should be heavily manured in the Autumn upon the wheat stubble, which should be ploughed in with a deep winter furrow, so that it may lay dry. In the Spring, harrow well and cross plough deep, so as to thoroughly mix the dung with the soil. The potatoes should be planted in drills made with a plough, which should be made as straight as possible, and not deeper than two inches, and the sets should be planted on the left side of the furrow or drill, the eye-side uppermost; then the covering furrow may be made five or six inches deep, by practicing this plan the potatoes will lay three inches higher than the bottom of the covering furrow, and consequently are not so apt to rot as when all the furrows are of an equal depth. As soon as the potatoes are to be seen in the rows, they should be well harrowed after a shower, if possible, with a pair of light harrows. The writer has an implement which he calls an *Eradicator*, which can be worked with one horse in any drill not less than twelve, nor more than twenty-six inches, with which he cleans most of his crops at a cheap rate. After hoeing the potatoes, the rows should be cleaned out with the plough—one with a double mould board answers best for this purpose.

For turnips and Indian corn, the soil should be managed in the same way as for potatoes, except that the furrows should all be of one depth. These crops require great attention during the Summer

months, but the principal share of the work may be performed with horse-hoes. As soon as the root crops are gathered, the land should be ploughed into ridges suited to the soil, that it may receive the action of the Winter and Spring frosts, and should be sown with spring wheat as soon as the ground becomes sufficiently dry and warm for the seed to vegetate. But if the ground be sown with barley, it should be crown and furrow ploughed in the Spring, which is done by making the furrow the crown of the new ridge. The grass seeds should be sown at the same time, and harrowed in with the spring wheat or barley.

No. 3, is now cropped, and the seeds sown for No. 4 and 5; and for No. 6, the clover lay is ploughed with a neat and well proportioned furrow, making the ridges over the old furrows, which will leave the land as level as a plane; and if the ploughing and harrowing be done neatly, the soil will be free from every species of weeds and wild grasses. For No. 7 the oat stubble should be ploughed as early in the fall as possible; and by harrowing the ground a number of times in the Spring, it may be made as fine as well-prepared garden mould. The peas should be ribbed in after the manner described in No. 1.

By the above rotation the condition of the soil will be constantly improving, and will pay the cultivator better than most of the systems of rotation practiced in this country.

EXPERIMENTER.

The most effectual remedy for flies. is a strong infusion of Souchong tea, sweetened with sugar—as fatal a solution as arsenic. The skin of potatoes boiled in water for some time, and the water afterwards boiled down to a small portion, also yields a deadly poison.—*Selected.*

Sheep protected from Wolves by Sulphur.—The *Southport (W. T.) Telegraph* says, Mr. Marsh of that town has kept wolves from his sheep by putting on the back of each a small quantity of the sulphur mixed with lard. "Since the time that he made this application to his sheep, the wolves have at several times been seen to approach his flock; but on coming within a given distance, or near enough to take the scent of the sulphur, they invariably retreated."

This is a simple remedy, and we should be glad to hear further of its trial and success. The "smell of brimstone," we have before heard was a pretty effectual remedy, but it was produced in a little different manner.

STATISTICS OF CANALS AND RAILROADS IN THE U. S.

Miles of canals completed, - -	3800
Miles of railroads completed, - -	4800
Total miles, - - - -	8600
Estimated cost of canals,	$100,000,000
" " railroads,	100,000,000
Total, - - - - -	$200,000,000

First canal completed in the United States in 1808: the Middlesex, in Mass., 27 miles long, cost $528,000.

Erie and Champlain canals, completed in 1826, cost $9,000,000.

First railroad completed in the United States, viz: the Quincy, (four miles,) in 1827.

Of course the canals and railroads in the United States have been principally the work of the last twenty years.

The average cost of transportation on canals, including tolls to the State, or incorporated companies is about two cents per ton per mile, and on railroads about the same.

The cost of transporting agricultural produce on good gravelled roads is at least 25 cents per ton per mile—consequently the saving in transportation by the construction of canals and railroads is 23 cents per ton per mile.

The average number of tons of agricultural produce transported annually on the canals of the State of N. Y., is over 300,000 tons; average distance transported, 120 miles. The saving on this amount of produce is $8,280,000.

If we estimate the agricultural produce which passes on the canals of this State as amounting to one-third of the total amount of the same produce carried on all the canals and railroads in the United States, we find that the farmers and planters of this country receive a *direct* benefit of $24,840,000 annually by the use of the canals and railroads now in operation in the United States.

The indirect and incidental benefits accruing to the agricultural class are numerous, but not easily estimated—such as the saving of transportation on merchandize and manufactures required for the use of the farmer, as well as the saving of time and expense by the convenience of travelling on railroads and canals.—*N. Y. Farmer.*

Cure for Founder.—The seeds of sunflower are the best remedy known for the cure of founder in horses. Immediately on discovering that your horse is foundered, mix about a pint of whole seed in his feed, and it will give a perfect cure.

Preserving Fruit Trees from Rabbits.—The editor of the *People's Miscellany* says he found several of his fruit trees girdled by rabbits immediately after the first fall of snow. Thereupon he mixed pulverized brimstone with an equal quantity of lard, and applied it freely to the trees and twigs, and not one of them had afterwards been molested.

MANUFACTURE OF CORN STALK SUGAR.

We copy the following from the Transactions of the New York State Agricultural Society, which embodies a very plain and interesting detailed description of the entire process of manufacturing sugar from the Indian corn stalks.

The Canadian people should at least manufacture all the sugar, molasses, and vinegar they require for home consumption; this they may do without any inconvenience, and at the same time, be a saving of an immense sum annually to the country.

The manufacture of corn-stalk sugar is a branch of business with which we have not had the slightest experience, and therefore can only speak from the practice of others. From the accounts we have read, reporting the various experiments made in this new business in the United States, we are led to conclude that it will prove highly remunerating if conducted with a large degree of judgment and skill. The trial before us clearly proves this to be the case; because every item of labour expended in producing 600 lbs., the produce of the acre, has been charged against the crop at higher rates than the farming population of this colony generally calculate upon receiving; and besides the net profits to the manufacturer cannot be rated less than two cents per lb. or $12 per acre. If a wheat-grower would charge the same high rent for his land, lay out of its use two years, and pay himself for summer-fallowing, manuring, seed, harvesting, thrashing, and delivering to market, at the same rates that is charged against Mr. Adams' crop of sugar, in an average of cases, instead of their being a surplus in the shape of liberal profits, the expenditure would be actually greater than the receipts. This by no means is a necessary consequence, as by skilful farming the wheat crop may be made to pay as heavy profits as almost any other, but in a large proportion of cases it does not pay more than the costs of production. Any crop that will pay for the costs of production and leave a nett profit of £2 per acre, is well worthy of cultivation. This we are about confident may be done by converting the Indian corn crop into sugar or molasses, as described. It is certainly worth while to give this new branch of industry a fair trial, and we see no good reason why it may not be done as well this summer as at any other time. Agricultural societies would do well to look to this matter.

One acre of ground was selected of a sandy loam, cultivated last year to ruta-baga; this was manured with thirty loads of the best stable manure, well mixed in with the soil by twice ploughing and harrowing. Corn planted the 13th of May, with eight-rowed northern corn; the rows three feet apart one way, and hills eighteen inches the other, with six to eight kernels in a hill. It came up finely, and was plastered the 31st of May; hoed the first time the 9th and 10th of June, the second time the 24th of June. Cultivator run through it three times. The corn began to tassel the 18th of July, and was in full tassel the 1st of August.

Up to this time the crop had looked uncommonly well, but from the first of August a severe drought commenced, and continued until the crop was very materially injured. Some spots where the corn had grown most luxuriantly, withered and dried up; other parts of the field suffered less, so that on the whole there was some more than half of a good crop, or what there would have been if the season had continued favorable.

Cutting, Grinding, and Boiling.—Cut the first stalks, and make the first experiment at grinding and boiling, the 25th of August. The stalks at this time were quiet green, but the produce was satisfactory, and appeared quite favorable for crystalizing. The juice was very abundant, of a greenish color, very rich, thick and heavy, yet retaining all the flavour of the corn-stalk, until after cleansing and boiling.

August 30th, made the second batch. This was boiled in a shallow sheet-iron pan, clarified and strained according to the directions given in Mr. Ellsworth's Report. From this batch was taken the specimen of sugar exhibited to the committee at the State Fair in Rochester.

Other experiments were made the 4th and 7th of September.

The object of these successive experiments was mainly to determine at what time the saccharine matter was sufficiently matured to make crystallized sugar.

On the 11th of September the stalks appeared in the right stage, and the cutting, grinding and boiling were commenced, and continued with little intermission until the whole was completed. The method pursued in this operation, was to keep a sufficient number of hands in the field to strip the leaves or blades, and cut off the tops as fast as the stalks were wanted for use; this labor was generally performed by boys. The corn-field being at a little distance from the mill, the horse used for grinding was put before a light waggon, driven to the field, the stalks were then cut and placed upon the waggon,—taking care to keep them straight and in order—driven to the mill and ground without delay. A load of this kind in a light waggon, with lumber box, will make a batch of fifteen to twenty gallons; this would be ground in about thirty minutes. Lime water was mixed with the juice while it was running from the mill. The juice is then strained through a flannel cloth into the pan, and heated, rather moderately, to the boiling point, when the scum is removed with a skimmer; then boiled rapidly for a few minutes. The syrup is then removed from the fire, and again passed through the flannel strainer, when the boiling is finished as rapidly as possible.

This process, from the cutting of the stalk to taking the sugar from the fire, could not possibly be performed in less than two hours; and if the batch was larger, would often exceed three. Five batches were made in one day, from which one hundred pounds of sugar were produced,

The Boiler.—The boiler or pan, I made of a sheet of Russian iron, turned up at the sides and ends, lapped and rivetted at the corners; would hold about twenty-five gallons, five and a half inches deep, but from fifteen to twenty gallons is as much as would boil to advantage. The pan is placed upon an arch of brick, so that the fire comes in contact with only the bottom.

Mill.—To construct this was a matter of much more difficulty. Some drawings and descriptions are given by Mr. Ellsworth, but little more could be known from them than that there must be three rollers, so placed and put in motion that the stalks in passing between them should receive two crushings.

To plan and construct a mill, with the proper dimensions and with the strength required, so that the work of crushing the stalks should be performed with certainty and despatch, was no easy task. I flatter myself that I have in this been tolerably successful. The rollers and iron-work, patterns, &c., for my mill, were made by J. A. Langworthy, of Rochester, at a cost of sixty-five dollars. The whole weight of iron is about nine hundred pounds.

About one-half of the expense of the mill is in the horse-power. The iron rollers being placed horizontal, it was necessary to have a horse-power wheel and gearing in order to give them motion. If the more simple, and it would seem at first view, less expensive forms, given in Mr. Ellsworth's Report, had been adopted, placing the rollers perpendicular, the horse passing around them, the rollers must have been of large diameter in order to take through the length of corn-stalk at one revolution of the horse. These large rollers, when made of iron, would have been very expensive, and probably not work as fast as the small one I use, giving them a quicker motion by gearing. In my mill the circumference of the rollers has such a proportion to their motion, that their velocity is equal to about one-sixth the velocity of the horse; or in other words, a corn-stalk six feet long, will pass through between the rollers in the same time that the horse will walk thirty six feet. The grinding is a beautiful operation, the amount of juice contained in the stalk is surprising to every one. The stalks in passing through the mill are crushed very fine, and the juice entirely separated from them by the pressure of the rollers.

Clarifying.—This has been to me a difficult, and to some extent an unsuccessful operation. All the various methods recommended by different persons who have made some experiments on corn-stalk sugar, and all that my own experience in clarifying maple sugar could suggest, failed of producing fully the desired effect. In all the failures which have been experienced to produce crystallized sugar. The cause should be sought here. Unless the juice of corn-stalks can be clarified, it is vain to expect a pure article of crystallized sugar. All the obstacles to the complete success of this enterprise are met at this point; but that they will be completely overcome, there cannot be the least doubt. Lime water applied to the juice as soon as it comes forth from the mill, one gill to fifteen gallons, was thought to produce the best effect. But experiments were made with various other things, such as milk, eggs, charcoal, &c.; these were used separately and combined, but nothing appeared to raise the scum as well and render the juice as clear and well-flavored as the lime water. One experiment was made by filtering the juice through sand and charcoal. This rendered it very transparent and improved the taste, but there are very many objections to this process—the length of time required for the operation is a sufficient one.

Straining.—This operation is performed both before and after clarifying. The strainer used was a square yard of good new flannel, of fine texture; so great is the amount of mucilage, or very minute particles of the corn-stalk contained in the juice, that the strainer has to be rinsed in water once or twice in straining a batch. The second time straining is rendered more difficult by the juice being hot, as the hands have to be used in forcing it through the cloth. As knowledge and experience are gained on the subject of clarifying, the straining will be dispensed with, except to pass the juice through a coarse strainer to remove some of the larger impurities. Some

method will be discovered by which all this foreign matter will be removed in the operation of skimming.

Boiling.—This operation requires care and close attention, particularly when about ready to skim, and when the juice is concentrated to about the point desired. The more rapidly this operation is performed, the more perfect will be the crystalization. But, however necessary it may be, it is scarcely possible, with any apparatus that I have any knowledge of, to perform the whole labour of cutting, grinding, straining, skimming, and boiling, in the short space of one hour, as recommended by Professor Mapes, of New York. If this is ever done, it must be in very small quantities, or some very improved method must be adopted.

In boiling, as soon as the scum begins to rise, the fire must be regulated with care, that time may be had for removing the scum before it shall be boiled in. If the operation of boiling and skimming be well performed, about one gallon of thick heavy scum will be obtained from a batch of fifteen gallons. The syrup, when it becomes thick and nearly done, has a very beautiful appearance, in every respect equalling the best of maple syrup. To boil to the crystallizing point, —which is a very uncertain one,—requires considerable care and discrimination. The same tests that are used for maple syrup are equally applicable to corn-stalk; as for instance, when it will flake off, breaking short, from a dipper or stick—or string out between the thumb and finger, from half an inch to an inch in length, is perhaps the safest test. Very great care is necessary here, that it be brought to the right point and no more; and also in managing the fire, as a little blaze, or too strong a heat, is most sure to scorch, and this is fatal to crystallization.

Crystallization.—Difficulty has been found here by all that have made experiments with corn-stalk sugar; but perhaps every one has obtained a sufficient quantity that was well grained, to satisfy him that the difficulty was somewhere in the process of manufacture.

From recent observation I am inclined to think that I have kept my sugar in too cool a place. Two small parcels, left partly by accident where they received the warmth of a fire, were found well grained. But there is another difficulty after it is well crystallized, to make the molasses separate, or drain, as it is called: although the crystal appears to be as fine as was ever formed, still the molasses will not separate by any common methods used for maple sugar. As yet, I have not been able to procure any better specimen than that exhibited at the State Fair.

Amount from the acre.—Although the quantity of stalks was so much diminished by the drought, yet six hundred pounds were obtained; this, it should be understood, is weighed when taken from the fire and before graining has commenced. If it were well grained and the molasses separated, the weight of sugar would probably not be more than five hundred, and molasses one hundred.

In order more fully to determine the amount that might be produced from an acre of good corn, I measured two square rods of the best corn I had; the stalks were then cut, and the weight was 150 pounds; after grinding, the juice weighed 69 pounds and measured nine gallons; from this I obtained twelve and a half pounds of sugar. By this it would appear, that had the whole acre been as good as the two rods submitted to the test, one thousand pounds would have been the produce. And it would seem that this must be a safe calculation, as the stalks on the two rods were not as large as would be grown in a good season.

An equal amount by weight of large stalks of rank growth, and small ones that were grown thick, were ground separately; but as no material difference was found in the produce, my opinion is that the corn should be cultivated so thick that no ears will be produced.

EXPENSE.

For the rent of land. - - -	$3 00
" thirty loads of manure 1s. per load,	3 75
" drawing thirty loads manure 10c, per load, - - - - -	3 00
" plowing, harrowing and fitting ground,	2 34
" planting, plastering, cultivating and hoeing, - - - - -	5 87
" seed-corn and plaster, - -	0 68
" spreading manure, - - -	0 88
The whole expense of raising 1 corn-stalk - - - - -	$19 52

There is no part of the business that is so tedious as plucking the ears, stripping the leaves and cutting off the tassel. A part of this labour was performed for the fodder that might be obtained from it, but it was not sufficient to pay; as the labour of plucking the ears was performed for this consideration, I am unable to say what it would cost; but this much is certain, it is needless for the most part, as no ears of any amount need be raised, if the corn is sufficiently thick. From the best estimate that I can make of the expense of stripping leaves and cutting the tassel, I think that a smart hand would perform the work on an acre in six days; therefore,

The amount brought forward,	$19 52
To six days stripping leaves, &c.	4 50
This is the whole expense up to the cuting of the stalks, - -	$24 02

It is somewhat difficult to come at the expense I was at in manufacturing the acre of stalks into sugar, so much was done by way of experiment. But as one hundred pounds were made one day, I shall take that as my guide, and call it a day's work for two hands to make one hundred weight.

The amount above brought down.	$24 02
To 12 day's work making sugar at 6s. a per diem, - - - - -	9 00
To use of horses and waggon, six days at 3s. per diem, - - -	2 25
To ¾ cord of wood at 12s. per cord, -	1 12
The whole expense of manufacturing 600 lbs., is - - - - -	$36 40

Or a fraction more than six cents per pound.

Some credit may be given for fodder, as a large amount of leaves or blades might be saved with a little extra labour while stripping them. The stalks, after being ground, are worth something, horses and cattle eat them very greedily when they are fresh from the mill.

Remarks and Suggestions, by way of Recapitulation.

1. If good crystallized sugar of pleasant flavor shall be produced from the corn-stalk, I can see no good reason why its manufacture shall not become as universal as the raising of corn. Every neighbourhood can as easily be supplied with its apparatus to make sugar as to make cider.

2. Corn should be grown so thick as to produce no ears. Some variety of corn that grows very large, like the "Ohio" or "Rocky Mountain," might be best; this latter is well adapted in some respects, as it is very little inclined to ears or leaves; cutting the tassel will not prevent earing, unless they are all cut and kept cut. The cutting of the stalk may commence as soon as the tassel is ripe. If the weather is warm, grind immediately; but if cool, or early in the morning, a little delay is not thought to be injurious.

3. Lime water is perhaps the best for clarifying of anything yet discovered; but some agent that will more effectually cleanse from all deleterious or foreign matter, is necessary. Science, with persevering experiments, will no doubt produce this result.

4. The less time occupied in boiling, the more perfect is crystallization. This is true of the maple juice, and probably more so of the corn-stalk. To boil to advantage, two pans should be provided

5. Any man of very ordinary ingenuity can make a pan in two hours, with no tools but cold chisel, punch, hammer and six cents worth of rivets.

6. I make no doubt that a mill with wooden rollers would answer a good purpose for a small operation, and small operations are what is wanted; let no man go into this business *largely* until there is more knowledge on the subject.

A simple mill with two rollers, that might be built for five dollars, would crush the stalk and save most of the juice. No cog-wheels can be necessary; for if you turn one, the other must go. When experience has taught how to clarify, so that we may be sure of a good article, then will be time for more perfect and expensive machinery.

7. If the result of this enterprise depended on the amount of saccharine matter contained in the corn-stalk, its success would be certain. Estimates that have been made of the amount that might be made from an acre, have probably never been too high. Improvements in cultivation, and in finding the variety of corn best adapted, will no doubt greatly exceed these estimates.

8. The expense, as compared with maple, must be much in favour of corn-stalk. Of the expense of growing an acre of corn-stalks, every farmer may judge correctly; then compare the amount of fuel, the amount produced in a day, the expense of fixtures, and it is all vastly in favour of the corn-stalk. Only let the corn-stalk sugar have the delicious flavor and the beautiful crystallization of the improved maple, and no longer will that pride of the forest be hacked and bored by "wicked hands" to obtain its sap.

May we not hope that Mr. Ellsworth's forthcoming report will throw much light on the subject? The collected experience of all that have been engaged in the business the past season, will soon be laid before Congress and the people. If Professor Mapes shall fulfil his pledge made in the last report, some scientific and practical information will no doubt be the result.

With these remarks I submit this report. I have endeavoured to give a faithful and full account of my experiment. I am aware that on some parts of this business I cannot speak as favorably as might be desired; but for myself, I have no fear of the result of the enterprise. I would beg leave to suggest, that a liberal premium be offered next year, for a given amount of corn-stalk sugar of the best quality. This might stimulate, not only a greater amount, but more careful experiment.—*N. Y. State Agricultural Society's Transactions.*

Lime against the Curculio.—Professor Cleveland, in the *American Farmer* states, that having tried salt without success, as a remedy for the ravages of the Curculio, on his fruit trees, he made the following experiment:

"Previous to 1841, several of my plum trees had been so attacked by these insects that I scarcely obtained a ripe plum. Early in the spring of that year, as soon as the blossom buds began to swell, I removed the soil around the tree to the depth of two or three inches, and as far on all sides as the limbs extended. I then deposited in the opening a layer of lime, recently slacked, and still warm, about half an inch in thickness. The soil was immediately restored to its place over the lime, and closely pressed down upon it. I had an abundant crop of well ripened plums. In the spring of 1840, I again applied lime in a similar manner, and with the same success.

Cure for Sore Teats.—Some of our neighbors inform us that molasses is the very best article to bathe a cow's teats, after milking, to cure chops and cracks: they are very apt to be troublesome at this season of the year.—*Mass. Plough.*

SMUT, RUST, AND CHESS.

The April number of the *Michigan Farmer* contains a Correspondence between Mr. Charles Fox, of that state, and Professor Johnston, of Edinburgh; in which the subjects above are liberally discussed by the learned Professor. The following quotations are to the point, and deserve to be understood and practised by the Canadian farmers:

"Steeping in a solution of salt that will float an egg, and then drying the wet seed with quick lime; fermented urine, blue vitriol, (*sulphate of copper,*) and arsenic, are also used as steeps, for the same purpose of killing the fungus, with greater or less effect.

"The rust arises from the over-luxuriance of the growth of your wheat, which will diminish as the vegetable matter in your soil becomes exhausted by frequent cropping; but more especially from the wetness of your soil, or the rains and mists, to which, in the midst of so much water, your land may be subject. A good dose of lime might help this disease; but it will lessen as your land is better drained, and rendered drier.

"But it is your chess in wheat that has amused me. The chess is a *Bromus* —a kind of grass, which resembles in its straw the young wheat, but which branches out in the head like the oat. Assume, with all botanists, that species cannot be transmuted, and the production of wheat from a *Bromus* is impossible. If it be impossible, then how are your facts to be explained? You mention two cases.

1st. That of *new land*, when broken up and sown with wheat, chess comes up. This means, when correctly interpreted, that the seed of the chess was more abundantly in the soil naturally, than the grass you added artificially; and perhaps, also that more or less of your wheat was thrown out by the frost and destroyed.

2nd. On *old land*, where wheat is sown, if the wheat comes up thick and early, it will keep down the chess perhaps; if it is thrown out, or destroyed by frost, the blank spaces will be filled up by the sprouting of those seeds which are most abundant in the soil, which with you seems to be chess, as in the flats of Yorkshire it is the wild mustard. The error with the American farmers is, that they start from the false assumption, that the change of wheat is possible, and thus come to see proofs—just as our forefathers saw ghosts—where only natural appearances present themselves. Believe it to be impossible, and the explanation of appearances may cost a little more thought, but the expenditure of that thought, will lead to the *truth.*"

If the wheat-growers of this country could, by any means, prevent the three diseases here described, it would be a means of doubling the products of this important staple crop. It is not going too far to assert, that one half of the wheat crop is annually destroyed by these three agents. So far as the two former are concerned, the only difficulty in obviating the evil is, to remove the cause, the means for doing which are within the reach of every cultivator. Destroy the *fungus* on the berry, by the mixtures mentioned by the Professor, and the first evil will be removed; and to remove the second, thoroughly clean the ground, and sow no chess with the seed wheat, and by practicing the system of sowing clean seed for a series of years, and allowing none to ripen upon the land, it will be good for *sore eyes* to see a single plant of this grass growing under this treatment. The total removal of rust from the wheat crop, is a far more difficult bu-

siness than that of smut and chess, because the disease is frequently promoted by some radical defect in the soil, which would cost a heavy outlay of capital to counteract. But in the great majority of cases where rust is most prevalent, it is encouraged by a too luxuriant growth of the plant, stimulated by an excessive amount of vegetable, over mineral matter, which occasions the bursting of the sap-vessels. Some may accuse us of presumption, when we state that we have every confidence that *smut*, *chess*, and *rust*, may be prevented, and that we shall not be troubled with either upon our growing crops of wheat. If we should be mistaken in our calculations, we shall in due time publish the result, for the information of those who may have had the opportunity of reading these predictions.

SHOULD THE AGRICULTURALIST BE EDUCATED?

It has been too often thought that little or no education was requisite to prepare the mind to perform the duties of a husbandman—that his natural instincts, together with a "little reading, a little writing, and a little cyphering," were amply sufficient to direct him in the performance of all his duties. And though this false view of human improvement is loosing ground, and the great mass of the people are beginning to learn the real object to be attained in Education, yet it is now far from being an obsolete idea. A man should be educated, not because he is to follow a particular trade or occupation—not because he is to fill a particular place or position in society—not because he is to follow a certain profession, but *because he is a man.* The incentives to mental cultivation are higher than the trades they follow, or the professions they practice. More elevated than the mere dollars and cents, the end too often to be attained by Education. He is to be Educated because he possesses a mind whose energies, when developed, are capable of elevating him above the brutal nature of the untutored world—multiplies infinitely his sources of enjoyment—prepares him to act his part upon the stage of life—enables him to turn the instruments God has given him to his use—gives him power to appreciate the grand, the beautiful, and the sublime in nature, and finally, to promote the great ends to be attained by civilization. But if there are no inducements to mental cultivation in the nature of man, there would still be other, and wide grounds for its importance. They are in the nature of the farmer's occupation. While the theologian spends years of toil in preparing himself for the duties to be performed in the practice of his profession, while the physician wastes his energies in college classes to learn the nature of the human system and human disease—while the lawyer spends years in the study of the common law—while the mechanic must learn by a slow and weary process the art of making goods—to the farmer, whose trade is infinitely more complex—whose profession is infinitely more scientific, no preliminary preparation—no developement of the mind—no perfecting of the reasoning powers is deemed necessary. This is an erroneous notion—a fallacy which the sunlight of truth and improvement will ere long dispel. The farmer daily performs operations involving the principles of mechanics—of natural philosophy—of chemistry—of the germination and growth of plants and trees—of hydraulics and hydrostatics, of geology, zoology, minerology, and botany—of the changes of climate—and of the influence of winds and rains. And all experience has shown, that the farmer whose mind is most enlightened upon these departments of science—whose knowledge of the laws governing their operations is most extensive, has ever been most successful in drawing from the teeming bosom of the fruitful earth the exhaustless treasures it is capable of yielding. It is all important, then, that upon the ground of *utility* alone, the mind of the agriculturalist should be irradiated with the beams of science.

Parsnip Wine.—Wine made of parsnips approaches closely to the malmsey of Madeira, and is made with very little trouble or expense, and is wholesome and palatable.

To every 4 pounds of parsnips, clean and quartered, put one gallon of water; boil till quite tender; drain them over a scive, but do not bruise them, as no process will clear the liquor afterwards. Pour the liquor into an open vessel, and to each gallon add 3 lbs. of sugar, and half an ounce of cream of tartar. When cooled to about blood heat, add a little new yeast, or emptyings: let it stand 4 or 5 days in a warm room, then put it into a cask, and when the fermentation has subsided, bung tight, and let it stand 8 to 12 months before using.

The months of April and May are the best for getting a good fermentation; and in these temperance times it is an experiment worth trying.—*Gen. Farmer.*

GREATEST AMOUNT OF PRODUCE FROM A GIVEN SURFACE.

Having occupied several letters with the attempt to unravel, by means of chemistry, some of the most curious functions of the animal body, and, as I hope, made clear the distinctions between the two kinds of constituent elements in food, and the purposes they severally subserve in sustaining life, let me now direct attention to a scarcely less interesting and equally important subject—the means of obtaining from a given surface of the earth, the largest amount of produce adapted to the food of man and animals.

Agriculture is both a science and an art. The knowledge of all the conditions of the life of vegetables, the origin of their elements, and the sources of their nourishment, forms its scientific basis.

From this knowledge we derive certain rules for the exercises of the *art*, the principles upon which the mechanical operations of farming depend, the usefulness or necessity of these for preparing the soil to support the growth of plants, and for removing every obnoxious influence. No experience, drawn from the exercise of the art, can be opposed to true scientific principles, because the latter should include all the results of practical operations, and are in some instances solely derived therefrom. Theory must correspond with experience, because it is nothing more than the reduction of a series of phenomena to their last cause

A field in which we cultivate the same plant for several sucessive years, becomes barren, for that plant in a period varying with the nature of the soil: in one field it will be in three, in another in seven, in a third in twenty, in a fourth in a hundred years. One field bears wheat, and no peas; another beans and turnips, but no tobacco: a third gives a plentiful crop of turnips, but will not bear clover. What is the reason that a field loses its fertility for one plant, the same which at first flourished there? What is the reason one kind of plant succeeds in a field where another fails?

These questions belong to science.

What means are necessary to preserve to a field its fertility for one and the same plant?—what to render one field fertile for two, for three, for all plants?

These last questions are put by art, but they cannot be answered by art.

If a farmer, without the guidance of just scientific principles, is trying experiments to render a field fertile for a plant which it otherwise will not bear, his prospect of success is very small. Thousands of farmers try such experiments in various directions, the result of which is a mass of practical experience forming a method of cultivation which accomplishes the desired end for certain places; but the same method frequently does not succeed—it indeed ceases to be applicable to a second or third place in the immediate neighborhood. How large a capital, and how much power, are wasted in these experiments! Very different, and far more secure, is the path indicated by science; it exposes us to no danger of failing, but, on the contrary, it furnishes us with every guarantee of success. If the cause of failure—of barrenness in the soil for one or two plants—has been discovered, means to remedy it may readily be found.

The most exact observations prove that the method of cultivation must vary with the geognostical condition of the subsoil. In basalt, greywacke, porphyry, sandstone, limestone, &c., are certain elements indispensable to the growth of plants, and the presence of which renders them fertile. This fully explains the difference in the necessary methods of culture for different places; since it is obvious that the essential elements of the soil must vary with the varieties of composition of the rocks, from the disintegration of which they originated.

Wheat, clover, turnips, for example, each require certain elements from the soil; they will not flourish where the appropriate elements are absent. Science teaches us what elements are essential to every species of plants by an analysis of their ashes. If, therefore, a soil is found wanting in any of those elements, we discover at once the cause of its barrenness, and its removal may now be readily accomplished.

The empiric attributes all his success to the mechanical operations of agriculture: he experiences and recognises their value, without inquiring what are the causes of their utility, their mode of action: and yet this scientific knowledge is of the highest importance for regulating the application of power and the expenditure of capital—for insuring its economical expenditure and the prevention of waste. Can it be imagined that the mere passing of the ploughshare or the harrow through the soil—the mere contact of the iron—can impart fertility miraculously? Nobody, perhaps, seriously entertains such an opinion. Nevertheless, the *modus operandi* of these mechanical operations is by no means generally understood. The fact is quite certain, that careful ploughing exerts the most favorable influence; the surface is thus mechanically divided, changed, increased, and renovated, but the ploughing is only auxiliary to the end sought.

In the effects of time, in what in agriculture are technically called *fallows*—the repose of the fields—we recognise by science certain chemical actions, which are continually exercised by the elements of the atmosphere upon the whole surface of our globe. By the action of its oxygen and its carbonic acid, aided by water, rain, changes of temperature, &c., certain elementary constituents of rocks, or of their ruins, which form the soil capable of cultivation, are rendered soluble in water, and consequently become separable from all their insoluble parts.

These chemical actions, poetically denominated "the tooth of time," destroy all the works of man, and gradually reduce the hardest rocks to the condition of dust. By their influence the necessary elements of the soil become fitted for assimilation by plants; and it is precisely the end

which is obtained by the mechanical operations of farming. They accelerate the decomposition of the soil, in order to provide a new generation of plants with the necessary elements in a condition favorable to their assimilation. It is obvious that the rapidity of the decomposition of a solid body must increase with the extention of its surface; the more points of contact we offer in a given time to the external chemical agent, the more rapid will be its action.

The chemist, in order to prepare a mineral for analysis, to decompose it, or to increase the solubility of its elements, proceeds in the same way as the farmer deals with his fields—he spares no labor in order to reduce it to the finest powder; he separates the impalpable from the coarser parts by washing, and repeats his mechanical bruising and trituration, being assured his whole process will fail if he is inattentive to this essential and preliminary part of it.

The influence which the increase of surface exercises upon the disintegration of rocks, and upon the chemical action of air and moisture, is strikingly illustrated upon a large scale in the operations pursued in the gold mines of Yaquil, in Chili. These are described in a very interesting manner by Darwin. The rock containing the gold ore is pounded by mills into the finest powder; this is subjected to washing, which separates the lighter particles from the metallic. the gold sinks to the bottom, while a stream of water carries away the lighter earthy parts into ponds, where it subsides to the bottom as mud. When this deposit has gradually filled up the pond, this mud is taken out and piled in heaps, and left exposed to the action of the atmosphere and moisture. The washing completely removes all the soluble part of the disintegrated rock; the insoluble part, moreover, cannot undergo any further change while it is covered with water, and so excluded from the influence of the atmosphere at the bottom of the pond. But being exposed at once to the air and moisture, a powerful chemical action takes place in the whole mass, which becomes indicated by an effervescence of salts covering the whole surface of the heaps in considerable quantity. After being exposed for two or three years, the mud is again subjected to the same process of washing, and a considerable quantity of gold is obtained, this having been separated by the chemical process of decomposition in the mass. The exposure and washing of the same mud is repeated six or seven times, and at every washing it furnishes a new quantity of gold, although its amount diminishes every time.

Precisely similar is the chemical action which takes place in the soil of our fields; and we accelerate and increase it by the mechanical operation of agriculture. By these we sever and extend the surface, and endeavour to make every atom of the soil accessible to the action of the carbonic acid and oxygen of the atmosphere.—We thus produce a stock of soluble mineral substances, which serve as nourishment to a new generation of plants, and which are indispensable to their growth and prosperity.—*Liebeg's Familiar Letters on Chemistry.*

Chemical Analysis.—Red Rust.—As an instance of the benefit of analysis, I may here briefly mention, that on a recent chemical examination of the soil of several of our fields at Flockton, Mr. Haywood, the analytic chemist whom we employed, discovered in it an appreciable antity of phosphate of iron, and traced this substance to be the cause of the red rust (?) which so frequently attacks the wheat. To satisfy himself that the presence of this substance was the cause of that disease, he collected a quantity of this rust, which he minutely analysed, and he satisfactorily proved that it was composed of phosphoric acid and iron, a combination which, it appears, is injurious; but to ascertain a mode of correcting or decomposing this injurious compound, he subjected it to the action of quick lime, when he discovered that two fertilizing substances were immediately formed, namely, phosphate of lime, which is the chief ingredient of bone, and peroxide of iron, which also is a substance possessing fertilizing properties, both from its being an ingredient in many cultivated plants, and from its having the power of fixing ammonia. The known fertility of many of the red soils is owing to the presence of this latter compound, and the efficacy of burnt clay, as a tillage, is, in a great measure, due to the conversion of the protoxide into the peroxide of iron, by the operation of burning. On afterwards examining fields of wheat which had been lately limed, and others which had not been so treated for many years, in the former we did not discover the rust, but in the latter it was prevalent.—*Eng. Ag. Gaz.*

A nice and wholesome Sweetmeat for Family Use.—Pare or not, as you choose, a quantity of sweet apples to fill an earthen or stone jar; add a little sugar and molasses, and if the apples are not sufficiently juicy, a little water; cover with a thick paste of flour and water, and put into a brick oven with your bread. Let them stand till morning. They will have the flavor of baked pears, and can be had fresh at all seasons.—*Am. Ag.*

Valuable Recipe for Whitewash.—Take about a peck of unslacked lime, and slake it in hot water; add to this, while hot, about six pounds of lard, or any house grease; then put in about two pounds of glue, and if for nice inside painting a pound of Spanish whiting, and a few handfuls of salt. Apply it on while hot. This recipe was obtained from Mr. John Noble, of the Dennison House, who has been very successful with this on his buildings. No rain or dampness has any effect to darken this whitewash at any time.—*West. Far. and Gar.*

ON COMMON SALT AS MANURE.

This salt has been used as a manure since the remotest antiquity; and although its value as a fertilizer has been generally put too high (especially in England,) it is nevertheless true that it merits attention, producing, on some soils, a most beneficial effect. This would be still greater if the rain-water did not annually carry off a good quantity from the soil, as it will not act but in cases where the soil is deficient in it.

Common salt (once erroneously called chlorate of soda) consists of 60. 3 parts of chlorine and 39.7 of sodium, and belongs to the class of sub-substances called chlorides. It is soluble in two parts of water, and thus is easily taken up by plants. On account of its great salubrity, it also soon disappears from the soil, being either absorbed by the plants or dissolved by rain-water. We have before said that it is one of the component parts of dung; it is to be found in all plants and in every spring-water; but the common salt afforded by the dung is not sufficient in quantity for plants, and therefore an application of it by itself is very beneficial. The effects, however, are seldom very striking, because it neither forces the plants, nor do they obtain after its use a dark green color, as is the case after the use of several other salts. Common salt will merely invigorate them, and (which is of the greatest importance) the plants manured with it are good food for cattle. In the soil it is only liable to decomposition if it remains long in contact with carbonate of lime, in which case cabonate of soda and chloride of calcium will be formed; both salts, however, will be again decomposed by the humic acid. It would, by-the-bye, be worth while to make a series of experiments on the repeated exchange which takes place in the soil between acids and basis, as thereby many interesting results would be ascertained. On the humus or humic acid salt exercises no direct influence. A substance which, like common salt, consists only of two elements, does not so easily undergo any change, and as these are neither an oxide as base, nor an acid, it will not easily combine chemically either with an acid or a base of the soil, and consequently passes unchanged and undecomposed into the plants. In these, however, it is partly decomposed, because whilst the leaves evaporate the chlorine, we find the sodium changed into soda, in their sap; truly a remarkable process, showing that often what is beyond the reach of chemical powers, is at once accomplished by vital process. Those who do not consider mineral substances as food of plants, ascribe to common salt merely excitative properties.

To the manuring with common salt, many things are ascribed which do not really take place; still, it affords many advantages, which are so important that it ought to be resorted to oftener than is the case. We shall now state some experiments on that score, and consider what has been said in favor of this mineral manure.

It is said that the crops, after a manuring with common salt, are less liable to disease. This I have not found to be the case, because, although I have often applied this manure both in small and large doses, I still saw that the plants were not free from the smut or blight. It is also said that plants grown with common salt are more relished by the cattle. I can assert that this is really the case. I had often occasion to see pastures where there were spots the herbage of which was not touched by the cattle except when in the greatest need, but as soon as they were manured with common salt the cattle preferred the very same plants which had previously been rejected. If potatoes, cabbages, &c., are manured with common salt, they will have a far better taste.

Common salts makes plants more wholesome for the cattle. That this is really the case may be learnt from the fact that spoilt fodder will injure cattle much less if much common salt is given to them at the same time. On the sea-coast the half putrid hay of the marshes (*Poa maritima,*) which contains much common salt, is given to the cattle without the least injury; and sheep will never over-eat themselves on pastures where many salt plants are to be met with, Plants grown after common salt are also more nutritious, the reason of which has been already stated.

It is farther stated that the crops grown after common salt, suffer less from cold. I have not had any experience on that subject, and can, therefore, not decide it; as, however, cattle which get much common salt can better support cold than without it, we may suppose the same to be the case with plants.

Again, it is said that salt will destroy worms, insects, and other vermin. This, also, I have not experimented upon, but I believe, judging from the small quantity used per acre, that it cannot produce this effect. It requires a good quantity of common salt to kill one snail.

Another assertion is, that certain cultivated plants will succeed best, only if manured with common salt. To these, it is said, belongs flax, rape, hops, clover, peas, beans, carrots, potatoes, celery, horse-radish, mustard, and cabbage. I can vouch for this, partly from my own experience, and partly from the fact that much chlorine and sodium are required for the chemical constitution of these plants.

Finally, fruit trees are much benefitted by a manure of common salt. If only part of these statements were true, it would suffice to induce us to use common salt as a manure. The price, however, in many countries, is so high, that its use can only be very limited. (No such excuse is admissible in England.) The quantity of common salt to be employed on one Magdeburg acre of land is differently stated. It partly depends, as it is with all manures (especially those easily soluble in water,) on the quality of the soil; the clayey soil can bear, and in fact requires more than the loamy, and this again more than the sandy. The late worthy Mr. Schubler has found that Barley ought to receive, on loamy soils, only 75 lbs. per Magdeburg acre, as 5 lbs. more or less did not produce such a good result. It is

to be regretted that Mr. Schubler did not ascertain how much salt the soil contained originally, as this necessarily determines the quantity to be used. It is easy to take too much; and I once manured (for the sake of experiment) an acre of heath soil with 60 lbs. of common salt, it was, even after two years, still so sterile as to neither produce Oats nor Potatoes. In England, where the manuring with common salt has been most resorted to, a much larger quantity per acre is used, which may be ascribed to the rains in that country, which will soon extract a great part of the easily soluble salts.

In England it is strewed, some weeks previous to the sowing of the corn, over the fields; and this is a good plan, as it will thus gradually spread through the furrow-slice, and then be easier taken up by the roots. Generally speaking, it is well to sow it in the early spring over the fields, as it will then be carried by the water in the soil, and better avail the plants during the summer.

In some countries the common salt intended for manure is strewed from time to time over the dung-sink, which must have been usual in antiquity, as we find it mentioned in the Scripture. It is asserted that the common salt brings the dung to speedier decomposition; but this is not probable. That, however, dung will act more powerfully if mixed with common salt is easier to be believed, especially if the plants given for fodder, as well as those given to the cattle as litter, be deficient in this salt.

If the crops are manured with common salt, the feeding of the cattle with common salt (otherwise useful) will be superfluous, as they will then receive it in their food. If plants which are rich in common salt, are given to the cattle, we shall always see that they will reject the salt given to them in its natural state, as the want of this substance is otherwise satisfied. It may be also that food saturated with a vegetable acid, which has been formed by the decomposition of the common salt, if more advantageous to cattle; on which account experiments with acetate of soda might be made. If I mistake not, even carbonate of soda (soda) has been of late years mixed with the fodder of cattle with advantage.—*Sprengel.—Ag. Gazette.*

DISEASES OF SHEEP.

Treatment of Rot.—As reason and experience have taught us that tathy herbage is a common cause of this complaint, we should, when it shows itself, at once remove the animals to a better pasture, where they should be exempted from teazing of every kind.

Salt appears, after every trial, to be the best medicine, and to this they should have, at all times, ready access. Should the disease be rather far advanced, the breathing hurried, and the cough annoying, occasional doses of the following infusion will be of service, in enabling the farmer to keep down the disease, till such time as he can conveniently dispose of the animal. Take of leaves of fox-glove two ounces, boiling water two English pints: pour the water on the leaves, cover up the vessel, and keep it in a warm place for six or eight hours, then strain.

Two tea-spoonfuls morning and evening may be given to a sheep, but as the plant is an active posion, and the strength of its infusion liable to to vary, a couple of days should always intervene between every six doses.

About the year 1800, a notion prevailed in this country, that an effectual remedy for rot had been discovered by the Dutch, but this was quite unfounded, no *cure* ever having been hit upon for this sweeping malady; indeed, a cure is fairly out of the question: its prevention and palliation, but not its eradication, being all that we can hope for. Sundry plausible plans of treatment have, however, at one time or another been contrived, some of them in all conscience harmless enough, but others again as well adapted for the destruction of the animal as the removal of the disease.

As fluke-worms have usually been reckoned the cause of rot, so the treatment has principally consisted in attempts to effect their extermination. With this view, Sir George Stewart Mackenzie, of Coule, in defiance of all preconceived medical opinion, advocated, in his work on *Sheep*, published in 1809, the employment of mercury to stay the progress of rot, and in the same work, *or one very like it*, as lately published anonymously by the Society for the diffusion of useful knowledge, under the title of the *Mountain Shepherd's Manual*, the utility of this dangerous procedure is as firmly maintained. At the same time Sir George, though rather in the dark as to the real nature of the disease, admits, in both editions, that tubercles exist in rot, especially in the lungs. Now, if he had inquired of any medical person what drug ought, when tubercles are present, of all others to be avoided, he would have found that medicine to be mercury. The administration of it therefore in rot, no matter what may be the form or mode in which it is exhibited, will to a certainty aggravate the symptoms and shorten life. If, for the sake of doing something, you will *endeavour* to remove the worms, Chabet's animal oil will be found a safe and efficacious remedy; but, if my opinion can have any weight, I would recommend the farmer to allow them to remain.

Sheep, when displaying symptoms of rot, should always be kept dry and warm. If they must be retained throughout the winter, good sound solid food, such as well-made hay or oats, should be afforded them, and the shelter of a straw yard should if possible be obtained. A liberal supply of salt should be given with all their provender; and if they do not seem to relish it, give them occasionally a small quantity in water as a drench. —*Praire Farmer.*

Value of Irrigation.—A small field of poor and almost valueless land in Scotland being irrigated, the second year the burthen on an imperial acre being weighed, it was found to have yielded 9,680 lbs. of well dried hay.—*Am. Ag.*

CULTIVATION OF CELERY.

New York, Dec. 12, 1844.

Dear Sir: The cultivation and growth of celery, that most excellent and wholesome winter vegetable, requires close attention of the gardener to bring it to perfection.

A practical gardener will soon learn the art; and for the benefit of those who have yet to learn it, I beg to hand you the result of my own experience for the last 25 years.

In this country, it is n ' necessary to sow the seed b fore the month of May, and then in the open ground, well manured with stable dung thor ughly cured, and not less than a year old The color, whether white or red, is a matter of taste. I generally mix my seed, and thus have both species. The seed is slow of vegetation, but, if good, never fails to germinate. Whether the seed be sown broadcast or in drills, is a matter of no consequence; as the seed being very small, the plants are sure to shoot up thick. So soon as the sprouts have attained the height of an inch, they should be pricked out in a bed of rich mould, at a distance of about three inches each way from each other. You cannot have good strong stocky plants without pursuing this method. If left standing in the seedling bed, they will grow spindling, weak, and consumptive. No more attention is required, excepting that of keeping the plants perfectly free from weeds, until August, when you will find the plants strong, healthy, and vigorous. Any time in this month, dig your trenches 18 inches deep and as many wide. For this purpose, I generally occupy the ground that has been used for early peas.

The quality of the celery, and chiefly its growth, depend entirely upon stable manure. I have found the manure used for early hot-beds the best. It never fails of success. The increased fermentation of the manure, by the repeated waterings of the beds, the escape of ammonia and noxious qualities of the manure, renders it sweet, and capable of imparting the mildest and richest flavor to the plant. If fresh manure from the yard, of whatever kind, is used, the celery will invariably grow strong and rank, with as little delicacy of flavor as there is in the manure. With a garden fork of four tine, strike through the manure in the trench into the earth beneath, and bring it up fresh, carefully mixing it with the manure as you proceed from one end of the trench to the other. Attention to this point is indispensable to the growth of good celery.

The plants taken up should be trimmed about the crown, just at the top of the root; all the young suckers taken off leaving the plant trim and neat, with all its main stocks. With a dibble, which should be as large as the handle of a spade, as the roots will now be of considerable size, begin at one end of the trench with your face towards the other, and set in a single row of plants in the middle of the trench, and not less than six inches asunder; water them well. No teetotaller loves water better than celery. It cannot have too much. The roots of this plant require more room than is generally allowed them, as any one may see when they are taken up for the table.

Earthing up the plants should be delayed until they have attained a good size; and then it requires care, especially the first time. I always get into the trench myself, and, holding the plant with all its stalks firmly in my left hand, with a short-handled small hoe draw the earth up round the plant, without allowing it to come in between the stalks. When this is done, and the plants thus protected, you may with a spade, strike off the edges of the trench, and partially fill it. As the plant grows, (as it now will, if well watered in dry weather, with great vigor,) continue to earth up, and by the first of November the plants will be two feet above the level of the earth, with a main stalk the size of a man's arm.

Sometimes, particularly if the season be dry, celery is liable to be attacked by a fly. In that case, you will see the tops of the celery turn brown and wither. The moment that symptom appears, no time is to be lost in calling in the doctor; for the whole stock is at stake. The cause of this disease is the sting of a fly upon the leaves of the celery. The egg is deposited between the integuments of the leaf, and soon hatches a small white worm—sometimes visible on opening the leaf to the naked eye, always by the aid of a microscope. If not attended to, the disease gradually descends to the root, and the whole plant falls a sacrifice. Amputate every defective and diseased leaf; and early in the morning, whilst the dew is on, sift on the whole of the plants fresh slacked lime. One such powdering is generally sufficient; but if not, give them another dose, and the first rain that falls will wash the plants clean, and you will probably see them fresh, green, and stretching away towards maturity.

With regard to the mode of securing the crop for winter use, gentlemen have their fancies. I prefer leaving the plants in their original trenches, earthing up to the top of the plants, and covering with straw litter and boards, so as to protect them sufficiently from the frost, to be able to take them up as wanted; and this always fresh and sweet. I do not fancy disturbing the roots, and transplanting into narrow quarters.

Finally, any one in this country who wishes to have "first rate" celery must cultivate it himself. Common laborers are sure to spoil it. Professional gardeners are seldom found, and generally too expensive when they are.—*Far & Mec.*

MAKING POTASH.

We have been asked what kinds of wood will produce the most potash. The following table exhibits the average product in potassa in several plants, according to the researches of Vanquelin, Petuis, Kirwan, and De Saussure:

In 1000 parts	Potassa
Pine or fir	0.45
Poplar	0.74
Beechwood	1.45
Oak	1.53
Boxwood	2 38
Willow	2.85
Elm and Maple	3.90

We are of opinion that this table is a pretty fair criterion of the amount of potassa to be found in American trees. It is well known among those practically engaged in the manufacture, that the sugar maple is among the most valuable we have for making potash, and this tree, till transplanted from America, was unknown in Europe. We have no doubt there are several others highly valuable, and we hope what we have now said on this head will induce some one to give us full particulars on the whole subject. But it is not of much importance to the manufacturer of potash to know what kind of wood will make the most, unless he is a purchaser of ashes solely for this purpose. Those who make potash, usually do it from the ashes of the forest cut down to clear up the land for cultivation; the potash, therefore, is only a secondary consideration with them. They will see from the above table, that the ashes of elm and maple are the most valuable to make potash, and pine the least so. We wish some capable person could be induced to experiment on the ashes of American trees. It would be a matter of considerable importance to the country to do so. Of the manner of making potash, a friend thus writes us:

Forty years ago I was engaged in this business. My ashery building was forty feet square, with a deep underground story without a floor, ten or twelve feet from the ground to the timbers overhoad, with an attic story to receive the ashes. My vats were both square and round (the shape being immaterial,) with sliding doors in the floor of the attic, through which the ashes passed into the vats: the water was brought in pipes, and conducted into them as needed. The ley was conducted by small troughs from the vats into the boilers, which were large potash kettles, and set three in a furnace, one behind the other. The back kettle always boils first, and evaporates faster than the one next the mouth of the furnace. This boiling was continued until all the watery particles were evaporated, and a thick, dark substance formed, called salts. A very hot fire was still kept up, until the whole mass was melted; when it was dipped out with an iron ladle with a long handle, into iron kettles, to cool. Here it becomes a solid mass like a rock, and is then broken in pieces and put into strong air-tight casks for shipment. Lime ought always to be used in extracting the ley. This may be done by laying it over the straw at the bottom of the leach; or by laying it upon the top of the ashes after the leach is filled, and filtering the water through it; or it may be mixed in very small quantities with the ashes as they are put into the leach. I have used it in all these ways, and have found it to answer equally well in each. When the ley becomes so weak that it will not bear up an egg or potatoe, it ought then to pass through a fresh leach of ashes, until there be little or no strength to it, thus saving all that is valuable.

All cannot have a side hill on which to erect an ashery; some must, consequently, build on level ground; but it is not as convenient.

The ashes ought all to be drawn away and spread upon land, as they are emptied from the leach. I have seen hills of leached ashes lying about an old ashery, when the land contiguous would have been doubled in value by having them spread upon it. Being about to embark in making potash again, I shall anxiously wait before doing so, to hear from some manufacturer, through your columns, on this subject, before I commence. I am desirous of availing myself of any improvements on this old method.—*Am. Ag.*

To get Rid of Rats.—Several papers say, put plenty of fresh lime about all their haunts.

The *Mississippi Valley Farmer* recommends to besmear their dens with tar, as they in common with all other rogues dislike a coat of this material.

These are ways to drive them off; but if you wish to catch them, fill a barrel two thirds full of water, and cover the water with oats or bran, and fix a run by putting a board with one end over the barrel.

Colic in Horses.—Messrs. Editors: In looking over an old file of the *Prairie Farmer* I saw an inquiry from one of your readers wishing to know the best remedy for colic in horses, caused by eating corn. If the following will be any use to your correspondent, you are welcome to it.

Three years ago I had a valuable mare seized with the colic, caused by eating new corn, and heating by driving immediately after. Her symptoms were of the worst character; and as we had lost several valuable horses from the same cause, I considered her case almost hopeless. I however bled her freely from the mouth. I then dissolved a piece of opium, about two-thirds the size of a hazle nut (say about 20 grains,) in half a pint of brandy and poured it down her; I then put her into a buggy, and started immediately home. Before I had gone three miles she was perfectly well.

Another excellent remedy for flatulent (wind) colic in horses is 1 oz. laudanum and 1 oz. essence peppermint mixed and poured down the horse. This, if taken early, will seldom if ever fail. In bad cases, however, bleeding from the mouth would greatly assist the remedy.

W. A SANGER.

Shabbonas Grove, De Kalb co. Ill.

—*Prairie Farmer.*

CEMENT AND WHITEWASH.

Quick lime, or lime deprived of its carbonic acid gas, and water of crystalization by heat, does not readily recrystalize when not in immediate contact with other crystaline substances, of which clean silicious sand appears to be the best, but if it is left a sufficient length of time after being calcined to become saturated with a return of the carbonic acid gas and water, from the water and also from the atmosphere, it will gradually harden to the solidity of chalk, of which nature's laboratory has produced an abundance, and time has not effected any greater result, for but a short time hence it may be readily perceived that when quick lime has been with air or water slaked for a period sufficient to have become carbonized to any considerable amount it is no longer capable of making a durable cement, and time seems to produce but a small effect in its cementing properties as may readily be perceived by examining the mortar in any of the old buildings that are continually taking down in this city. I have examined the mortar in a great many of them and have never found any that had become hard that was made from the bulk lime, or was slacked before it was brought to market, and the lumps of dry lime found unmixed with the sand would pulverize between the fingers like a lump of dry flour, and the small particles of lime when in contact with the sand after being detached would be found but a little better; to produce a good cement, that will continue to grow harder by time, the lime should be used after being calcined, the sooner the better, if while being slacked and in a fluid state clean, sharp sand should be well incorporated with it, in the proportion of from one of lime to five or six of sand and applied to immediate use the cement will continue to harden for ages to come, as may be seen by examining any of the mortar from the remains of the ancient ruins of the old world, hence the frequent observation that the ancients made their mortar in a better manner, or from better materials than the moderns; but should the lime become partially carbonized, or what is commonly termed air slacked, or should it be incorporated with common earth or earthy sand, the above result could not be expected, as lime will not crystalize on a soft substance. The same beneficial effects may be obtained for a lime wash for out buildings, stone walls, fences, &c., by slacking quick lime to a fluid state and stirring in clean sand with a small quantity of sifted wood ashes, and a little rock salt to hasten the crystalization, and applied to immediate use with a white wash or paint brush, will last for years, no paint can be made to last so long; there are specimens on this island of wash put on in the manner above described of more than twenty years standing, and which appears to be nearly as fresh and fair as when first applied.—*Farmer and Mechanic.*

To destroy Rats.—The following recipe for the destruction of rats, has been communicated by Dr. Ure, to the council of the English Agricultural Society, and is highly recommended as the best known means of getting rid of those most obnoxious and destructive vermin. It has been tried by several intelligent persons, and found perfectly effectual.

"Melt hog's lard in a bottle, plunged in water heated to about 150 Farenheit; introduce into it half an ounce of phosphorus for every pound of lard, then add a pint of proof spirit or whiskey; cork the bottle firmly after its contents have been heated to 150, taking at the same time out of the water-bath, and agitate smartly till the phosphorus becomes uniformly diffused, forming a milky looking liquid. This mixture being cooled, occasional agitation, at first, will afford a white compound of phosphorus and lard, from which the spirit spontaneously seperates, and may be poured off to be used again, for none of it enters into the combination, but it merely serves to comminute the phosphorus, and to diffuse it in very fine particles through the lard. This fatty compound, on being warmed very gently, may be poured out into a mixture of wheat flour and sugar incorporated therewith, and then flavored with oil of rhodium, or not, at pleasure. The flavor may be varied with oil of aniseed, &c. This dough being made into pellets, is is to be laid in rat holes. By its luminousness in the dark, it attracts their notice, and being agreeable to their palates and noses, it is readily eaten, and proves certainly fatal. They soon are seen issueing from their lurking places to seek for water to quench their burning thirst and bowels; and they commonly die near the water. They continue to eat it as long as it is offered to them, without being deterred by the fate of their fellows, as is known to be the case with arsenical doses. It may be an easy guide for those who are desirous of following Dr. Ure's prescription, and may not have a thermometer at hand, to know that a temperature of 150 of Farenheit is equivalent to a degree of heat, midway between that at which white of eggs coagulates, and white wax melts."

To make Vines Grow.—Some farmers complain that they cannot raise any melons or cucumbers. The vines will not grow, and if they do will not bear. If such farmers have any fowls, let them roost where the manure can be easily collected, and when the vines are planted next spring, apply a small quantity of this manure in each hill. There is nothing else like it. It is the best guano that can be had. In planting, however, be careful and not put the seeds in contact with it, or they will not vegetate.—*Prairie Farmer.*

Roses.—I beg to mention a mode of managing Standard Rose trees, differing widely from the one formerly in vogue, and one which is very much admired here. I never prune or cut back the head of the tree, but merely thin out the very small weak wood, leaving all the strong and medium sized shoots to grow to their full extent. I have observed that in most varieties, the medium-sized wood blooms most freely, and treated in this way my trees are literally covered with flowers resembling in their profusion and luxuriance the wild Dog Roses of the hedge-row. I do not recommend this plan where Standard Roses are planted among beds of American plants, although, in my opinion, such is a most desirable situation for them; in such circumstances, however, the size of their heads would of course greatly depend on the nature and growth of the plants among which they were placed. When Standard Roses are planted singly on lawns or in avenues, nothing in my estimation can be more unsightly than the unnatural looking mop heads into which they are generally pruned, and which will not produce a hundreth part of the bloom as when managed as above described. I remove the soil over the roots once in three years without disturbing the trees, and I replace the old soil by a little loam and manure, which I find very much invigorates the trees and renders them capable of bearing their large heads, which almost conceal their naked stems.—*J. L. Snow, Swinton Gardens, Beadle.—Gard. Chron.*

Culture of Fruit Trees.—Mr. Allan Coffin, of Edgartown, in a letter to the editor of the *Albany Cultivator*, says:

"In the *New England Farmer*, of May 11, 1842, page 355, there is a letter I wrote, which differs a trifle from the following statement:—

Our island is surrounded by the ocean; it is twenty-one miles long and five wide. But little fruit has ever been raised on it, and that little very inferior. It has often been said, it is impossible to raise good fruit on this island. Eleven years ago I hired a man to set out seventeen apple trees. He dug very small holes, and set them out in a very short time. The spring following, I set out one apple tree. I dug the hole ten feet in diameter and three feet deep. The subsoil (yellow earth) was carried away, and the whole filled with sods inverted and rich earth. *That tree has borne more apples than all the others.* This spring it measured thirty-four and three-quarter inches in circumference near the ground. The largest of the others is twenty-three and one-quarter inches. Had I given ten dollars a piece to have had them set out as they should have been, instead of having them set out as they were, I believe it would have been money well laid out.

"One of my trees has borne no fruit. This spring (1844) I examined it, and instead of having the roots to extend horizontally, or nearly so, they turned directly down."

Yellow Water in Horses.—You have published a series of articles on the diseases of sheep, and I, for one, am anxious to learn more about the diseases to which stock of all kinds are liable. I was forcibly struck with the article on colic in horses by T. N. Welles in your January number, and consider it worth twenty times the price of your paper. The only fault I find with it is, it don't sufficiently describe the symptoms which distinguish colic from bots.

I have lately had to treat a sick horse—a valuable brood mare—and being entirely in the dark as to her ailment, labored under the greatest embarressment. All who saw her said she would die. I bled, drenched with salts, and gave a variety of remedies by the advice of my neighbors, but all to no puupose—the mare got worse and worse. Finally I gave her up and quit doctoring her.

Meeting with an old farmer who had great knowledge of the disease of horses, I described her symtoms to him and he told me she had the *yellow water*, and to give a gill of spirits of turpentine and a gill of spirits of camphor, shook together in a pint of warm water every morning for a week, and it would cure her. I did so and the mare got well and is now fattening up with astonishing rapidity and in as good spirits as ever. I consider the remedy worth a hundred dollars to me.

Her symptoms were, a breaking out on the skin, the sores running together and forming large scabs of matted hair the size of the hand—drooding—swelling and stiffness of the legs—emaciation—enormous appetite—reeling and staggering in walking—great reluctance to moving about, &c.

Hoping this will call forth other valuable information on veterinary subjects, I remain, &c.—*Praire Farmer.*

Colic in Horses. Quarter Ail in Cattle.—I am satisfied colic is not as common as many imagine. Horses are frequently driven so long without being permitted to stop, that the great amount of water secreted in the bladder causes excessive pain and is frequently discharged with great difficulty, and sometimes cannot be discharged at all. I relieved a mare a short time since from all the symptoms of a severe colic by exciting a desire to avoid the water by pouring water slowly on the ground near her; the effect would be greater to pour from one bucket to another. Perhaps some medical gentleman, or one experienced in such matters, could suggest a more effectual mode of relief.

R. L. Sargent, of Warrenville, recommends copious bleeding for the quarter ail in cattle, the disease of last season. If it appear in one of a flock of cattle, bleed the whole. He is satisfied that he has saved many by this means. I saved one calf by giving a pint of soap and milk when first attacked. A. Cruggins. —*Praire Farmer.*

PRODUCE OF DIFFERENT STATES.

From the annual report of the commissioner of patents, of which we are glad to see Congress has ordered some 50,000 copies to be printed, we compile the following facts, founded upon estimates about the agricultural produce of 1844.

Of wheat there were produced *ninety-five million* bushels, worth, perhaps, on an average, 75 cents per bushel, equal to $71,250,000. Of this quantity Ohio produced the largest, say about 16,000,000 bushels; New York comes next with about 15,000,000; Virginia and Pennsylvania raised about the same quantity each—between 10,000,000 and 11,000,000. Tennessee comes next with near 7,000,000, and then Indiana with 5,500,000. Michigan is next, 4,250,000, being more than Maryland by nearly 250,000

Of oats there were raised 172,250,000 bushels. In this grain New York takes the lead considerably, producing over 31,000,000, Pennsylvania 24,000,000, Ohio, 20,000,000, Virginia, 14,000,000, Kentucky, Indiana and Illinois, each between 10 and 12,000,000. The value of this crop at an average of 20 cents per bushel would be $34,000,000.

Of Indian corn there were raised 422,000,000 bushels, equal, at 25 cents per bushel, to $105,500,000. Tennessee is by far the largest raiser of this grain—being down in the table 61,000,000 bushels; Kentucky and Ohio each raise about 48,000,000, and Virginia 38,000,000, Indiana, 24,000,000, North Carolina, Georgia and Alabama about 22,000,000 each, New York, Pennsylvania and Illinois about 19,000,000 each, South Carolina and Missouri about 13,000,000 each. It is mainly, therefore, a product of the South and South-west.

Of potatoes the crop is but at 100,000,000 bushels, worth at 20 cents, $20,000,000. New York raises 17,000,000, Maine 12,500,000, Pennsylvania 7,000,000, Vermont 6,000,000, Michigan 5,500,000, Massachusetts, N. Hampshire and Ohio nearly 5,000,000 each.

Of hay, there were 17,000,900 tons, worth at $6 per ton, $102,000,000: the second most valuable product of American agriculture, doubling that of cotton, as will be seen below. New York raises about 5,000,000 tons; Pennsylvania, Indiana, and Ohio about 2,000,000 each; Maine and Vermont, 1,250,000 each; Massachusetts, New Hampshire and Connecticut, from six to seven hundred thousand tons each; New Jersey and Illinois about 275 thousand each, and Virginia 444 thousand.

Of cotton the crop is but at 872 million lbs., equal, at six cents per lb., to fifty-two million two hundred and twenty-six thousand dollars. Georgia raises the largest quantity—213 million lbs; Mississippi 195 million; Louisiana 154 million; Alabama 140 million; North Carolina 51 million; South Carolina 49 million, and Tennessee 39 million; Arkansas 14 million; Florida 9 million.

Of sugar the estimate is 201 million lbs. equal, at 2½ cents per lb. to $5,000,000. Louisiana produces 100 million lbs., and the next highest is Indiana, with her maple sugar, 7,250,000; Ohio and Vermont each produce about 4,250,000.

Of rice there are grown 111 million lbs.

South Carolina has almost a monopoly of this staple, raising about 84 million lbs. Georgia raises between 17 and 18 million, and Louisiana about 5 million.

Of tobacco, there are grown about 152 million lbs.

Kentucky takes the lead in this article, raising about 58 million; Tennessee and Virginia each raises about 33 million; Missouri 12 million, Ohio 6 million, and Maryland not much more over five hundred thousand lbs.

From this estimate of the quantity and value of the chief agricultural crops of the United States, it results that Indian corn is the most valuable of all our products. Hay comes next, and only just below. Its value exceeds that of wheat, which comes third, about fifty per cent., and doubles that of cotton, which stands fourth. Oats stand fifth, and potatoes sixth.—*N. Y. Courier and Enquirer.*

Cement.—The diamond cement for uniting broken pieces of china, glass, &c. which is sold as a secret at an absurdly dear price, is composed of isinglass soaked in water till it becomes soft, and then dissolved in proof spirit, to which a little gum resin, ammoniac, or galbanum, and resin mastic are added, each previously dissolved in a minimum of alcohol. When to be applied, it must be gently heated, to liquefy it; and it should be kept for use in a well-corked vial. A glass stopper would be apt to fix so as not to be removeable. This is the cement employed by the Armenian jewellers in Turkey for glueing the ornamental stones to trinkets of various kinds. When well made it resists moisture.

Shellac, dissolved in alcohol, or in a solution of borax, forms a pretty good cement. White of egg alone, or mixed with finely sifted quicklime, will answer for uniting objects which are not exposed to moisture.

A cement which gradually indurates to a stony consistence may be made by mixing 20 parts of clean river sand, two of litharge, and one of quicklime, into a thin putty with linseed oil. The quicklime may be replaced with litharge. When this cement is applied to mend broken pieces of stone, as steps of stairs, it acquires after some time a stony hardness. A similar composition has been applied to coat over brick walls under the name of mastic.

The iron-rust cement is made of from 50 to 100 parts of iron borings, pounded and sifted, mixed with one part of sal-ammoniac, and when it is to be applied moistened with as much water as will give it a pasty consistency.

Black Ball for Leather.—Bees-wax, 2 pounds; tallow, ¼ pound; gum arabic, ¼ pound; lamp-black, ¼ pound. Melt the tallow and wax, then cool a little and stir in the black and gum, previously make into a thick mucilage,

Cure for Distemper in Cattle.—The Earl of Essex says, that this first showed itself in one of my cattle by discharging abundant saliva from the mouth, with sore and inflamed tongue and gums, very dull, no appetite, confined bowels and very hot horns. I then desired the bailiff to give the animal one-half pint of the spirits of turpentine, with one pint linseed oil: repeating the oil in twenty-four hours, and again repeating it according to the state of the evacuations. At the end of twenty-four hours more, the bowels not having been well moved, I repeated both turpentine and oil. In two days the beast showed symptoms of amendment, and in three or four took to his food again, and did perfectly well. All the yard beasts, and two of the fattening beasts, have had it (five others I had sent to London before the disease appeared,) and all have been treated in the same manner with perfect success. Half a pint of turpentine is the smallest, and one pint the largest dose, during three or four days. Little food, besides oatmeal gruel was given.—*Am. Ag.*

Yeast from Potatoes.—As it is sometimes convenient to know more than one mode of making an article, we will give you an old method of making potato yeast, which we have somewhere met with. Boil potatoes, of the best and most mealy sort, (for poor, heavy, waxy potatoes are good for nothing for this business,) till they are thoroughly done and their skins begin to peel off. Strip off the skins, and mash them up very smooth, and put as much hot water to them as will make the mash of the consistency of common thick cream. Then add to every pound of potatoes two ounces of coarse brown sugar, or molasses will answer, and when blood warm, stir in for every pound of potatoes two spoonsful of old or common yeast. Let this ferment for twenty-four hours.

A pound of potatoes will make in this way very nearly a quart of yeast, and which will keep well for three months—so the cook says. She also says you must lay your bread eight hours before you bake it.—*Maine Farmer.*

Mildew has been shown by naturalists to be a minute fungus, whose germs are floating in the atmosphere, and only require for their development, a particular condition of the surface of whatever plant they attack. Thus, their growth is, doubtless, favored—perhaps insured—by the exudation of sap from the ruptured vessels of the wheat plant, on which they may alight. This rupture may be caused by a plethoric state of those vessels—perhaps, also by a deficiency of silex in the epidermis of the straw; and this condition is brought on by whatever occasions a great flow of sap, or causes it to continue too long; and the indications of it are a deep green color in the leaves and straw, and the continuance of this dark green color a few inches below the ear after the chaff has begun to turn off. When this symptom appears, a bad case of mildew is inevitable.

That the excessive use of nitrogenous manures will produce this disease is evident, from the mildew which follows the use of nitrate of soda and guano, on rich soils and in growing seasons, as a dressing for wheat—from that, also, which attacks the wheat growing on the sites of dung-heaps, when other parts of the field are free from it—and also from the usually diseased state of wheat grown in highly cultivated gardens. A continuance of warm and humid weather, which produces a rapid and luxuriant growth of leaf and straw, and keeps the plant in this state when the growth ought to be approaching maturity, is highly favorable to the development of mildew.—*Am. Ag.*

Indian Slap Jacks.—Scald a quart of Indian meal—when luke-warm, turn, stir in half a pint of flour, half a tea cup of yeast, and a little salt. When light, fry them in just fat enough to prevent them sticking to the frying pan. Another method of making them very nice, is to turn boiling milk, and water on the Indian meal, in the proportion of a quart of the former to a pint of the latter—stir in three table spoonsful of flour, three eggs well beaten, add a couple of teaspoonsful of salt.

Tea Wheat or Siberian Bald.—This is a spring wheat, one of the most valuable of the spring varieties. It is extensively cultivated in New England and in the north part of this State. Straw not long, very bright, the heads bald, and with a beautiful white berry producing flour of good quality. The straw is not so large as the Italian, ripening earlier; the berry sits more close in its chamber, not subject to rust. I have cultivated it for several years.

Black Sea Wheat was first introduced into the State of Maine, and has been successfully cultivated there for several years, as well as in some of the other New England States. It has succeeded the best of any of the spring varieties in Vermont; being earlier in maturing, is less affected with the grain worm—seldom rusts or mildews. This is a white chaff, bearded; straw soft, very subject to get down, which does not injure it in filling; berry long and red, weighs well, bran thick, producing flour of an inferior quality. Its early ripening gives it the preference to others.—*Gen. Harmon, in the Transactions N. Y. State Agricultural Society.*

Relief of Choked Cattle.—It is not. I believe, known among farmers that an ox or cow may be relieved in one minute from the danger of death and anguish of pain produced by a potatoe or any other body lodged in the œsophagus or passage to the stomach, by an operation so simple that any boy in his teens may perform it, without the least danger to the patient. Take a common carriage whip, the butt or handle end of which is an inch or an inch and a quarter in diameter, and smooth; let an assistant raise the head of the beast to be operated on, so high that the lower jaw will be parallel with the lower part of the neck; thrust the butt into the mouth and push forward boldly but steadily, till you have pushed the potatoe or substance into the stomach. I feed my cows with potatoes without cutting them, as I have no fears of their being injured by choking, the remedy in that event being so simple. I have peformed it several times.—*Alb. Cult.*

Manure versus *Good Cultivation.*—I am convinced that it is much more important to attend to the latter than to the former of these two means of improvement; and that national, as well as individual wealth, may be more increased by the latter of the two; for I am convinced, that nothing like the full extent of the inherent powers of the soil is taken hold of by our generally too superficial method of cultivation.

1st. Thorough draining, which soon changes the nature and texture of the soil for the better, to double the depth that is ploughed.

2nd. Deep cultivation with the plough, and not omitting subsoil-ploughing, if it be but four or six inches in depth; a little is better than none.

3rd. Moving the soil, or fallowing well; giving unremitting diligence to move and pulverize the soil on every opportunity, but more especially in summer and in dry weather; taking care to have a good depth of soil at the finish.—*A Leicester Farmer.—Ag. Gaz.*

Agriculture.—What is actually known, even by the most learned, is still greatly less than that which remains to be acquired. How many questions are there which the practical man may ask, and which the professor of all our present theoretical knowledge cannot satisfactorily answer! How many questions suggest themselves to the mind of the student in theoretical agriculture, which he records as subjects of future experimental investigation, for which, if time present, he may wish himself to find solutions, or to which he may anxiously wish to persuade others to seek for answers by laborious chemical research!—*Jour. of Agriculture.*

A good Compost for Sandy Land.—Take 10 loads of stable or barn-yard manure, 5 loads of clay, 10 bushels of ashes, and 20 bushels of lime, mix the whole well together, let it remain in a pile a few days, turn it over, when it will be fit to apply to the land.

The above quantity will make a better dressing for an acre of sand than twenty, or even twenty-five loads of stable or barn-yard manure alone, and will last longer. Let any one who may doubt, try it, and they will be convinced of the truth of what we say.—*Am. Far.*

Lard.—The separation of the two proximate constituents of lard, viz: elaine and stearine, or, in common phraseology, lard oil and candle-stuff, has been for several years an object of pursuit, and is now accomplished in a very perfect manner. The chemical processes described in my last report for separating these substances, seem to have been, in a great measure, superseded by mechanical agency; pressure, when applied in a certain manner, being found fully to answer the purpose. The most valuable improvement, and one for which a patent has been granted, is the application of pressure to the solid tissues containing fat, before they have been burned, (or, rather, overheated in the process of trying out, as it is called. The lard and oil produced in this way, are purer, sweeter, keep much better in the warm climates, and are rendered in large quantities. A foreign patent has been granted for purifying oils, particularly for soap oils, by forcing air through them when in a heated state.—*Ellsworth.*

Good Butter Cow.—We notice in the *Massachusetts Ploughman* that a three-year old native cow belonging to Mr. George Jewett, suckled her calf five weeks, supplied one family with milk during the season, and made in one year, 573 lbs. 12 oz. butter. Her feed was hay and grass alone. If this be so, she is an extraordinary heifer, and we would like to see a more particular description of her.

Lampblack.—A mode of making lampblack has been patented; which, it is asserted, produces a much larger quantity from a given weight of resin than the old method, in which the smoke from the burning resin was carried through long chimneys, and condensed upon bags or mats—that portion of the smoke passing out of the chimney which would have made the finest carbon or lampblack. In the new process, the smoke is received in a very large apartment, and condensed upon the walls and floor, from which it is brushed off when sufficiently accumulated. The apartment is made tight, and without ventilation; and the calculation is so made, that the amount of oxygen in the air of the room will be more than sufficient to consume all the resin which is put into the furnace. As soon as one burning is over, and the smoke all condensed, the windows are opened, a fresh supply of air admitted, and the operation again repeated.—*Ellsworth Report*, 1844.

Stick to it.—Yes, stick to your business, if it is small; it may soon increase. But if you do no more than you have for the past few months, it is much better than nothing. If you change your business every year, you will always be poor. The only way to be successful is, to engage in business, and stick to it.

Remedy for Worms and Insects in the Stomach of Calves.—Take 1 pint of spirits of turpentine, 1 pint train oil, 2 oz. spirits of vitriol, 2 oz. asafœtida, 2 oz. hartshorn. Mix the whole together in a bottle, and shake it well before it is used. Pour a table-spoonful of the mixture down each nostril of every calf, for three successive mornings; the calves must be kept *fasting* the night previous to giving the dose. Should the first trial not succeed, repeat the dose in the course of a week.

Tanners' Bark is slow of decomposition. On this account it is generally neglected as a manure. The best way of employing it is, undoubtedly, in the form of compost with lime and earth, or with liquid or solid farm yard manure, by which procedure decay is speedily effected. Tanners very frequently burn their spent bark, and apply the ashes to their ground.

Cure for Poll Evil.—Take a lump of pearlash half an inch in diameter and force it into the core of the sore, once in ten days for two or three times, which will in all probability effect an entire cure. I have seen several cases of the worst ever known to me, cured in this way, without any other application.
—*Praire Farmer.* J. H. Bowen.

Smoking Hams.—We are assured by an intelligent farmer that hams are very effectually preserved from the attacks of the fly, while their quality is not all injured, by throwing red pepper upon the fire in the smoke house, during the latter part of the operation.

It is no honor to be rich, and no disgrace to be poor; therefore it is exceedingly foolish to strive after the appearance of wealth if we are poor, and be ashamed of the poverty which circumstances have brought upon us. This folly is a source of continual misery, and is seldom productive of any good.

The modest deportment of those who are truly wise, when contrasted with the assuming air of the ignorant may be compared to the different appearance of wheat, which, while its ear is empty, holds up its head proudly, but as soon as filled with grain, bends modestly down, and withdraws from observation.

A Recipe for Housekeepers.—To make blue wash for walls, get a pound of blue vitriol from a drug store, and have it powdered in a mortar. Provide also two quarts of lime. Take six cents worth of glue, boil it in a quart of soft water till thoroughly dissolved. Put the powdered vitriol in a wooden bucket, and when the glue water is cold, pour it on the vitriol, mix and stir it well. When the vitriol is dissolved in the glue water, stir in by degrees the two quarts of lime. Then try the tint of the mixture by dipping a piece of white paper into it, and when it dries you can judge if it is the color you want. It should be a clear, beautiful blue. If too pale, stir in a little more powdered vitriol. It is well to provide an extra quantity of each of the articles, in case a little more of one or the other should be required upon trial of the color.—*American Farmer.*

Scab in Horses.—Sir,—In reply to K. L.'s letter of last week, the following recipe has invariably proved successful in curing what he calls the abominably cutaneous disorder, the scab in horses; viz: take of

Mild mercurial ointment, 6 oz.
Sublimated sulphur, powdered white hellebore, of each 1 oz.
Palm oil, 4 oz.

Mix an ointment.

It is essential that it will be well rubbed into the affected parts.

I am, Sir, your obedient servant, J. J.
Author of "The Hand-Book of Farriery."
Mark Lane, Ex. (*Eng.*)

Cure for Quinsy—Simmer hops in vinegar a few minutes, until their strength is extracted; strain the liquid, sweeten it with sugar, and give it frequently to the child or patient, in small quantities, until relieved. This is said to be an excellent medicine.—*Davenport Gazette.*

FROM THE PRACTICAL RECEIPT BOOK

Tincture of Roses.—Take leaves of the common rose (*centifolies,*) place them, without pressing, in a bottle, pour good spirits upon them, close the bottle, and let it stand until it is required for use. This tincture will keep for years, and yield a perfume little inferior to otto of roses. A few drops of it will suffice to impregnate the atmosphere of a room with a delicious odour. Common vinegar is greatly improved by a very small quantity being added to it.

Rennet, or Wine Custard.—Very simple and prepared in five minutes. Cut a bit of rennet about four inches square into strips, which put into a bottle filled with wine. It will be fit for use in two or three weeks. To make your custard, first *warm and sweeten* the milk, then stir into it a teaspoonful or tablespoonful of the rennet wine, according to its strength, and pour immediately into a pudding-dish, or cups, as you prefer; put away in a cool place for an hour, and grate nutmeg on them. The whey, of which you can make enough, by the addition of extra wine when you prepare it, is a very nourishing drink for invalids.

Sausages, quite rich enough for an Epicure.—Take 30 pounds of chopped meat, 8 ounces of fine salt, 2½ ounces of pepper, 2 teacups of sage, 1½ cups of sweet marjorum, passed through a fine sieve. For the latter, thyme and summer savory can be substituted if preferred.

Tomato Catsup.—To a gallon skinned tomatos add 4 tablespoonful salt, 4 do. black pepper, half a spoonful alspice, 8 red peppers, and 3 spoonsful mustard. All these ingredients must be ground fine, and simmered slowly in sharp vinegar for three or four hours. As much vinegar is to be used as to leave half a gallon of liquor when the process is over. Strain through a wire sieve and bottle, and seal from the air. This may be used in two weeks, but improves by age, and will keep several years.

1. *To preserve Apples, &c.*—Take apples, and pack them in clean, dry, chopped straw, so that they do not touch each other.

2. Dip each apple separately into melted wax, then pack as above.

To preserve Apples, Pears, &c. Take apples or pears, and peel them, then cut them into eights, observing to extract the core; dry in a kiln until quiet hard.

In this way fruit is kept in the United States for two or three years.

For use, wash the fruit in water, then pour boiling water on it, let it stand for a few minutes and use it as fresh fruit. The water forms an excellent substitute for fresh juice.

Substitute for Arrow-root.—Finest potatoe-starch, ¾ cwt.; lump sugar 8 pounds; finely ground rice, 21 pounds. Mix and sift through lawn. Yields 1 cwt. of excellent arrow-root.

Dr. Bailey's Itch Ointment.—Sweet oil, 1 pound; suet 1 pound; root alkanet, 2 ounces Melt and macerate until sufficiently colored, then add powdered nitre, 3 ounces; powdered alum, 3 ounces; powdered sulphate of zinc, 3 ounces; powdered vermillion, to color; oil of aniseed, to perfume; oil of spike, to perfume; oil of origanum, to perfume.

Balsamic Vinegar for Sick Chambers, &c.—Rue, sage, rosemary, lavender, cassia and cloves, of each, 1 ounce; camphor (powdered,) 2 ounces; strong vinegar, ½ gallon. Steep for one week.

Balls for removing Grease and Paint Spots from Cloth, &c.—Fuller's earth, 30 parts; French chalk, 1 part; yellow soap, 20 parts; pearlash, 15 parts. Make into a paste with spirits of turpentine, and give it a slight color with a little yellow ochre, then cut it into cakes. This form, omitting the French chalk, is that which is sold about the streets.

Blackberry Wine.—Ripe berries, bruised, 20 gallons; pour on them water, hot, 22 gallons. Let them stand three days, then add sugar, 40 pounds. Ferment, rack, and add ginger, bruised, 2 ounces; catechu powder, 2 ounces; red tartar 8 ounces; cloves ½ ounce.

Black Currant Wine.—Cold soft water, 20 gallons; fruit, 50 gallons; sugar, 60 pounds; ferment, then add red tartar, dissolved, 8 ounces; cloves, ½ ounce; dried orange-peel, ½ ounce; ginger, ½ ounce.

Black Dye for Cotton.—Acetate of iron as a mordant; and dye in a bath of madder and log-wood.

Black for Miniature Painters.—Take camphor, and set it on the fire, and collect the soot by means of a saucer or paper-funnel inverted over it.

Blacking Balls for Leather.—Ivory black, 1 pound; lampblack, 1 pound; common gum, ¼ pound; brown sugar, 6 ounces; isinglass or glue, ¼ ounce; water, 1 quart. Mix.

Paste Blacking.—Oil of vitriol, 2 parts; sweet oil, 1 part; treacle 3 parts; ivory black, 4 parts. Mix.

Black Ink Powders.—Sulphate of iron, 2 parts; galls, 5 parts; gum, 1 part. Reduce to a powder and divide into one-ounce papers, each of which will make a half pint of ink.

To kill Borers in Trees.—Stop up their holes with hard soap. It is a simple and a very good remedy.

To destroy Thistles, Fern, and Coltsfoot.—Run over your fields once or twice about the first of June, with a heavy cast-iron roller.

Cure for what is called Run-round on the Finger.—The first symptom of the disease is a heat, from swelling and pain, and a redness at the top of the nail. To cure—first open with a pin; then, with the point of a penknife, scratch the whole surface of the nail, both lengthwise and across. This alone, it is said, checks and cures the complaint.

Bleeding at the Nose.—To cure it, apply to the neck behind and on each side, a cloth dipped in cold water; or, put the legs and arms in cold water: or, wash the temples, nose, and neck, with vinegar: or, snuff up vinegar and water.

To prevent Swelling from a Bruise.—Imme-

diately apply a cloth, five or six folds, dipped in cold water, and new dipped when it grows warm.

A Burn or Scald.—If it be but skin deep, immediately plunge the part in cold water; keep it in an hour, if not well before. Perhaps longer.

A Deep Burn or Scald—Apply the inner rind of elder well mixed with fresh batter. When this is bound on with a rag, plunge the part into cold water. This will suspend the pain till the medicine heals. Or, mix lime-water and sweet-oil to the thickness of cream, and apply it with a feather several times a day. This is a most effectual application.

Chilblains.—Bathe the feet often in cold water, and when this is done, apply a turnip poultice.

Children.—To prevent the rickets, tenderness, and weakness, dip them in cold water every morning, at least till they are eight or nine months old. No roller should ever be put round their bodies, nor any stays used. Instead of them, when they are put into short petticoats, put a waistcoat under their frocks. It is best to wean a child when seven months old, if it be disposed to rickets. It should lie in the cradle at least a year. No child should touch any spirituous or fermented liquor. Their drink should be water. Tea, they should never taste till ten or twelve years old. Milk, milk-porridge, and water-gruel, are the proper breakfast for children.

Chin-cough or Whooping-cough.—Rub the feet thoroughly with hog's lard, before the fire, on going to bed, and keep the child warm therein. Or, rub the back, at lying down, with old rum: it seldom fails. Or, give a spoonful of juice of penny-royal, mixed with browr sugar candy, twice a day. Or, half a pint of milk, warm from the cow, with the quantity of a nutmeg of conserve of roses dissolved in it, every morning. In desperate cases, change of air will have a good effect.

Cholera Morbus, i. e. Flux and Vomiting of Bile.—Boil a chicken an hour in two gallons of water, and drink of this till the vomiting ceases. Or, decoction of rice, or barley, or toasted oaten bread. If the pain is very severe, steep the belly with flannels dipped in spirits and water. The third day after the care, take ten or fifteen grains of rhubarb.

Chops in Women's Nipples.—Apply balsam of sugar. Or, apply batter of wax, which speedily heals them.

To prevent Chopped Hands.—Wash them with flour of mustard, or in bran and water boiled together.

To Cure.—Wash them with soft soap, mixed with red sand. Or, wash them in sugar and water.

To Remove Warts on Cattle.—The common carrot with salt has proved effectual used as a poultice. The wild turnip (*arrum tryphillum*) has proved an efficient cure. It is acrid substance, and is applied fresh on cutting it in two.

The British Cultivator says, "a strong wash made of pearlash and water, applied thrice a day, will remove tumors and warts." Soda and water is a wash that is highly recommended. It might be several times repeated.—*Mass. Ploughman.*

Goose-Oil for sore Teats.—The same paper above, recommends this as the best article to heal sore teats and chopped hands. Washing the teats and hands in warm milk fresh from the cow, we have often found a good remedy, and rubbing them with cream still better.

Yeast Cakes.—Put two handsful of hops to three quarts of water, to which add, if you like, a couple of potatoes. When the potatoes are done, mash them in a pan with a sufficient quantity of flour to form a thick batter after the liquor is strained on to it. When nearly cool, add a teacup of good home-made or brewer's yeast, and keep warm till it becomes light. As soon as it is risen, add Indian meal till quite hard. Form into a roll of a few inches diameter, which cut in thin slices and put into a moderately warm place to dry. This yeast has the advantage of all others in this particular, it may be laid aside in bags and will keep sweet during warm weather. When you wish them for use, soak them thoroughly in milk-warm water, and take three or four for two common sized loaves.—*Am. Ag.*

Marshall Hall's Alcoholic Cure for Consumption.—One part of pure alcohol mixed with three parts of water, made tepid at first, but afterwards of the temperature of the atmosphere. Apply it in small quantities at a time, every five minutes, so that the application may always consist of alcohol and water. The application is thus made: a piece of soft linen is folded and re-folded to form six folds. Apply this across the chest, and high up on the neck. A sponge, the size of a walnut, is then filled with the lotion (the alcohol and water,) and pressed upon the linen along its whole course, the dress being opened for the purpose, and immediately closed The operation must be repeated every five minminutes.—*N. Y. Far. and Mech.*

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