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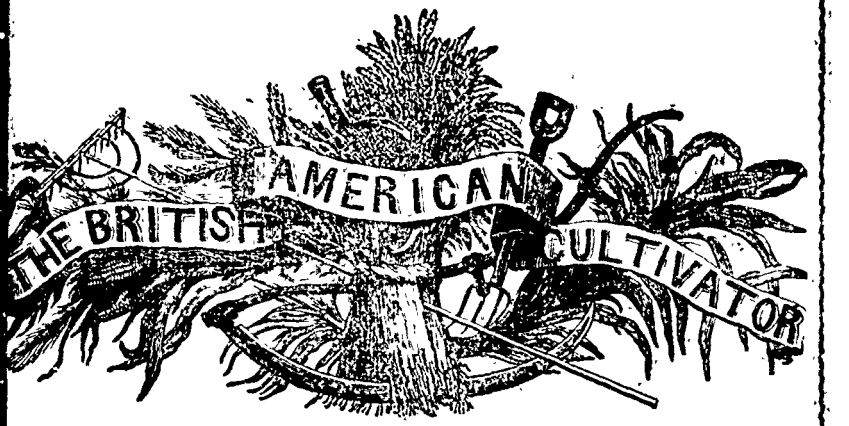


Agriculture not only gives Riches to a Nation, but the only Riches she can call her own."

ew Series. TORONTO, MARCH, 1847. Vol. III. No. 3.

Manufacture of Maple Sugar.

has been repeatedly stated that the rmers in this Province might, with a very ffling effort, manufacture all the sugar that required for home consumption, from the gar maple, and from the cultivation of the gar beet. In favourable seasons this result ght be attained from the former source, but the event of a failure, the sugar beet could cultivated for this purpose with much ofit. It is not generally known how much e purchase of sugar costs the Canadian ople annually, and for the sake of placing s question before our readers in a light at cannot be misunderstood, we have been some little trouble in investigating the tter. The imports of sugar cost the coun- in the year 1846, no less a sum than 80,000, one-fifth of which was imported o the Home District. As it is quite cer- n that this vast amount of sugar can be nufactured in the Province, and be made ductive of large remunerating profits, we disposed to give a few practical hints on management of a sugar bush, in the hope t it will be the means of encouraging some ur Farmers to improve in this, as well as he other branches of Canadian farm ma- ement.

Tapping Trees.—The ordinary method of performing this part of the operation, is to take out a chip with a common chopping axe, about four inches long, three wide, and one deep, on an angle of about 45 degrees, and directly under the incision to apply a wooden spile, to convey the sap to the trough or other vessel for preserving the sap. This plan above all others should be avoided. The least injurious plan to the tree is to use a three-quarters of an inch auger, and by boring the hole only three parts of an inch deep, it will in the course of eight years grow over, so that the tree may be tapped again in the same place. The spile should be made to snugly fit the hole at the outer edge, or next to the bark of the tree, but the point should be one-third less in diameter than at the edge of the bark. A gimblet hole must be made in the end of the spile, and to convey the sap down the spile a small groove must be made with an half-inch gouge. The hole made with a gimblet should be burned out smoothly with an hot iron rod. By being careful in tapping trees with an auger, and by using spiles of this description, the whole of the sap may be collected in the vessels; but by the ordinary method by far the larger share is lost by running down the sides of the trees. Two spiles may be put to

each trough or vessel for holding the sap.—A few hundred trees were tapped in this way by the writer last spring, and in comparing it with using the auger or gouge, a very considerable increase of sap was the result, besides much less injury was done to the trees.

APPARATUS FOR BOILING.—Where the manufacture of sugar is carried on upon a large scale, two and some times three potash kettles are set in an arch, and a small stream of sap is kept constantly running into each kettle from a reservoir above the kettles. By this method the kettles are kept boiling without any cessation, until the sacharine principle is reduced into a rich syrup, when it is removed into one of the kettles and afterwards reduced down to thin molasses, or to a fit state for clarifying. The best description of boilers of which we have any knowledge, are made of plates of strong sheet iron about seven feet long and thirty inches wide. The bottoms, sides and ends should be made of this material, so that it would form a complete sheet iron box, or oblong boiler. Two walls of stone should be built about two feet apart and the same in height, which with a chimney would form the arch. A few strong bars of iron across the two walls to support the boiler, are the only expensive material besides the boiler that would be required.—If the boiler should not hold sufficient, it might be enlarged by attaching a box made of seasoned boards, snugly to its top—thus increasing its dimensions to any desired extent. An old farmer in the northern division of this District, has a boiler of this kind in his sugar house, which holds fifty pails of sap, the whole expense of which did not cost him more than £2 10s. The same person also has a cement cistern in his sugar house, in which he stores all his sap, and before it enters the cistern it passes through strainers. The sap is taken from the cistern by the aid of a pump, and the boiler is fed with a small stream as previously described. Every thing in this establishment is carried on with the same amount of neatness and order, as is observed in executing other portions of farm labour.

By the time this paper reaches the reader, the season for sugar making will be pretty well commenced, therefore it is useless at this time to give detailed directions for fitting up suitable apparatus, for executing the work properly or with despatch. Our main object in directing attention to this subject, is to convince if possible the Agricultural community, that the maple forests of Canada are capable of affording a full supply of this indispensable luxury to the country, thus saving a vast sum of money annually, without in the slightest degree interfering with the other operations of the farm. We are so sanguine on this point, that we are prepared to assert that if the great bulk of the people could be prevailed upon, to view this matter in a favourable light, that Canada might not only be independent of other countries for a supply of sugar, but that she might also have a surplus to export to other countries. Even now, the Detroit merchants buy some fifty or sixty tons annually from the Indians, on the Islands of Lake Huron. The GREAT MANITOULIN Island is about ninety miles long and thirty broad, on which no finer groves of maple can be found on the continent of America. This Island is capable of affording not less than *one thousand tons* of first-rate sugar annually, and if some pains were taken to instruct the Indians who occupy that Island, into the best methods of clarifying sugar, quite as good an article as what is now imported from the West Indies would be produced, which might be sold at such prices that the merchants could make a reasonable profit in retailing it. This sugar if properly rectified is richer in sacharine matter, and is more pleasant to the taste than the West India sugar; and if it could be had in large quantities would be more highly prized than any other discription of sugar sold in our market. £40 per ton is a very great price, and if respectable mercantile houses would hold out sufficient inducement, we have not the least doubt that the native Indians, would engage in the sugar business extensively. When we look at the gross amount that it costs Canada annually for sugar, and

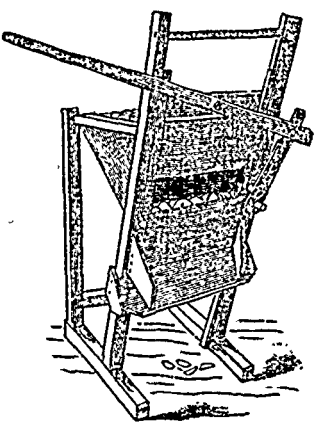
then examine the resources of the country, and its capacity for supplying itself with even more of the article than the requirements of the country demand, we are disposed to make little complaint at the appathy of our countrymen, for their almost total neglect of these matters. We believe that from this source alone, Canada can make herself richer than she otherwise would be, to an extent equal to one million of Dollars annually, and we have met with many respectable farmers in different parts of the country, who are of the same opinion. In substantiating the position we take up from time to time, we shall for the sake of illustration, bring up a case or two to prove the truth of what we advance. The case we shall instance at this time is, that of Mr. Isaiah Tyson, a respectable farmer in the Township of King. Mr. Tyson in his early days devoted his time, energies and money in the milling business in the county of Simcoe, Holland Landing. For the past ten years, he has lived a retired life on a farm. Having an extensive sugar bush on his farm, he resolved that he would at least manufacture all he required for his household use.—Upon trial, he found it a far more profitable business than what it is usually represented to be, and has consequently enlarged his opperations, so that now he calculates to manufacture annually from 25 to 30 cwt. per annum. He makes bold to state that when all expenses are taken into account, that no operation on his farm affords so good a return for the capital and trouble invested. The article of sugar he manufactures is quite equal to the very best samples of Muscovado —and indeed good judges would prefer it.

In our last we made mention of a lot of sugar, that received the first premium at the late exhibition of the New York State Agricultural Society. By referring to our notes we find, that the thick woollen blanket was kept only moist with water, and that the quantity of water poured on the cloth daily, was not so great as what was mentioned.—For all ordinary purposes the system of draining maple sugar usually practiced in the country is all that is required, and if a very superior article be required, the drained sugar might be reduced into syrup and again converted into sugar, and drained a second time.

We hope to be able to make some experiments the present season in refining sugar, which when published to the world will be of some service to the manufacturers of maple sugar.

Provincial Agricultural Exhibition.

The prize list of the next Provincial Agricultural Exhibition, will be published in the *Provincial Advertiser* for March. A Financial report will also be published in the same paper by the Treasurer of the Institution.



Turnip Slicer.

This machine is calculated to cut in a most perfect manner, one bushel of turnips or other root crop, at the rate of one and a half bushels per minute, or as fast as one man can feed it. They are for sale at the Provincial Agricultural Warehouse. Price £1 10s. each.

Exportation of Cotton Goods.—The quantity of cotton manufactures exported from New York, during the year 1846, was 29,929 bales and cases; in 1845, 22,823 do. do.; in 1844. 3,605 do. do.

Hemp Growing in the Western States.

We have repeatedly stated, that but few crops would pay better than Hemp, and we now feel disposed to devote a small portion of each number of the *Cultivator*, to the discussion of this subject, in the hope that a number of experiments will be made the coming season, to prove the correctness of those statements. There are vast tracts of land in Canada, where the soil is too rich in vegetable matter or humus for wheat, which would produce most excellent crops of hemp, and if any attempt be made to grow this crop, to be successful, it must be sown on the very richest description of soil. In our last number, we made mention of the amount of hemp annually imported into Great Britain, and what a good article would be worth here, to export to the British market, and our object at this time of drawing attention to the subject, is to show how far the Farmers in the Western States are in advance of the Farmers of Canada, in the growth and management of the hemp crop. In the April number, we propose to give a few practical directions to the readers of the *Cultivator*, with a view of affording some instruction on the management of the soil, sowing the seed, &c., for this crop.

It has been said a thousand times over, that Canada might supply her own and the British market with hemp, and notwithstanding, nothing has been done to secure this important object. We some times fear that the Canadian Farmers are not made of the right metal, to make bold experiments in cultivating their farms, but in the hope that this apprehension has been erroneously formed, we make the following extract from our excellent co-temporary the *Prairie Farmer*, believing that this noble example will stimulate our yeomen to make the attempt, at least, of imitating their neighbours in so good a work:—

During the first of last spring some arrangement or contract was offered by the navy department, for the raising of hemp for the United States Navy. Mr. Brown of Boston, who has been in the hemp business, as United States agent for six years, as I am informed, took the contract to extend for three years; the hemp to be delivered at St. Louis, Mo. Persons were in waiting at Washington City from Missouri and Kentucky, to enter into contract with Mr. Brown for raising hemp for the supply of his steam hemp machines, now in process of erection. He was introduced to Mr. Baker, and the result was, that Mr. Baker was here with articles of agreement from Mr. Brown, for the raising of 2500 acres of hemp this season, before the gentlemen from Missouri and Kentucky were aware that the navy contract was let out for an increase of the supply of hemp. Mr Brown has associated with him Mr. Billings, chief engineer, and several other experienced gentlemen, and the works are now progressing rapidly. The 2500 acres were subscribed locally. One steam water rolling and breaking machine is located close to my farm, five miles N. E. from the city of Springfield — The location is on the bank of the Sangamon river. Another location is on Sugar Creek, four miles S. E. from the city. A third location is on Beardstow road, eight miles N.W. from the city, and on Prairie Creek. A fourth location is on the Sangamon River, about twenty miles N.W. from the city. The hemp now growing looks as well as any ever seen perhaps on earth. Mr. Washington Iles has eighty acres growing, and the hemp, on 30 acres of it is now seven feet high. The quality and quantity of hurl has been tried by Mr. Billings and pronounced to be equal to any in the United States. We furnish our own hemp seed, and Mr. Brown agrees to pay us $12.00 per acre for one half the ground put in hemp, and $1 87½ to $2.00 per hundred for the other half. We deliver the hemp at the machines in the straw, and the owner of the machine water rots and breaks it. Hemp cradles are furnished us at $5 00 each. Each hemp machine is permanently located and costs about $15,000. About fifty hands are required to run each machine. The machine houses are all up, and nearly completed. The machinery is all at Breadstown, for the four machines The capital invested in this branch of business here is $150,000, as I am informed. I have put in but 12 acres out of 170 acres upon the farm. Next year I shall, if I live, put in only 25 acres well manured. Mr. Humphries put in 120 acres, at the Sugar Creek location. Others, some 50, 30, 40, 25, 15, 10, and as low as only 5 acres each. *Springfield, Ill., July 15th*, 1846.

On the use of Lime and Ashes.

We are intimately acquainted with the writer of the following interesting letter, to the Editor of the *Ohio Cultivator*. Mr. Ladd belongs to the Society of Friends, and may with much propriety be termed a junior farmer, his age not exceeding twenty-four years. He is, however, one of the most intelligent and enterprising young farmers, that it has ever been our lot to meet with. He has received a most liberal education, and in fact has been solely educated, with a view of fitting him to manage his fathers estate, in a manner that would appear in keeping with the genius of the nineteenth century. Canada is as capable of affording talented young farmers as any other country, and we trust that the junior readers of the *Cultivator*, will take a leaf from Mr. Ladd's book, and make the attempt to write for their own Magazine, so that its Editor would not have to be dependent upon the American writers for suitable matter for his paper. There are hundreds who are capable of writing for the press.—The only thing required is a simple statement of facts and experiments clothed in common sense language—and if any brushing up or improvement in style be required—we shall feel a pleasure in performing that part of the task:—

FRIEND M. B. BATEHAM.—I observe in No. 1, of Vol. 3, of the *Ohio Cultivator*, some inquiries signed "J. W. B." Harrison Co., and "A young Farmer," Medina Co., which I shall endeavour to answer—This I undertake with some diffidence, being aware of my incompetency to instruct to any great extent, yet, being in possession of some facts both from my own experience and that of others in the use of lime and ashes, I feel willing to communicate them.

1st. In regard to applying lime in the winter season—I may state that I spread some 2500 or 3000 bushels in the depth of last winter on clover and wheat, the effect on the clover, fully came up to my most sanguine expectations, yielding more than double the amount of hay and pasture, that I obtained off the same number of acres of the same quality of land without the application of lime or other manure. I could not see much difference in the wheat; there was a very strong growth of grass, however, which leads me to the conclusion that those who wish to see immediate effects had better apply lime to grass than to wheat—and consequently that I. W. B. had better spread his now, on the ground that he designs for wheat the coming season; this will produce a luxuriant crop of grass, which should be plowed under about the 1st. of 6 mo. (June, and stirred just before sowing in the fall. This is the mode adopted by the best farmer with whom I am acquainted, and I think can be philosophically proven to be the best—The opinion of some of your last year's correspondents to the contrary notwithstanding.

The substance used by us designated common lime, is the air slacked or carbonate of lime, Gypsum or Plaster Paris being the sulphate of lime. The organic constituents of all plants are hydrogen, oxygen carbon and nitrogen, the two first form water, and two, second carbonic acid, the first and last ammonia. Water, carbonic acid ammonia, then, or their elements, compose the organic parts of all plants—Lime, according to Dana, acts as a neutralizer, a decomposer, and a converter—neutralizes acid geine, decomposes metalic substances, and converts insoluble or solid vegetable fibre into soluble vegetable food. Now add the acid geine, &c., contained in a luxuriant crop of clover or other grass, to the metalic substances of the soil, and we have a vast field for the action of this great agent, hence the policy of excluding the vegetable matter from the action of the air, &c., and turning it up in connection with the lime just at the time you want these, properties made available food for the young plant.

2d In regard to the worth of leached ashes according to chemical analysis, that part which is soluble in water contains but three ingredients; sulphuric acid, muriatic acid, and potash—which are not contained in the insoluable. Some chemists, therefore, conclude that where soap boilers have used lime with the ashes to strenghten the ley, that leached are worth nearly as much as unleached ashes.

3d Will lime destroy the Hessian fly? I think not, except some few which might possibly come in contact with it in a caustic state. It may however be of service in enabling the plant by a vigorous effort in the spring to overcome the depredations committed in the fall.

Ashes are recommended by chemists, both theoretically and practically, as an excellent manure

for almost any soil in our State; 50 bus. per, acre producing very visible and decidebly favorable results; therefore I. W. B. had undoubtedly better haul the ashes.

Respectfully submitted.

J D. LADD.

—*Ohio Cult.*

Transplanting Evergreens.

Mr. Editor:—I have recently become a subscriber to the *Genesee Farmer*, and have this day received the first number. I observed at the head of the Horticultural Department, a picture of a cottage, surrounded with a few specimens of that beautiful evergreen tree, the "Balsam Fir." I thought I would send you, for publication, a few hints on the subject that heads this article—they being the result of several years experience, which is allowed to be the best instructor.

The popular idea has formerly been, and probably still exists in some measure, that evergreens should be removed in the month of June, after vegetation has considerably advanced.—Some seven or eight years since, wishing to ornament my ground with the Balsam Fir, I adopted the above plan, and the result was a total failure. I have transplanted from ten to twenty fir trees annually, almost every year since; and have now nearly one hundred about my house growing luxuriantly. I have learned by experience that, although the native soil of the fir is a swamp, they will flourish *better* on rich, dry, gravelly, or sandy soils, than on low bottom lands where there is much water. My practice is to remove the trees from the swamp or nursery early in the spring, as soon as the frost is out of the ground; dig them carefully, and not by any means allow the roots to dry, and set them in well prepared soil, and they are as tenacious of life as almost any other forest tree. The holes should be dug large, and a foot or more in depth, and then partly filled with chip-dirt or muck, so as to raise the roots near the surface. In filling the holes, the earth should be mixed with fine chip-dirt, and a pail of water dashed in, so as to bring the earth in close contact with the roots. After the hole is filled, spread a bushel or more of chip-dirt, (a coarse article will answer,) about the tree, to retain the moisture during the drouth of summer. In very dry weather, an occasional watering is necessary, the first season after transplanting. In soils partly, or wholly composed of clay, without the above preparation, I believe that ninety-nine trees in a hundred would die the first year.

Three or four years since, I prepared a piece of ground for a row of fir trees, in the following method: A land about six feet wide was plowed three or four times, turning the furrow outward each time, so as to make quite a trench in the centre, which I supplied plentifully with fine manure from the *chip*, and barn yards. The land was then backfurrowed so as to bring it to a level, and the manure and soil well mixed with the plow.

My trees were carelessly *pulled* from the swamp and as carelessly planted. In a row of twenty-five or thirty trees, although they were six or seven feet in heighth, there was not a single failure; which I attribute principally to the above preparation of the soil. I have found *chip-dirt* to be the most valuable kind of manure, applied on the surface of the ground, around fruit trees and shrubs of every kind. The "whys and wherefores" I could explain, but I am reminded of the Printers, rule, "Be short." E. R. PORTER.

Prattsburgh, N. Y., Jan. 13, 1847.

—*Gen. Far.*

Improvement of Seed Corn.—It appears to me that many of our farmers are not aware of the great advantage that may be derived from a little care and labor in improving seeds of our farm crops, and especially of Indian corn. Ten years is sufficient to effect an entire revolution in the character of that grain, as it regards size, shape and color of the ear, time of maturity, productive, size of stalk, texture of husk, &c. For instance, a small early variety, with small ears, round hard cob, short flinty grain, thick husk, and quite unproductive, may be changed to a late sort with large ears, soft flat cob with grains ¾ of an inch in length, and one ear shell a pint—the husk thin and soft, stem small, grain any color you choose, cob red or white, &c.

To accomplish this it is only necessary to cross different varieties judiciously with another, and annually select your seed with a view to the desired improvement, and to be sure to give the crop *sufficient food*. To expect any great improvement without high feeding, would be as unreasonable with corn as with live stock. I am fully of the opinion that corn, as commonly found among our farmers, may be improved at the rate of 5 per cent. per year, for five or ten years. I have taken much pains in making experiments for this purpose for a series of years past, and have been an attentive observer of this grain, when travelling, and I am convinced that the corn crop of the State could be increased one fourth by the means above suggested.

H. N. GILLET.

—*Ohio Cult.*

Importance of Experimenting.

Mr. Editor:—If the cultivators of the soil would but take trouble, or I would rather say, would they but enjoy the exalted pleasures of testing by experience the numerous unsettled facts relative to their pursuits—was every farmer an experimenter, and each one's farm an experimental one, and the results of those experiments annually published in the agricultural journals—what a fund of useful facts would yearly be produced. It can easily be done, at a trifling expense; and the gratification of observing the various operations of nature, in producing the numerous vegetable and animal productions from the earth, would of itself be a sufficient recompense for the time spent, independently of the valuable results which would follow an accurate knowledge of the various operations of our multifarious calling. And, I repeat it, that every farm ought to be an experimental one. No cultivator of the soil should allow a season to pass without testing some practical experiment on tillage, on manures, seeds, breeds of animals, or on some one of the numerous varieties of vegetables for animal food, &c., &c.

One land, or ridge, could be plowed deep, another shallow—harrow one five or six times through the summer, another only once, or not at all. Treat some with the numerous varieties of manure, to determine the quantity most profitable to apply at a time to each crop, and how to apply it, whether on the surface, slightly covered, or plowed under deep—whether barn-yard manure ought to be applied green, fermented, or rotten. Test the quantity of the various seeds to sow per acre, with the best method of preparing them.

And many valuable facts might be settled relative to the breeding and feeding of animals—the different kind of food profitable to feed with, for the various operations of labor—or for making Milk, Wool, and Flesh. Examine with accuracy and care the result of those experiments, and publish them in our journals, that all may receive the benefit of each individual's experience; the beneficial results would be beyond calculation.

And, Fellow Cultivators, why do we not do it? In no way can we spend a little time so usefully. Let each one of us resolve that in future no season shall pass without our testing some practical experiment relative to our calling.

WM. GARDETT.

Wheatland, Feb. 10, 1847.

—*Gen. Far.*

Cultivation of the Cranberry.

We have been furnished by the Rev. H. B. Holmes, of Auburn, Worcester, Co., Mass., with the following extract from a letter received by him from a friend, in regard to the culture of the cranberry.—*Cultivator.*

1st. You must not think of sowing the seed—but set out the roots.

2nd You wish to know how to prepare the ground. It is important that you contrive some way to prevent and destroy the growth of the grass and bushes, if there are any. This can be done either by plowing, burning, paring, or covering with gravel.

3d. How to set out the roots. After the land is prepared, procure your roots in bunches about as large as it is convenient to take up with a common shovel. It is important to be careful in taking up the roots. Have a sharp shovel or spade so as to disturb them as little as possible, and turn aside the vines, so as not to cut them off. Dig a place in your prepared ground about the size of your bunches of roots and set them in. You can have them about as near as hills of Indian corn usually are, or nearer if you please. The nearer they are the sooner they will cover the ground. They are not difficult to make live, but the better you prepare the ground, and the more carefully you set them out, the better they will flourish.

4th. As to the time of setting them out.—This may be done in the autumn or spring; but I should prefer the spring; because when set out in the autumn, the frost is apt to throw them out of their place. This however can be prevented by a little flooding. I should set them out as early as possible in the spring.

5th. As to flooding. It is regarded as very important to be able to flood at pleasure. Supposing you set out your roots next spring; if you can flood them a little in the coming fall and winter, just so they may not be troubled by the frost and consequent heaving of the ground, they will come out bright and healthy in the spring.

6th. During the summer when the vines are growing, and the fruit is upon them, it is important to look out for the weather, and if there is danger of frost, flush the water over the ground, so as to prevent the bad effects upon the vines and the crop. When you can flow at pleasure in this way, you are almost sure of a crop annually.

Improved Breed of British Cattle.

The following very pertinent remarks are copied from the *American Herd Book*, edited and published by L. F. Allen, Esq., of Black Rock, New York. Mr. Allen is one of the most successful breeders of Short-horns, and also Improved North Devon Cattle in the Union. A large proportion of Grand Island belongs to Mr. A., and to give our readers some idea of the extent of stock breeding on the Island, it might not be amiss to mention, that last July when on a visit to that quarter, we stood on a small rise of ground, and counted eighty-four cows, grasing on a piece of interval land that did not exceed ten acres. About one-third of these animals were thorough bred and grade Durhams, and the remainder were Devons and native stock.—We invite gentlemen who admire fine cattle, to purchase Mr. Allen's *Herd Book*. They may order through us—price 15s. each:—

To such Agriculturists as regard the great cattle-breeding interests of the country of inferior, or but of ordinary moment, this volume may be of trifling consequence. If their whole course of observation, during the years in which they have been engaged in the indispensable and highly honorable calling of husbandry, has not led them to appreciate the amazing deficiency of the many points of excellence in which our native cattle abound, they have yet to learn, that of which a very moderate amount of investigation will convince them: at least one-fourth of all the vast sum of labor and of forage which is annually expended in the rearing of such a class of animals, is irrecoverably lost in misapplication—According to the census of the United States, very loosely made, in the year 1840, the number of neat cattle in the whole country, was a fraction less than fifteen millions. The value of these, at a trifle less han seven dollars a head, would be, in round numbers, one hundred millions of dollars. The rapid increase which our country has since made in agricultural wealth, has greatly augmented this number, and we may safely estimate them, in 1846, at eighteen millions; and their value, at least one hundred and fifty millions of dollars We shall not attempt to argue a question so easy of solution as that of increased value which attaches to the improvement of any breed of domestic animals. We consider as identical with that of improved grains, vegetables, implements, and of labor saving machinery. If, by the introduction of better breeds of domestic stock of any kind, we add in any degree to their profitable uses, with an equal cost of subsistance, such additional amount as may be so added, is certainly an absolute gain beyond what we before received upon the same capital, and as surely whatever tends to promote such increase, must be an achievement of immense benefit to the community.

Suppose that the eighteen millions of neat cattle now in the United States, by the infusion of better breeds among them generally, should, in their earlier maturity, and increased product of milk and flesh, with an equal consumption of food, and by a moderately increased amount of care, produce an additional profit of one-fifth, or twenty per cent.—certainly a moderate estimate the annual value of such improvement will be that which is derived from an additional invested capital of thirty millions of dollars!—a vast sum in the aggregate of our agricultural wealth. And this is no fiction. Absolute, well defined, laborious investigation has well settled the question.—Cattle-breeding has assumed the dignity of a science. Acute and investigating minds, for more than two centuries, in England, have unremittingly labored to accomplish the splendid and gratifying results which they now triumphantly show to the world in the matchless animals thickly sprinkled over that highly cultivated land; and their example, for the last twenty years, we are happy to remark, has more or less influenced their brethren in America.

According to Youatt, a veterinary Surgeon of London, who published, under the superintendence of "The Society for the Diffusion of Useful Knowledge," a valuable work on British cattle, in 1834, the average weight of beef cattle at the Smithfield market in London, in the year 1710, was but 370 pounds each. A select committee of the House of Commons, in a report printed in 1795, stated, that since the year 1732 their neat cattle, on an average, had increased in size and weight one-fourth, or twenty-five per cent. This would make the average at that time (1795) 462 pounds. The average age of the fatted cattle was formerly about five years. At this last period, the peculiar state of the times in Great Britain, and indeed in all Europe, (for the French revolution

had now stirred up the political cauldron of nearly all Christendom, was exciting increased attention to agricultural pursuits, and the spirit of improvement in their herds of neat cattle had spread through England and Scotland to a wide extent, and probably no period of time ever witnessed a more rapid dissemination of valuable material for promoting the increased excellence in this variety of domestic animals, than the thirty years succeeding that period. We are not surprised, therefore, at finding, according to the same authority, the average of the Smithfield cattle in 1830, at 656 pound each—an increase, in twenty five years, or over forty per cent.—an astonishing contrast—and when it is understood that these last were fitted for the market at an average of four years of age, instead of five, and probably with the lessened consumption of one year of forage, and a slightly increased expense of annual preparation for market per head, the additional profitable results are enormous. So much for improvement in England, where their efforts in all branches of agriculture are still advancing with undiminished vigor.

But we have taken things more quietly in America. Our agriculture, in all its branches, save that of the planting interest, had, until since the termination of the late war with Great Britain, and the general peace in Europe, remained almost stationary. Since that period, with the rapid development of our great national resources, our immense acquisitions of fertile territory, the extension of our canals and railways, the improved navigation of our almost endless rivers and lakes, and the unexampled increase and spread of our population, has arisen a spirit of enterprise in our agriculture, giving evidence of its future rapid advancement. Mind and investigations are more actively applied to rural pursuits than formerly, and it is hazarding little to assert that the ratio of products on agricultural capital, partially effected indeed, from the cultivation of the new and more fertile soils of the west; but much, very much from the improved systems of husbandry obtaining among us, are in a great degree increased. We now have treatises on almost all subjects appertaining to agriculture. Our periodicals devoted to this subject, discuss and decide with intelligence and ability, weighty questions on rural affairs; and men of education, travel, professional attainments, are not, as formerly, ashamed—yes, that is the word—to discuss, either in casual, or conventional meetings, any topic connected with that, which all now acknowledge to be a noble and dignified profession.

The breeding and rearing of neat cattle in the best manner, and to that perfection of excellence to which the animal economy is capable of arriving, is a subject of deep study, and of long and patient experiment and investigation. It is, too, an agreeable, a delightful employment—one in which great and strong minds both in England and in America have sought recreation, and evinced in its pursuit a zeal and public spirit worthy, in the benefit they confer upon their countrymen, of all acceptation. They appreciate the benefits which are to accrue to our national prosperity, in an increased attention to the subject, and with the great example of their labours before us, well may our country gentlemen and professional farmers be content with the pursuit they have chosen, whether for a rational pleasure or a necessary occupation.

But we have digressed. If, by increased attention to breeds, the cattle of England have nearly doubled their weight in a century, (and taking into the estimate the grain of one year's keeping, by reason of early maturity, it will, practically, be quite doubled), we in America, have the strongest inducement to improve our own herds to all possible extent. That we are far from possessing the best races of animals in our native stock, is generally admitted. They have many faults, with some redeeming excellencies. As dairy cows, they are only tolerable. As working oxen, they are, usually, good. But, in early maturity, they are decidedly bad—seldom ripe till six years old—oftener at seven or eight,—rigid handlers—ill-shaped—heavy boned—and, compared with their weight of flesh, great consumers. The bad qualities should be rectified,—the good ones may be perpetuated. We do not intimate that so great an increase can be made in the weight of our cattle, even by adopting the most approved breeds of England, as has been exhibited there; but we can do much, very much in that particular. We can save, at least, the consumption of one year's forage, with the same profitable weight of carcass. Our native steers, at three and a half year old, when most of them are driven to market, and at an age in which they are altogether too young for *good* beef, do not *average* 500 pounds each, in profitable weight.—Full-grown oxen, six years and upwards, grass-

fed, with an additional three to six months of hay, roots and meal, will not exceed an *average* of 800 pounds; and a tolerably fatted cow, after running three months dry on the best of grass, and an equal time on hay, roots and meal, will not exceed 400 pounds, as a rule. Now, these weights, where we have no Highland, Kyloe, Welsh, and other diminutive cattle, as in England, to make up the Smithfield average, thousands of which do not exceed 350 pounds each, are a very low average. Were the short horns generally introduced into our great cattle districts, upon the strong soils, and crossed upon our native stock up to three-fourths and seven-eighths blood, there can be no question but one or two years in maturity would be gained, with an increased weight of carcass; and, to say the least, an equal quantity of beef, with a diminished consumption of food. The market value of the flesh, too, would be enhanced; that is, a greater weight of mess beef can be cut from a short horn than from native animals. The briskit, crop, loin, plate, and rump, in the one, being much heavier, relatively, than in the other. The peculiar mellow handling of the short horn is also indicative of a superior quality in the flesh, adding to its selling price on foot, and rendering it easier of support on a less quantity of food. So too, with the milking qualities of the cow. The milk of the short horn is proverbially rich. The quantity is also increased; and we have no hesitation in asserting that an average herd of high grade short horns will yield, with a proportionate weight of carcass to the animal, and an equal consumption of food in the aggregate, at least ten per cent, more butter and cheese, than a like herd of common cows. Many accurate judges estimate it higher; but we are content with this low scale of superiority—sufficient, at all events, to induce a reform in the entire dairy system of our country. With many, it may be considered a minor question, but the profitable disposition of the cow, after her dairy qualities shall have been exhausted, should not be disregarded. It is important that she be turned to good account always; and having performed her whole duty at the pail, she should finally yield her full quota of profit in a valuable carcass. All this can be effected with the short horn in a superior degree, as those powers of secretion which make her unrivalled at the pail, will, when turned in an opposite direction equally prove her excellence in the shambles.

Another topic connected with the improvement of our neat stock is worthy of consideration, as inducing increased interest and attention with the farmer; and that is, the creation or developement of a higher standard of taste and judgment in the pursuit, than would otherwise exist. An association with inferior or ordinary objects, gives no strong attachment to them, or their kind. The great mass of our farmers who have associated in their minds none but mean and common things, have no appreciation of the harmonious and beautiful developement in the animal economy which is so strikingly displayed in the improved races of domestic animals. All, to them, are alike. Utility, even, loses half its interest, and they delve on in a sort of reluctant servitude of the most sordid kind; and live, drudging, on entirely unconscious of that charming interest and admiration which attaches to all things beautiful and good in the animal creation, which might, otherwise, surround them. With them, a cow is a cow, simply,—a steer of a bullock is such only, as a thing of course,—a laboring ox, mean and inferior in his figure and performance, is the brutal drudge of his own more laborious drudgery, and nothing else, without even an inquiry whether, in all of these, his cow may not be increased in the beauty and fineness of her proportions, or the profitable secretions of her milk, both in quality and quantity; his bullock in the lessened consumption of his food, his increased bulk, or finer quality of meat; and the partner of his toil, the labouring ox, in his greater docility, his more perfect developement of limb, and ability to perform his daily task, and the consequent profitable results of his labor; and finally, the full accomplishment of all that his race is capable, in his fitness for the food of man.

This, to us, is no small consideration. The negative influence of such want of observation, if influence may be said to exist at all where there is nothing but apathy to excite it is, productive of no good. It is a bar to all progress of any kind, and can only be eradicated by example, and the absolute creation, or infusion of a due estimate of excellence, new to his whole previous course of observation. In a young mind, not yet matured and settled down into absolute solidity, example has a strong effect; and by its occasional presence much of latent inquiry, and of subsequent active investigation may be effected. This is the spirit we wish to arouse. Once put

in action, it will go on, with more or less of vigor and activity, until the great purposes of improvement are accomplished.

It is often remarked by persons of observation, attached to other pursuits or professions, when the subject of agricultural life, and its advantages are discussed, that the dull routine of farming has no interest for an active mind. Its employment is drudgery—its associations vulgar and uninteresting. There are no high, refining aspirations connected with the farm—no intellectual, intelligent results in its labours! How utterly mistaken is this sentiment! What a total misappreciation of a noble and exalted subject! What an abounding ignorance of the numberless object of delightful interest which attach themselves to an intelligent mind in a thousand different ways, seen no where else than in rural life, and in rural pursuits! Such theorists, if they speak from any experience of their own, have been schooled in the least interesting labors of the farm.

But I am generalizing. I say thus much to illustrate a principle. It is a positive good to do all in our power to make interesting whatever appertains to our pursuits, be them what they may. If, by adapting to our use, the finer breeds of domestic animals of any kind, our interest in them is increased—and there can be no doubt of it—this, of itself, is a high incentive to further improvements, and in other objects. It will extend to all else within our control, as well as to them; and a high standard of excellence in all that relates to the profession, is the result. Multitudes of instances attest this truth.

Good Advice.—We notice in the Brooklyn Advertiser some excellent hints to the young men of the present age, in regard to the too frequent disposition to eschew a country life, and agricultural pursuits, and entertain the idea that labor is ungenteel and betrays a want of dignity. Not 'satisfied with the calm tranquility of a country life' they must go to the city, leave the green fields and pure air, the very breath of Nature's God; and coop themselves behind a counter in a world of brick and stone, and sell lace, and be merchant princes; live in East Broadway, or "the West End!" It will be *so* grand! Now for the truth: *Hunt's Magazine*, a standard work with the commercial world, states, that of one hundred traders on Long Wharf, in 1800, only five remained at the end of forty years. They had all failed and died destitute. Of one thousand dealers in the Massachusetts Bank in 1800, only six remained in 1810. All the 994 had failed or died in poverty. 'He is indeed 'a fortunate man who fails young.'

Boston Baked Beans.—The *Massachusetts Ploughman* gives the following recipe for cooking this far famed Yankee dish. We can vouch for its excellence. Take two quarts middling sized white beans, three pounds of salt pork, and one spoonful molasses. Pick the Beans over carefully, wash and turn about half a gallon of soft water to them in a pot; let them soak in it lukewarm over night; set them in the morning where they will boil till the skin is very tender and about to break adding a teaspoonful of saleeratus. Take them up dry, put them in your dish, stir in the molasses, gash the pork, and put it down in the dish, so as to have beans cover all but the upper surface; turn in cold water till the top is just covered; bake and let the beans remain in the oven all night.

Beans are good prepared as for baking, made a little thinner, and then boiled several hours with the pork.

To keep away Rats.—The *Boston Cultivator* recommends lime as a preventive against the aggressions of these troublesome visitors, and says:—A gentleman in this city who had occasion to use considerable lime about his premises, which had hitherto been much infested with rats, informed us that these destructive vermin had suddenly ceased to appear or annoy him. "Before using the lime," said he "you could scarcely walk across the yard after night without treading on them." He showed us several of their principal holes around which he had deposited a small portion of fresh unslacked lime, which evidently had the effect of driving them from these places, which they before resorted to in great numbers. The above is a simple and cheap method of getting rid of this annoying and destructive pest.

Large Cattle.—The Auburn *Daily Advertiser* states that Mr. Elon Sheldon, of Sennett, has one pair of yearlings, weighing 2,100 lbs., one pair of two year olds weighing 3,000 lbs, and one pair of three year olds weighing 3,600, and one pair of four year old oxen weighing 4,550 lbs. Can ths be beaten!—*Gen. Far.*

Remedy for the Heaves.—Mr. Hancock presented the following recipe for thick-windedness or heaves in horses:—Take one hundred and eighty grains of tartar emetic, and divide it into three equal doses of sixty grains each. Mix one of them in wet bran, and give it to the horse. Repeat the dose once in two days, and his disease will be greatly alleviated, if not perfectly cured. —*Pra. Far.*

Hints on Health.

Causes and Antidote of Consumption.—The larger the lungs, and the more perfect their development, the less they are liable to pulmonary consumption. That the more they are exercised, the larger they will become; that as we take active or laborious exercise, our lungs will be continually enlarging; and that on the contrary, indolence, want of exercise, &c., will render the lungs smaller, until by absence of air, the air cells will then close up and collapse their walls, as a bird folds up its plumage. By this we also learn that pure air, and even cold air, because more dense, is the best friend of the lungs, and sh uld be resorted to with the greatest confidence, both to prevent and cure their diseases.

It is found in the history of the American Indians at one time numbering many millions of people, and inhabiting from the most extreme point north to Patagonia south; embracing all varieties of climate and location; resting in the frigid, temperate and torrid zones; occupying every variety of situation, on the seaboard, on the borders of the lakes, on the tops of the highest lands, and in the most secluded vallies; on the wide spread and open prairies, and in the most arid deserts; the countries of the greatest humitidy, and where it rarely ever rains, as in Peru; yet in all these countries, and everywhere, such a thing as pulmonary consumption has never been observed, whilst those people remained in their savage state Bring them into our settlements, civilize them, educate them, and let them adopt our habits, and they become as liable to consumption as we ourselves.

By what peculiarities is the Indian distinguished from the civilized American? 1st, The American Indian is remarkable for his perfect symmetry of his figure.—"Straight as an Indian," is an old proverb, whose truth is instantly recognized by all who have ever seen the wild Indian; his chest is perfect symmetry, his shoulders and shoulder blades are laid flat against the chest, and the whole weight of his arms; shoulders and shoulder blades, is thrown behind the chest; thus always expanding, instead of contracting it; the naked chest, and the whole person is often exposed to the open air; they are much out doors, indeed, rarley in doors; breathe the pure air, never stoop in gait or walk, and pursue no avocations that contract the chest, or prevent its free expansion; often wash themselves in pure cold water; exercise the lungs freely by athletic exercise, running, racing, the chase, frequently dancing and shouting, &c. most vehemently, nearly every day. The same holds true in regard to animals.

Animals in their wild state never have the consumption: whilst the same animals domesticated have it—as the monkey, the rabit, the horse, &c. Consumption is the child of civlization; results chiefly from the loss of symmetry, and from effeminacy, induced by too much clothing, too luxurious living, dissipation, too little exercises, and debilitating diseases and occupations.

If there is an appellation that would apply to us as a nation, it is round-shouldered. The habit of contracting the chest, by stooping, is formed in multitudes at school, by sitting at low tables or no tables; by sitting all in a heap, either in school, by not holding themselves erect, either sitting or standing, and it is a matter of habit in a great degree, tailors, shoemakers, machinists, clerks, students, seamstresses, all whose occupations causes them to stoop at their work, or at rest, or at their pleasure, or amusemets.

Practice will soon make sitting or standing perfectly erect, vastly more agreeable and less fatiguing than a stooping posture. To persons predisposed to consumption, these hints, as regards writing or reading desk, are of the greatest importance. In walking the chest should be carried proudly erect and straight, the top of it pointing rather backwards than forwards. The North American Indians, who never had consumption, are remarkable for their perfect'y erect, straight walk. Next to this, it is of vast importance to the consumptive, to breathe well; he should make a practice of taking long breaths, sucking in all the air he can, and hold it in the chest as long as possible. On going into the cold air, instead of shrinking from it, drawn in a long breath of pure cold air. Do this a hundred times a day, if you have any symptoms of weak lungs, as it will cure you; should you have a slight cold, be in the habit of drawing in a full chest of air.

Luxurious feather or down beds should be avoided, as they greatly tend to effeminate the system, and reduce the strength. For this reason beds should be elastic, but rather firm and hard; straw beds, hair mattrasses, these on a feather bed are well: a most excellent mattrass is made by combing out the husks or shucks that cover the ears of Indian corn. I first met these beds in Italy; they are delightful. Cold sleeping rooms

are in general best, especially for persons in health, they should never be much heated for any person, but all should be comfortably warm in bed.—*Dr. S. S. Fitch on Consumption.*

Extraordinary Experiment with Wheat.

The American Agricultural Association held its monthly meeting on Wednesday evening. Hon. Luther Bradish presided. R. L. Pell, Esq., of Pelham, detailed an experiment in the cultivation of wheat, which appeared to us entirely new. He said that on the 4th of October, last year, he cleared the tops from a potato field, burnt them, and returned the ashes, with the view of sowing wheat. The seed was prepared thus: soaked four hours in brine that would buoy up an egg; then scalded with boiling hot salt water mixed with pearl ashes, then through a sieve distributed thinly over the barn floor, and a dry compost sifted on it, composed of the following substances: oyster-shell lime, charcoal dust, ashes, brown sugar, salt, Peruvian guano, silicate of potash, nitrate of soda, and sulphate of ammonia. The sun was permitted to shine upon it for about half an hour, when the articles became, as it were, chrystaized upon the grain. In this state it was sown at the rate of two and a half bushels to the acre, directly on the potato ground, from which the top had been removed, and plowed under to the depth of five inches, harrowed once, a bushel of timothy seed sown to the acre, and harrowed twice; at the expiration of fifteen days, the wheat was so far above ground as to be pronounced by a neighbor far in advance of his, which had been sown in the usual way on the first of September, thirty-four days earlier. A composition made by Mr. P., containing thirty different chemical substances, was spread broad-cast over the field before the wheat came up, at an expense not exceeding three dollars. The yield per acre was somewhere about seventy bushels.

The flour made from this wheat, which weighed nearly sixty five pounds to the bushel, received the first premium at the last fair of the American Institute. The superiority of the flour was owing to the enormous amount of gluten it contained. Mr. P. read Dr. D P. Gardener's analysis of the flour, which showed that it contained eighteen per cent, of gluten, after having been dried by an air pump over sulphuric acid. His manures were applied for the purpose of producing gluten.
—*N. Y. Com. Ad.*

Buying Apples.

Two boys, James and Robert, received six cents each to buy apples. James purchased two dozen of small Lady Apples, one inch in diameter; but Robert, more considerately, bought with his money two large Pippins, three inches in diameter. On their way to school, the question rose, which had made the best bargain. James contended, that, as he had the most apples in number, and as they made a larger pile when placed together, he had spent his money to the best advantage; but as Robert differed from him in opinion, it was agreed that the matter should be referred to their teacher at the first convenient opportunity after they should arrive in school.

The teacher, after hearing the statement of each, requested James to compute the cubic contents of a globe one inch in diameter, and then as the apples resembled small globes in their form, to determine the number of cubic inches in 24 little globes of the same size. James, being good at figures, went immediately to work, and soon ascertained that the contents of a one-inch globe were equal to 523,010,000th part of a cubic inch, and that 24 such globes contain a little more than 12½ cubic inches, which his teacher told him was about the amount of solid matter his apples contained. Robert, meanwhile, had taken the hint, and calculated the contents of a three-inch globe, which he found to contain more than 14 cubic inches, whence it was evident, that he had expended his money to more than double the advantage.

James, chagrined at this, and determined never to be caught so again, set himself to work and made the following table, by multiplying the diameter of each apple or globe three times into itself, and the products by the constant number 0.5236:—

Diameter of Apples. Inches.	Cubic contents. Inches Dec.	Value of Apples. cts. m.
1	0 5236	0 1
1¼	1 2266	0 3
1½	1.7672	0 4
1¾	2.8962	0 6
2	4.1888	0 9
2¼	5.9612	1 3
2½	8 1813	1 7
2¾	10.8892	2 3
3	14.1372	3 0

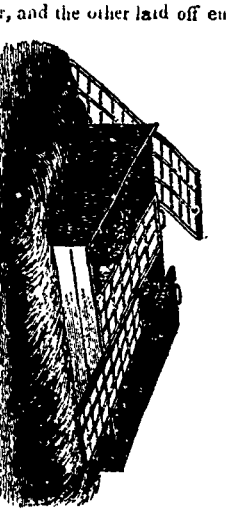
The above principles will apply for general purposes, in purchasing plums, peaches, oranges, and all kinds of articles of a globular form. B.
—*American Agriculturist.*

Construction and Management of Hot-beds.

The prevalent opinion amongst farmers respecting *hot-beds*, is, that they are expensive articles, requiring the skill of professed gardeners to manage them, and almost entirely outside the range of farming economy. Both suppositions are decidedly erroneous, and we hope that every one who reads this will arrive at such a conclusion. We do not propose that every farmer should go into the regular routine of forcing vegetables, at extraordinary seasons; but that every one, however humble his circumstances may be, should, at least, have a hot-bed to forward such plants as he may want to cultivate in his garden, and which he has either to purchase from gardeners—and then get poor, weak, badly grown things—or else wait for the regular process of open garden culture, which, in our climate, under the most favourable circumstances, will not allow him the taste of a vegetable, until the summer is half gone. We are surprised to see farmers come to the city and purchase a dozen of poor withered cabbage, tomato, or celery plants, when they might have raised an abundance at home, far superior, and in better season.

The value of culinary vegetables, as we have often said, is not at all appreciated by those who, of all others, ought to appreciate it—the professed cultivators of the soil. No effort, worth speaking of, is bestowed upon them, as a general thing. We have seen what is called the gardens of some of the best field farmers in this country, produce little else but *weeds*, at a season when it should have been teeming with all the variety of healthy, nutritious vegetables. Let us urge upon them, for their own sakes, and for the credit of our agriculture generally, the importance of a reform in this respect. In the midst of the improvements of the day, the vegetable garden, that may contribute so largely to the health and comfort of every family, should surely not be neglected. Let it participate, largely and fully, in the improvement, and it will yield ample compensation. This is the season to make preparations while there is leisure.

A simple hot-bed for forwarding plants such as cabbage, tomato, celery, broccoli, cauliflower, egg plant pepper, melons, cucumbers, &c., may be constructed by any man having but ordinary ingenuity. The size may be adapted to circumstances. For raising such plants as we have mentioned, a frame of about 12 feet long and 6 wide, which will allow of 3 sashes, each 3 feet wide will be found large enough for any family. It should be made of common two inch plank—the back about three feet high, the front about half that, the ends having a regular slope from back to front. This will give an angle sufficient to throw off rain and give the full benefit of external heat and light to the plants within. If the beds are narrow the front must be higher in proportion The sides and ends are simply nailed to a strong post, four inches square, or more, placed in each corner. For the sashes to rest and slide upon a strip 6 inches wide is placed across the frame, the ends morticed or sunk in the sides of the frame, so as not to cause a projection. The sashes are made in the ordinary way, but without cross bars; and in glazing, the lights are made to overlap an eighth or quarter of an inch, to exclude the rain. Such a frame, costing a mere trifle beyond the labour, will last for years. Where so large a frame, as the dimensions here given, may not be wanted, an old window may be used for sash, and all expense of glazing be avoided. The annexed figure will convey an idea to those unacquainted with it. One of the sashes is moved down as in admitting air, and the other laid off entirely.



Hot beds should occupy a dry situation, where they will not be affected by the lodgment of water during rains or thaws. They should be exposed to the east and south, and be protected by fences or buildings from the north and northwest.

Where it is intended merely to grow plants for transplanting to the garden, they may be sunk in the ground to the depth of 18 inches, and will in such a case require not more than 2 feet deep of manure; but when forcing and perfecting vegetables, a permanent heat must be kept up, and the bed must be made on the surface, so that fresh and warm manure may be added when necessary. A depth of three or four feet of manure will in such cases be wanted. Manure for hot

beds should go through a regular process of preparation. It should be fresh stable manure, placed in a heap, and turned and mixed several times, promoting a regular fermentation; thus it is made to retain its heat a long time, otherwise it would burn and dry up, and become useless.

Those who wish to force cucumbers, radishes, salad, &c, should begin, if the weather be favorable, about the latter end of February. For raising plants it is time enough to begin in March,—in forcing cucumbers, Mr. Bridgeman says:

"The substance of dung from the bottom of the bed should be from three to four feet, according to the season of planting, and the mould should be laid as soon as the bed is settled, and has a lively, regular-tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish color and caking, it will be fit to receive the plants, but if the earth appears burned, or has a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm; at the same time vacancies should be made to give vent to the steam, by running down stakes.

"After the situation of the bed has been ascertained, and the heat regulated, the hole should be closed, and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass, in these hills plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the temperature of the bed, and kept shaded till they have taken root.

"The temperature should be kept up to 60°, and may rise to 90° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all around the frame. Begin by lining the back part first; cut away the old dung perpendicularly to the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames; as it sinks, add more; renew the linings round the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plant at all opportunities.

"Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon, in the advancing season of hot sunny weather. Some use water impregnated with sheep or pigeon dung. As the roots begin to spread and the vines to run, the hills should be enlarged by gathering up the earth around them, for which purpose a supply of good mould should be kept ready at hand, to be used as required.

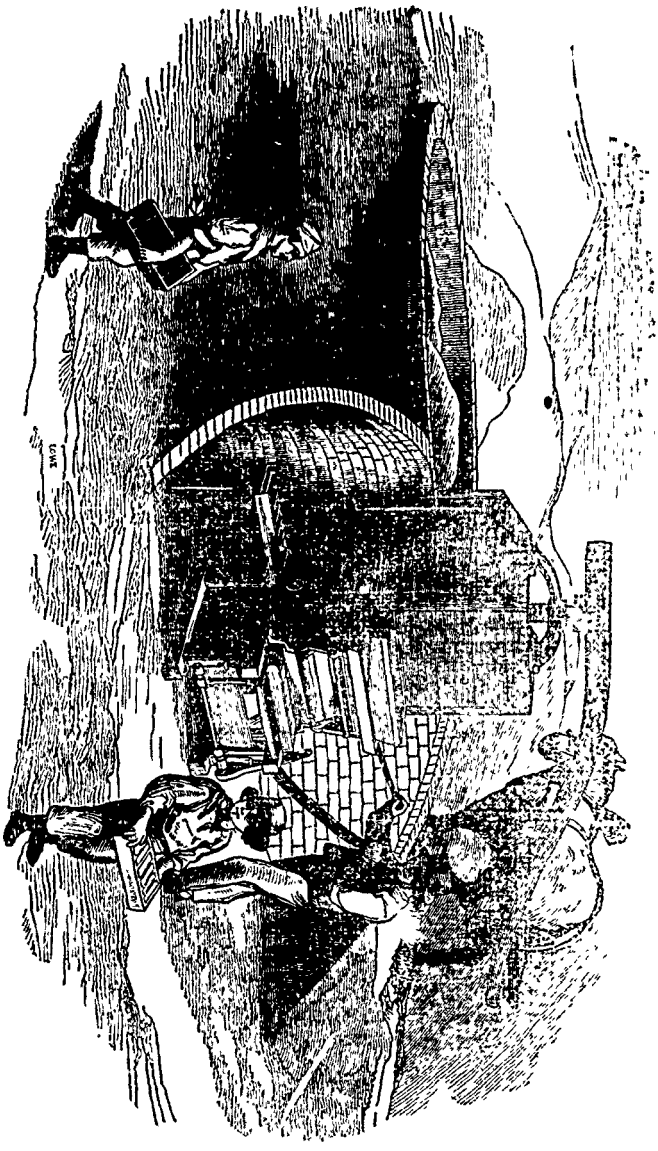
When the plants have made one or two joints, stop them, by pinching off the tops, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them also; and afterward continue throughout the season to stop at every joint; this will strengthen the plants, and promote their perfecting the fruit early."

Radishes, Lettuce, &c, may be forced in beds similar to that described for cucumbers, and the earth in the dung bed should be a foot deep.—They do not require so much heat. The plants require to be well thinned out, air to be regularly admitted, and water gently and regularly supplied. In admitting air to hot beds, a mat should be thrown over the opening to prevent the plants from being chilled.

Earth for hot bed plants should, in all cases, be good rich friable loam, mixed with a third of well rotted manure, and some coarse sand to make it porous. We will add some further remarks in our next, and hope that the brief and necessarily imperfect hints here given will stimulate some, at least, to action —*Gen. Far.*

Hall's Patent Brick Machine.

The engraving to be seen on the next page, is a correct representation of a Machine invented and patented by Alfred Hall, of Perth Amboy, New Jersey, for which he has recently received letters Patent from her Majesty's Government, securing to him and his assigns the sole right of manufacturing them in British America. We are indebted to the *Farmer and Mechanic* for the drawing, and also for the description of the machine.—From the high character given it, we resolved that we should endeavour to introduce it into Western Canada, and have made arrangements with the Assignee, Mr. Adams of Montreal, to be supplied with them at such a rate, that we can sell them at our Warehouse at Montreal prices, adding costs of transportation. They will cost, each, upon delivery £52, and although this may appear a large sum at first sight, it will be found upon examining their merits, that it will be every brick manufacturer's interest, to employ one of these machines in his establishment. They are admirably well adapted to mould, draining and house tile, and from the expeditious manner it turns out tile, and the general favour this material is obtaining for roofing houses, we are disposed to the opinion that they will be extensively employed for this purpose, the coming season. The following extracts from the *Farmer and Mechanic*, will serve to show in a most conclusive manner, that the machine under notice is a most valuable invention:—



The engraving represents a machine for making brick, patented in the United States and Great Britain, by Alfred Hall, of Perth Amboy, New Jersey; showing a pit in which the clay is soaked, the mill for grinding it, and a moulding machine as attached when in operation

The most recent and improved method of constructing a brick-yard, is as follows:—

The yard should be graded so as to extend from the clay bank one hundred and fifty feet, nearly fifty feet being cut off from the side opposite the clay bank for kiln ground; the part between the kiln ground and clay bank, being the drying floor, should, if not made upon a clay foundation, be faced with clay, made smooth and solid, and sufficiently inclined to carry off the water immediately after

rain. On the side of this floor next the clay and opposite the kiln ground are placed the pits or vats in which the clay is soaked, these should be equal in size to one half of a circle nineteen feet in diameter, and three or three and a half feet deep, made water tight, and either of wood or brick, (according to climate and convenience,) the front or machine side being on a line with, and facing the drying floor, and placed at distances each to occupy or accommodate from sixty to eighty feet of the drying floor, the bottom of the pits are on a level with the drying floor, consequently they rest on an embankment near three feet higher than the drying floor. At the centre, and in front of the pit stands the grinding mill,—a plank box resting on a solid foundation, six inches higher than the bottom of the pit, it is three feet four inches square, and four feet high, projecting fifteen inches over its foundation, so as to admit a portion of the moulding machine under the front of it, in the centre of this box is an upright shaft, in which knives are placed, and on the top of which is the sweep or lever to which the horse is attached, at the bottom and in front is an opening for the mortar to pass into the chamber of the moulding machine. The bottom of the frame of the moulding machine, will stand about two and a half feet lower than the drying floor. The horse path will be thirty-two feet in diameter, the sweep being sixteen feet from the upright shaft to the place of attaching the horse,) passing round the pit and all the machinery, inclining three feet from the back of the pit to the drying floor in front, from which point a inclined plane is graded down to the bottom of the moulding machine, for the convenience of off-leavers in getting to and from it. A box containing sand for moulding is placed near and at the left of the machine.

The clay, unless it is soft like putty or dough, works best generally to plough and dry it, putting the water in the pit first. The dry clay is then shovelled in—not in *heaps* but scattered so that every shovel full shall go into and under the water, scattering the clay continually in the deepest, and using up the water, and rising above it only when the pit is full. It is left thus to soak over night, when it is ready to grind.

Having thus prepared the yard, with the kiln ground on one side, and the machine on the other, the drying floor between, and a vat containing water convenient to each machine to soak and wash moulds in, and having dried and sifted through a fine sieve a quantity of fine, sharp sand, (the particles pointed and flat,) for moulding, we are ready to commence work. It is the work for one man to shovel the clay from the pit into the grinding mill, he adds a little water in the mill as it may require, keeps in as even temperature as possible, keeps the mill full—and the horse in motion, the mortar passes continually as it is ground out of the opening in the mill directly under a revolving press, into the chamber of the moulding machine, at the bottom of which is a grate, under which rests the mould, on rollers, in front and rear of which are gates; the gates and rollers, forming the top of the main carriage, the sides of which are kept about one inch from the plates by steady pins, which serve also to keep them from oscillating, and having at their rear end at the outer edge iron rails, and which being constructed so as to allow all surplus sand and rubbish freely to riddle through. It is supported in rear by a girt, suspended from the plates by screw bolts, the front resting on rods connected with a shaft, to which is attached the lower small lever, which, being drawn forward, instantly drops the front of the carriage and releases the moulds from obstruction by stones or otherwise — On the iron rails, runs a moveable carriage and an axle having wheels to run on the rails, to which is attached a crutch lever, curving so as to connect with the axle, thence passing forward is connected with an arm or lever extending to a shaft below, which is attached to a large lever, which is attached to this moveable carriage, so as to force the empty mould under the chamber, and the full one out on to the front of the carriage. The upper small lever operates the press by means of a shaft with pinions operating in segments.

The operation of moulding is simple. The mortar passes directly from the grinding mill, in a confined state, into the chamber of the machine through the grate into the mould. The press lever is then drawn forward—pressing sufficiently to fill out the corners, the pressure being kept on till the mould is filled and started by means of the large lever.—As soon as the full mould starts, the press lever is let go, and when the mould is drawn out, both the levers are replaced ready to repeat the operation.—The moulder then smooths off the upper surface of the brick, by drawing a strike (the mettle edge of which may be wet in the small box in front of the larger one resting on the machine), across them, cleaning off the box, the lower lever is used only to drop the carriage when the mould is obstructed and then immediately replaced.

From four to five hands compose what is called the moulding gang, the shoveler, called a machine tender, a moulder, and from two to three off-bear-

ers. These must all move on regularly, and keep up with the horse, they will make from eight to fourteen thousand bricks per day, the number depending upon the size of the brick, and the convenience of the works. New moulds should be thoroughly soaked before using. The off-bearers, while the moulds are wet, sand them by dipping sand from the sand box, and shaking it till every part of the inside becomes coated, when each puts an empty mould on the machine directly back of the full one, and between it and the axle, and then takes the full one from the front, in such a manner as to place the side coming last from under the grate, next to him. Carrying it to the drying floor he carefully turns it on the floor bottom up, leaving the brick in rows running from the kiln ground towards the machine. He then immediately returns —re-sands his mould, and repeats the operation.

When the business is carried on to much extent, it should as far as practicable, be arranged into a system; the work should be so arranged that each hand should be kept at the same kind of work, the departments of labor and terms applied are as follows, viz.: the teamster, pit-filler, moulder, temperer, off-bearer and yard hand. The teamster ploughs and scrapes the clay and does all necessary team work, the pit-filler delivers the clay and fills the pit, the temperer shovels it into the grinding mill, the moulder moulds it, making from five to six brick at each impression, and the off-bearers carry the brick and lay them on the floor to dry, the yard hands take care of them from this stage till they are set in the kiln ready to burn Each man is employed as a suitable hand to do one of the various kinds of work and expects to be kept at that kind work through the season, and each becomes skilful in his particular department. It is found that men will do more work,—do it better—with greater ease and be better satisfied to be kept constantly at one kind of work, than changed from one kind to another; the muscles called into action by a particular kind of work soon become as the common saying is, seasoned to it, so that they are not easily fatigued,—but change the work, and other muscles are called into action, which soon tire.—Brick should not be taken from the yard until dry, and when dry should be taken directly from the yard and set in the kiln. It is very little, if any more work, to set them at once in the kiln, than to carry and bake them (as the practice is at the south) under sheds, and they will dry more thoroughly on the yard, than in hakes under a shed where they cannot receive the sun, and it is about as much work to take them from the shed and put them in the kiln, as from the yard. If room is wanted to keep the moulding gang at work, the yard hands will hake them on the yard, running the hakes from the kiln towards the pits. Brick are then laid between these hakes to dry; this process saves handling, the brick becomes better dried, and the corners and edges less injured than by the other process.

What is called the burning shed, is constructed by setting two rows of posts to stand on each side of the kiln from 18 to 20 feet apart, ranging so as to accommodate the arches, which will vary according to the length of the brick, leaving five or six arches between the posts; these posts should rise three feet above the kiln; plates should be framed on the top, and connected with iron rods, passing from one plate to the other over the kiln to keep them from spreading by the weight of the roof; rafters placed about six feet apart rests upon these plates, ribs or slats are placed across the rafters on which rests the roof of boards; on either side of these posts, and at a distance of ten or twelve feet therefrom, are set two other rows of posts having plates framed on the top sufficiently high to pass under with teams &c. These form wings to the main shed, and should be covered permanently.—When a kiln is burning, and becomes so hot as to endanger the roof of the main shed, the boards should be slid therefrom on to the wings, and replaced when the kiln is sufficiently cool.

This machine was exhibited at the Fair of the American Institute in 1844, and received the highest premium awarded for brick making machinery; and the opinion of the committee has been fully sustained, as appears from numerous statistics and testimonials now before the Institute, by practiced brickmakers, from numerous sections of the country. These show that nearly two hundred millions of bricks were made with it during the past season. A few of these we have taken liberty to subjoin.

Ambrose Baker of Coxsackie, N. Y., thus remarks: "I have made bricks twenty-two years —nineteen years by hand, and the last three years with Hall's machines. I have six machines—running three alternately each day. I have made this season 3,800,000 in five months, with twenty seven men—at least one fourth more than I could have made with the same number by hand. The were all moulded by three men, and the quali

is greatly improved—being more dense and having a smoother surface. 25,000,000, have been made with these machines, at Coxsackie; the past season, and they have caused an entire revolution in the brick manufacture. The machine works like a charm. Numerous kinds had been tried, and great expenses incurred, but no machine would work our clay successfully before we tried this. Now, none of our brick makers could be induced to dispense with them.

Statements from various places on the Hudson River, shows that this machine is in general use, and preferred to all others; then Abner Bucklands, of Rochester, N. Y, says, "I have used two of Hall's machines for three years, and I feel competent to judge of their merits. I find a great saving in expense—can make bricks much faster, and think them worth one fourth more than hand made bricks. I have furnished bricks for several large buildings in the city of Rochester, which are allowed by architects and master builders, to present fairer fronts, and are far superior to any ever built in the city before. To sum up the matter, I would not be deprived of these machines for $1000 a piece."

Mr. Buckland's statements are confirmed by D. C. Mc Calum, Architect, and several of the principal Builders of Rochester.

Edwin Wilson of Rochester, stated *before the Institute as follows:*

"I have made brick at Rochester for 20 years—made 1,500,000 the past season in less than five months, with *one* of Hall's machines, for which I gave $200 I want another, but the holders of the patent for Rochester will not sell me one for any price As I cannot get another, I would not take $1500 for this. I employed eleven men, and have sold my brick, delivered, for $3 per thousand, (it costing 63 cents per M. to deliver them,) and have made a fair profit. Mr. Buckland's brick are used for *fronts* instead of *pressed brick*, and I think no more pressed brick will be used at Rochester, as those made by the machine present as good and handsome fronts as the pressed article.

William Worman, of Allentown, Pa, remarks, "My business this season has been first rate, and although the machine was started late, I have made 600,000 with it, and No. 1 bricks too. I like the machine better every day, and am satisfied that I can make more and better bricks than any other establishment in the country. I could have sold twice as many as I have done if I had been supplied with them."

Numerous other statements from brick makers in Vermont, Connecticut, Rhode Island, Pennsylvania, Maryland, Virginia, South Carolina, Tennesee, and Mississippi, set forth the merits of the machine in the high terms of praise. But we have room only to publish the following from Peter Hubbell, of Charlestown, Mass.

He observes in a letter to the Institute, Dec. 9th, 1846—"We have been engaged in the manufacture of brick for the last twenty years, most of the time on the Hudson River, but for three years past in this State, within four miles of Boston. During all this time we have sought for and adopted many of the improvements in the business, many of which we have cast aside as worthless. Moulding Machines were invariably placed with the latter class, until we found and adopted Mr. Hall's machine, which we have used for the last three years in different, and nearly all kinds of clay, to our entire satisfaction.

It is simple in its construction, easily kept in order, and can be worked by men of the most ordinary capacity, moulding with ease from ten to twelve thousand per day, and better bricks than can be moulded by hand or by any other machine.

We have had thirty of them in use for the last three years, using fifteen of them alternate days, making each year about 15,000,000 bricks; and for that time the expense of repairing them not exceeding *ten dollars.*

Messrs. H. and Co. say that these are simple facts which they will be happy to give in person to any who will favour them with a call. Mr. Hall is a gentleman of the strictest integrity, and of high moral attainments, and is eminently deserving the confidence of the public.

The (London) Farmer's Magazine, speaking of the machine, says, "it is the invention of an American brick maker, and is general throughout the United States. It is so simple, and efficient in its construction and performance, that it seems destined here also to take the lead. It consists of a pug mill upon an improved principle, to which the moulding apparatus is so attached that the clay, after passing through it, is forced immediately into a series of moulds prepared to receive it.

The bricks made by this machine are much sounder and better than those made by hand; and with the power of one horse and two men, from 8 000 to 10,000 bricks can be produced per day.

Wonderful Inventions.

A correspondent of the *New York Tribune*, writing from Worcester, Massachusetts, gives the following account of the fruits of Yankee skill and ingenuity:

"There are two machinists there, whose presence there, might give some distinction to Norwich though their genius has been exercised on very different objects one is the inventor of that most extraordinary piece of mechanism, employed with a wonderful saving of labor, not in making but in papering pins' Could you suppose that it would ever have entered into the imagination of the most dreamy enthusiast, that he could contrive a machine, whereby he could throw in any quantity of pins, in mass, all heads and points, and have them come out, not only perfectly straightened, but actually papered, three widths of paper at a time, with nothing remainining to be done but to fold up the paper of pins all ready for sale! Well, that extraordinary piece of mechanism has been invented and put into practical use, by this Norwich machinist How much more useful than all the *jugglery of Herr Alexander, wonderful*, truly, as that is! But he has not been satisfied, with this achievement. He has now invented a machine, whereby scythes, instead of being hammered out with trip-hammers, (itself a great saving of labour,) will be rolled out from the bar of iron, perfectly made at one operation, except turning the heel by a second one; the blade of the scythe will in all else be complete, ready for tempering and grinding. The inventor has spent two years in bringing it to perfecion I heard the Editor of your Farmers' Library catechising him very closley all about it,and doubt not he will give a more particular description of the improvement and saving of labour effected by his curious machine for making scythes a single heat.

Stifled Horses.

Seeing many prescriptions for the cure of stifled horses in different authors, and among others, one in the May number of the Southern Planter, by J. B. Godard, of Connecticut, page 106, permit me to give Mr Godard and the public, my own experience of this disease, through your interesting and useful paper. In the first place, the stifle in a horse is simply this: the flank or stifle joint is a large one, with two deep grooves in the head, both of the quarter and thigh bone, fitting in each other, and when bent short forward, these grooves and ridges would be exposed to injury, was it not for a cartilage similar to our knee-pan, operating as a defender of the joint. This cartilage is confined by tendons to the muscle above and below, and when the horse is standing at his ease, may be felt to play loosely with the hand, but when this cartilage gets stifled over the head of the joint, either on the in or out side, by accident, it creates so much pain to force it back, the horse will not permit it, if he can possibly avoid it, and, therefore, is disposed to keep the stifled limb in a contracted position. The remedy is simply to pull the limb straight back till the stifle joint assumes a right line with the two bones joining the same, and the cartilage at once assumes its proper place. About 30 years since I dissected a stifle joint of a mare which I had killed, from becoming useless from this cause. She had been stifled twelve months or more. I found the cartilage had adhered closely to the adjoining parts, and from creating friction on an improper part of the bone on the outside of the joint, the bone itself had become diseased, from which reason a stifle of long standing would be incurable. I have put several stifle bones in place since my discovery, as above; indeed, all that I have tried, by simply tying a rope around the pastern joint of the stifled limb, roping the other end, one around a stake or post, holding it in my hand so as to let it loose when the horse has been made to pull forward sufficiently to straighten the limb by a careful hand hold of the bridle, which should be done suddenly, as the horse will avoid it if apprised by a gradual move. If this step be taken immediately after the accident happening, the horse or owner will suffer but little inconvenience from it.

RYLANDS RODES.

Nelson County, Oct, 18, 1846.

How to Make Indian Gruel—Take 1 quart of boiling water and stir in 2 or 3 tablespoonsful of finely-sifted Indian meal, previously mixed with a little cold water. Add salt to your liking, and let the mixture boil fifteen or twenty minutes. A small quantity of pulverized crackers, a few raisins, or a little sugar added, will render it more palatable to the sick.

To Strengthen Vinegar.— Suffer it to be repeatedly frozen, and seperate the upper cake of ice from it.

Colic in Horses.

Spasmodic contractions and inflammation of the testines. Colic may be divided with reference its causes into a number of classes; the ordiry causes are cold, indigestion, over-heating, ms and inflammation. The following symps commonly announce the disease; the horse neasy and distressed—he keeps moving from ce to place—paws or beats the ground with his t—nips his flanks—kicks his hind feet against belly—falls into a sweat, at first warm and lly cold—lies down and rises constantly—rolls the ground, and is sometimes attacked by conions. If in addition to the above symptoms, discharges are black and fetid, it indicates gtene, and nothing can be done to save him. he treatment we should endeavor in the first e to remove the cause of irritation, and calm n the system, or in other words, repair the chief already done by the disease, we should demulcent drinks and lavements, and by these ns empty the entestines; this will be a surer safer method than to give heating and stimng medicines, which, administered in a caremanner, will commonly render the disease rable. Remedies of this class can only be with advantage in the latter stages of the mper. When the complaint is caused by cold, horse should be covered with a blanket—he ld be given four ounces of the tincture No. r a pint of brandy and water, and if he is mmediately relieved, he should be bled, and ments of decoction of flax-seed given him, from four to eight ounces of linseed or some oil in each injection. If it is caused by inion, he should be made to swallow a large ity of warm water, and copious lavements ap-suds given, till the bowels are freely ed. Bleeding may be practiced if the case ssing, and great care should be taken in g the horse for some time afterwards. The caused by constipation commonly requires a strict diet—warm water in abundance, avements of soap-suds, as mentioned above, hich some purgative medicine may be put; will be necessary, in the first place, to wash oroughtly the intestine. The colic produced nd, has indigestion for its first cause, and es nearly the same treatment, as indicated in the cure of the colic of indigestion The should be made to walk about, and should en an ounce of ether or alcohol—he should be carefully fed for some time afterwards to avoid a relapse. The inflammatory colic is caused by violent purgatives—by poison—by heating food—by eating t o much again, especially when it is not very dry; and the form of disease is easily recognized by the extreme violence of the symptom. It will be proper to bleed once or twice according to the urgency of the case; if the stomach is not too full, give the horse large quantities of flax-seed tea or warm water, and give him emolient lavements into which should be put a little vinegar. If these means fail, try the decoction No. 48 and the lavement No. 49 But the use of these and all other anodyne remedies, although very useful in relieving the spasm and irritation, which in colic are sometimes very obstinate, will become hurtful if too long persisted in, paralyzing the action of the intestines. The inflammatory colic is liable to terminate in gangrene if it is not soon relieved by judicious treatment. Colic caused by worms requires the same treatment as the principal disease.

No 41. Gum benzoin, six ounces; aloes and balsam of tolu, each three ounces, storax and myrrh, each two ounces; alcohol, two quarts; pulverize the resins, digest the whole in a bottle covered with parchment, in a warm place near the fire, for a week, and then filter. Dose for a horse, from two to four ounces.

No. 48. Oil of almonds, eight ounces,—syrup, four ounces; tincture of opium, (laudanum) half an ounce. Mix.

No. 49. Triturate two drams of camphor with the yolk of an egg; add half an ounce of laudanum, and a sufficient quantity of decoction of flax-seed, for a sedative lavement.

Constipation.—When it is not a symptom of some other disease, it will commonly cure it to reduce the quantity of feed—make him drink warm water—give a lavement (injection,) and make him take exercise.

[*Note.*— We have often relieved horses of constipation by giving them occasionally a pound of hogs' lard, melted and mingled with their provender. Ed.—*Manual of Veterinary Medicine.*

Remedy for Sprains.—Accidents of this sort are not unfrequent, and perhaps none are more liable to them than the laboring class of people. They happen most generally in the joints of either the upper or lower limbs, accompanied with much pain and swelling, and inability to use the limb. The remedy is simple, and within the reach of

every one. Cloths wet freely in a strong and cold solution of salt and water, applied and persevered in, generally effects a speedy cure. It necessary to make a shift and the part is very painful, apply the leaves of garden wormwood, wet in spirits. Should the part injured remain weak, as it sometimes does in severe sprains, a safe remedy is to pump or pour on cold water freely for a few mornings. Jefferson, Kane co. 1841. S.L.
—*Pra. Far.*

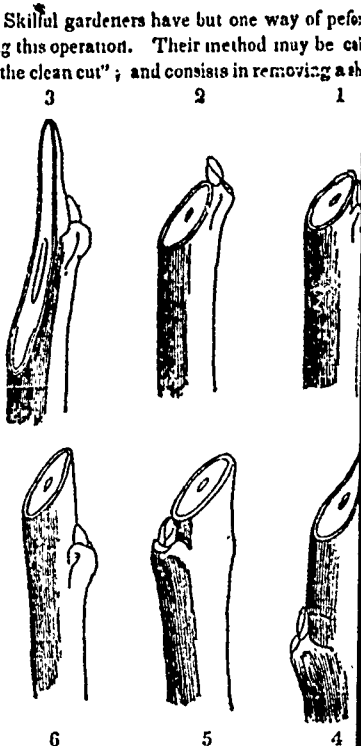
Polishing—The ladies are very fond of keeping the door knobs, spoons, plates, &c., in brilliant order. Now, if instead of water and chalk and such preparations, ladies will use camphene and rotten stone, a far brighter, more durable, and quicker polish can be obtained that in any other way. Camphene is the article used for producting the exquisite polish of the Daguerreotype plates; and nothing has been found to equal it.

Pruning.

The principles that should govern the practice of pruning are sadly neglected or misunderstood; and this by gardeners as well as amateurs. At our saying this, no really skilful pruner should feel offended, for of course he is not included in the criticism. On the contrary, we doubt whether in any country can be found men so thoroughly conversant with the subject as in our own. The following remarks, indeed are founded upon their experience and example, and can only be regarded as an exposition of the present state of English pruning. But it does not follow, because many men understand and thoroughly the use of the knife, that thousands are not in want of instruction, and it is to the latter that we address ourselves.

In all branches of science it is found convenient to commence by a few definitions We shall follow the example Let it be understood, then, that by pruning we do not understand hacking or mutilating trees merely to reduce the bulk, nor that sort of random cutting out which is often supposed to be expressed by this name Those operations belong to plashing and slashing, not to pruning. Pruning is the art of removing scientifically certain branches or parts of them, for the purpose of increasing productiveness or size, or of improving the general health of the individual operated upon. Such is the true meaning, and we doubt whether the definition can be extended.

Skilful gardeners have but one way of performing this operation. Their method may be called "the clean cut"; and consists in removing a shoot



by means of a sloping wound, forming an angle of about 45°, just at the back of a bud, as at fig. 1. The reason is, that as soon as the bud puts forth this wound is readily and rapidly covered with new wood. In some trees it will, in fact, heal over in a few weeks.

An awkward way of performing this, represented at Fig. 2, we shall name "the cut to the quick." Here the wound is made too low down and exposes to the drying action of the air communication between the base of the bud and the interior of the stem; the consequence of which is that the bud dies, and the new shoot no longer does not come where it was expected, but is surmounted by a dead joint, which will after have to be removed.

In order to avoid the risk of "the cut to the quick," some gardeners make use of "the slanting cut" (Figs. 4, 5, and 6), in which the wound is made on the same side of the branch as that occupied by the bud, slanting downwards towards it. Of that plan we do not approve; for it involves the necessity of leaving behind a dead piece of the branch to be removed at a later period

o that the work must be done twice over; more-
ver, it is an admission of a want of the skill re-
uired to make "the clean cut" skilfully.

Lastly, there is "the slivering cut," (Fig. 3) in
hich a long ragged unequal shave is taken off
he branch, much too low in the beginning, and
uch too high at the end. It is the cut made by
oung ladies and maid servants, and mere garden
bourers. It has no excuse. It is clumsy, ug'y.
kward, and dangerous, for it is apt to injure the
anch on which it is made, if it does not extend
the operator's left hand. So much for defini-
ons.

In all cases the amputation should be made by
e firm drawn cut. The clean cut can be per-
med by a dexterious operator to within a
aving of the right line: and the mastery of this
is no mean acquisition. We have seen expert
uners grasp a branch in their left hand, and
h one sharp quick draw remove a shoot as
ck as the stump. But for this purpose a knife
st be keen. Those things which some men
l pruning knives, blunt and notched, a sort
ross between a file and handsaw, used for grub-
g up weeds, drawing wall nails, and trimming
s, are never seen in the hands of a man who
derstands his business or attends to it. To a
dener his pruning knife is as much an object of
citude as his razor. Indeed of the two he
ld rather hack his chin than his plants. Nor
e anxiety to keep his pruning knife in the
est order a piece of needless affectation;
k is done fastest with a keen knife, and best,
e wounds that it inflicts are healed much
er than those spongy, cottony slivers which
e people mistake for pruning.

hese preliminary remarks will serve to intro-
the main body of observations which we pro-
to offer upon the subject of pruning; not
ver in the form of general propositions, but of
ed instructions for each of the kinds of fruit
usually cultivated in this country. Each has
wn peculiarities of growth; each has to be
d with reference to those peculiarities; and,
fore, each must become the subject of seperate
deration.—*Gard. Chron.*

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astor Oil made Palatable.—Castor oil may
ost easily taken mingled with orange juice,
orange be not ripe and sweet. The differ-
between this and any other mode of taking
aluable medicine, is surprising.

Potato Biscuit—Twelve pared potatoes boiled soft and mashed fine, and two tea-spoonsful of salt; mix the potatoes and milk, and a half a tea-cup of yeast, and flour enough to mould them well; then work in a cup of butter; when risen, mould them into small cakes, then let them stand in butter pans fifteen minutes before baking.

Crackers.—One quart of flour, with two ounces of butter rubbed in; one tea-spoonful of saleratus in a wine-glass of warm water; half a tea-spoonful of salt, and milk enough to roll it out; beat it half an hour with a pestle, cut it in thin, round cakes, prick them, and set them in the oven when other things are taken out. Let them bake till crisp.

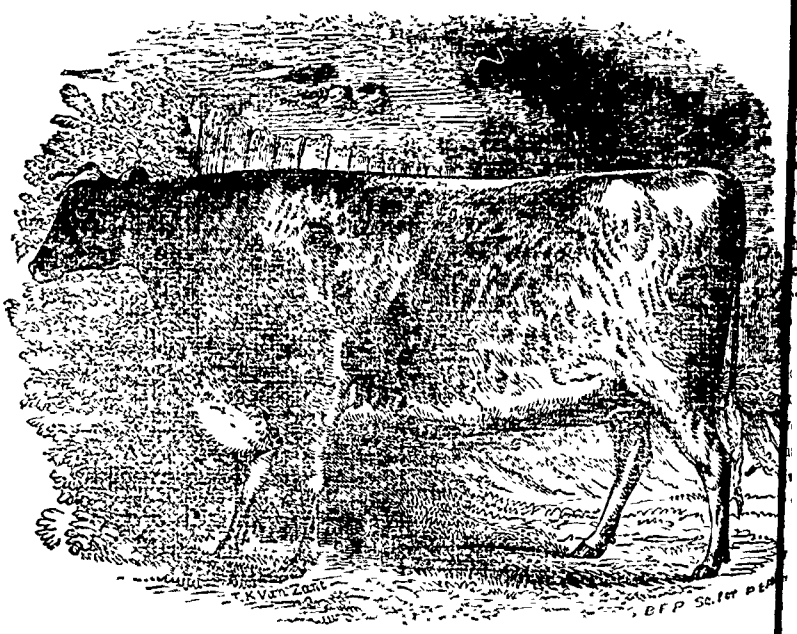
Sour Milk Buttered.—A pint and a half of sour milk, or buttermilk; two tea-spoonsful of salt; two tea-spoonsful of saleratus, dissolved in four great spoonsful of hot water; mix the milk in flour till nearly stiff enough to roll, then put in the saleratus, and add more flour; mould up quickly, and bake immediately; shortening for raised biscuit or cake should always be worked in after it is wet up.

French Roll, or Twists.—One quart lukewarm milk; one tea-spoonful of salt; a large tea-cup of home brewed yeast, or half as much distillery yeast; flour enough to make a stiff batter; set it to rise, and when very light, work in one egg and two spoonsful of butter, and knead in flour till stiff enough to roll; let it rise again, and when very light, roll out, cut in strips, and braid it. Bake thirty minutes on buttered tins.

Raised Biscuit—Rub half a pound of butter into a pound of flour; one beaten egg; a tea-spoonful of salt; two great spoonsful of distillery yeast, or twice as much home-brewed; wet it up with enough warm milk to make a soft dough, and then work in half a pound of butter; when light, mould it into round cakes or roll it out and cut it with a tumbler.

Very Nice Rusk—One pint of milk; one coffee-cup of yeast, potato is best; four eggs; flour enough to make it as thick as you can stir with a spoon; let it rise till *very* light but be *sure* it is not sour; if it is, work in half a teaspoonful of saleratus, dissolved in a wine-glass of warm water; when thus light, work together three-quarters of a pound of sugar, and nine ounces of butter; add more flour, if needed, to make it stiff enough to mould; let it rise again, and when *very* light, mould it into small cakes; bake fifteen minutes in a quick oven, and after taking it out, mix a little milk and sugar, and brush over the rusk, while hot, with a small swab of linen tied to a stick, and dry it in the oven. When you have weighed these proportions once, then *measure* the quantity, so as to save the trouble of weighing afterward. Write the measures in your recipe book, lest you forget.

Galena Lead.—At the lead mines near Galena Ill., in one week, eight men took out *ninety-one thousand pounds* of mineral.



Short Horned Cattle.

The accompanied engraving is a true likeness of a *prize heifer*, owned by E. P. Prentice, Esq., of New York State. The Improved English Short Horns, are proverbial for their early maturity, and where horned cattle are required solely for the shambles and dairy, it may be stated without fear of contradiction, that they are second to no other race known. In some localities of Canada, they are not highly prized, but in the best cultivated Districts, they are daily gaining favour by all who are entitled to be styled good judges in these matters. When short horns were first imported into Canada, the great majority of Canadian Farmers were prejudiced against them, and fo many supposed that their beautiful symmetry and fattening properties consisted only in the extra care and feed that their owners give them. The erroneousness of these opinions have been fairly proved, and if it were necessary we could cite to some scores of instances, where the propensity of short horns heifers for fattening was so very great, that they had to be put on comparatively barren pastures. One of the most extraordinary instances of this kind, was a heifer owned by Mr. Henry Blanchard of the Township of Toronto. This animal was bred by Mr. George Simpson, and at the a four years old, she was as large as two ordi cows, and at the period we saw her, being i month of January 1846, she was grazing on old meadow land, and had had nothing but she could get in this way and wheat straw. then might be considered very superior beef appearently eat this coarsest description of vender, with the greatest degree of avidity, cases of a similar kind came within the notice, and if any fault can be attached Improved Shorts in Canada, it cannot be a their adaptation for the shambles, but rat their too great propensity to fatten, which some degree injured their milking proper It is quite certain that an animal cannot both the fattening and making properties very high degree, if the one excels to a co able degree, it must be to the injury of the Breeders of this or any other improved animals, should endeavour to bear this mind, and by judicious crossing they may either extreme, as it is almost necessary country to possess a breed of horned cattl at least possess these two qualities, in ne equal degree. Some of the best milkers w any knowledge of are grade Durhams, spe of which in this District have been known

six weeks in succession, twelve pounds of ter per week

We are of opinion, it is high time that some sh importations were introduced into Western nada from England. The present stock has rome so much related, that degeneracy must low unless some importations are made from er families, besides those that are related to Durham stock at present in the Province.—me enterprising Canadian breeders of short ns, may be disposed to make some fresh imrations the approaching summer, and if this ould be the case, we would take the liberty of roducing to their favourable notice, the extenve herd of improved short horns, owned by Mr. harles W Harvey Walton, No. 2, Dale-street, verpool. By some notices that were shown us the Honorable Adam Ferguson, the pedigree Mr Harvey's stock, and the prizes that were arded them at the Yorkshire and Liverpool gricultural Societies, give abundant evidence t animals selected from his stock, and introced here, would prove a great acquisition to e country.

Mode of Fixing Pencil Drawings.—We have ceived the following instructions on this subject m Mr Christie, of Westmorland-place, City-d: "Dissolve pale resin in spirits of wine, lay pencil drawing on its face upon a sheet of clean per, and brush the back of the drawing with solution. This penetrates through the paper a few minutes, and as the spirit evaporates the in is deposited as a varnish on the drawing. is has the advantage of not cockling the paper, ich aqueous solutions will do, and as the brush passes over the back of the drawings on card, on other substance too thick to be penetrated the solution In this case, a week solution of glass may be placed in a shallow dish, the part thout touching it with a brush.—*Pharmaceutical Journal.*

We have just seen a decided improvement in ots. It consists of the insertion in each side the legs thereof, of pieces of prepared India bber, which are so shaped as to enable the boot be drawn on or off with perfect ease, and when , to cause it to sit closely and pleasantly from e ankle up to its very top. We think the invation will become a great favourite. Patent ading.—*N. Y. Far. & Mech.*

To ascertain the Speed or Velocity of Machinery.—In all ordinary machinery, the motion of some part thereof is sufficiently moderate to admit of the counting of the revolutions or vibrations thereof. Having compared the motion with time, and ascertained the number of revolutions per minute, of a driving wheel or drum, multiply that number by the quotient obtained by dividing the diameter of this wheel by the policy or pinion which receives a motion directly therefrom. But if these two diameters are such that one cannot be divided by the other without a remainder, then reduce each to inches and decimals, and apply the rule of proportion, multiply the diameter of the small wheel, pulley, or pinion, and the quotient will show the velocity thereof, in revolutions per minute. If another drum or gear wheel is mounted on the shaft of this second rotary, and motion is communicated therefrom to a third axle pulley, the same process may be repeated to ascertain the velocity of the third shaft. In this way the velocity of the mandrils of the most violent motion may be accurately ascertained.—*Selected.*

Horse Power.—We are frequently asked the question, what is understood by a *horse power?* and why that way of reckoning power came to be adopted, and brought into general use?

Before the power of steam was generally known and applied to mechanical purposes, horses were used to raise coal and other heavy bodies, and Mr. Motts, in his experiments, carefully compared the relative power of the different breeds of horses, and its average equal to raising 33,000 pounds one foot per minute, or what is equivalent to raise 330 pounds 100 feet, or 100 pounds 330 feet during that space of time, when attached to a lever or sweep of a given length. Thus, this afterwards became the standard of measuring power or force applied to mechanical purposes, and which is still retained in common use.—*N. Y. For. & Mech.*

To Preserve Oranges.—Boil oranges in clear water, until you can pass a straw through the skins; then clarify three-quarters of a pound of sugar to a pound of oranges, and pour it over the fruit when hot; let them stand one night, then boil them in syrup until they are clear, and the syrup thick. Take then from the syrup and strain it clear over them.

Township of York Agricultural Society.

The regular monthly meeting of the above Society took place at York Mills Hotel on the evening of the 26th ultimo. The attendance of members was large, and the business of the meeting was conducted with more spirit and ability than is usually the case at conversational meetings of this kind. Franklin Jackes, Esq., the President of the Society, was in the chair, and in his opening remarks pointed out the great advantages that the farming classes might derive by devoting a few hours in each month to the discussion of agricultural topics, at meetings of this kind. He was of opinion that if the farmers generally could be prevailed upon to attend these meetings, and would communicate to each other the results of the experiments they have made, and by thus comparing notes, the results would obviously be, a great improvement in every branch of agricultural labor.

He stated, that the question for discussion that night was, "What system of Farm Management was best adapted to the Township of York." As there were a great number of farmers from various sections of the Township, each class of soils would have its able advocates, so that the subject might be viewed in all its bearings, and be treated by each speaker, in a practical manner. He called upon the writer of these notes for his views, which were given at length. Neither time nor space will admit of a full report of the speeches, but as a number of facts were elicited, which if generally known, would prove of great use to the farmers of British America, we feel it a duty we owe our subscribers to publish at least a synopsis of the practical remarks made by the various speakers that addressed the chair.

We stated that the soils, on a large proportion of this Township, especially on the Southern portion, were of that kind that require much greater care in cultivation than those which are found in the northern portion and in the bordering Townships. Clover and wheat taken alternately from these soils would be found the most profitable system of cultivation that could be practiced. The clover seed should be sown on the wheat very early in the Spring, before the snow left the ground, and all the manure made on the farm should be carefully husbanded for the clover crop, which should be applied on the young clover plants in the month of October, or which would be preferable, as soon as the autumn seeding is over. The first year the clover should receive a top-dressing of plaster or other stimulating manure, and both the crop of hay and clover seed may be taken from the land, without any risk of injuring the soil. The second year the clover should be pastured until about the middle of July, and by the middle of August the ploughing for seed may commence. The land should be ploughed deep and well, and before the seed be sown the inverted sod should be rolled with a very heavy roller. By performing this work in a proper manner, as much wheat can be grown from a given quantity of ground as from a summer fallow, without having cost the farmer more than half what it would do to make a summer fallow, and besides affording an abundant yield of hay, clover seed, pasture and manure which cannot be had from the naked fallow system. By the adoption of this system of farming on light soils, and by engaging extensively in the business of sheep-husbandry, the soil may be annually increased in productiveness and value. It may in some instances not be advisiable to adopt this system of rotation, as the land may be too new, or other causes might prevent its immediate adoption, but one thing is certain, that light thin lands will not endure as hard croppings as deep rich clay soils. If the manure be not applied as a top-dressing upon the clover seed, it should be spread on the land and ploughed under for wheat. On all soils that are not noted for their great growth of straw, barn-yard manure may be applied for the wheat crop with safety. On soils of this kind the productiveness of the crop greatly depends upon the quantity of manure administered to the soil. Little or no danger is dreaded from rust or other diseases that so much destroy the wheat crop, therefore even the purchase of manure for such soils, is an expense that under the circumstances of the case is quite warranted. A system of farm practice that would be applicable on light soils, would prove highly destructive on another description of soil. When the land becomes entirely free of stones and roots, the wheat crop may on every description of soils be sown in drills or rows; and where there is little or no danger from too great a growth of straw, the wheat as well as other crops may be horsehoed. By this means the soil can be kept perfectly clean, and the crops may be nearly doubled by two such hoeings in a season.

By practical experiments made on his own

n, deep rich soils will not bear hoeing for the
st crop. The hoeings only increase the
nce for rust, by greatly increasing the amount
raw, and the consequent increase of sap, or
etable juices in the sap vessels of the plants.
n the northern portion of the Township, the
is very deep and rich in vegetable mould, and
he whole may be considered in point of fer-
y, equal to any on this continent. There, a
different system of farm management should
ail. On most farms the vegetable mould is
ep, that by manuring the summer fallow
barn-yard manure and shallow ploughing,
ld only tend to promote a great growth of
w, and also increase the probability of rust,
premature decay of the crop. There the
ard system of making fallows may be prac-
with great success. Peas, barley, and In-
corn, may be grown for this purpose, and by
ploughing and proper management, much
ter crops of wheat can be grown by sowing
er a well cultivated bastard fallow, than after
ked summer fallow. In substantiating this
ion, the speaker adduced a number of prac-
proofs which appeared very satisfactory to
whole of the gentlemen present. It would
a much longer report than we have space
this time, to even advert to the numerous
ical examples that were submitted for the
deration of the members of this Society, in
of the propriety of adopting both of these
ms of cultivation, where the soils were of
haracter pointed out, and we are therefore
the necessity of hastening to the considera-
of the speeches delivered by the other mem-
of the society that addressed the chair.

Neale, Esq., made a most practical and
ific speech on the properties and advantage
ng plaster to the clover, and other broad
d plants. He also explained the different
ies that had been published by scientific
in relation to the operation of this powerful
e. From the experience and observation
had in the use of plaster, he was disposed
opinion that Dr. Johnston's theory was the
t one; viz.: that it was a powerful ab-
of *nitrogen* from the atmosphere, and that
e as a manure must be viewed in this light,
than as a direct food to the plant.

plausible as appeared the theory of bastard
s, still he apprehended that by a few years
practice, the soil would become foul and
full of dangerous weeds, and the old system would be required to restore the soil to its former state of cleanliness and productiveness.

John Watson said, that he had not made a naked summer fallow for some years, and he found that he could get more wheat from his land after pease, barley, or clover, than he could formerly get after a naked summer fallow. He valued the products that he harvested from his land, that he puts in annually as a preparative crop for wheat, at a higher price than what the rent of the land and the costs of the two crops amount, thus saving the entire wheat crop as a profit. He never expected to make another summer fallow, unless it was to clean a half cleared or stumpy field The system he now practices, he feel confident is the best adapted to his farm, and as farmers generally cultivate their lands with a view of getting large profits, he is disposed to practice the one which will give that result.

Mr. William James, District Counsellor, was highly delighted with the evening's proceedings. Although he was bred a farmer, and had followed it for many years as a source of living, still he found that he had much to learn. He felt bold to state, that he had received a greater return in profits from the two last years crops, than from the previous ten. His soil is of a very deep vegetable mould, and with the system of farming that he used to practice nearly the only return he could get was straw. He was now fully convinced that naked fallows were not required, on soils such as he cultivated. Pease and barley, now take the place of fallows, and he gets as good crops of wheat after barley, as after peas stubble. He manures the land he intends for pease and barley in the autumn and ploughs it early, so that the vegetable matter in the soil becomes thoroughly decomposed in the autumn. The following spring he again ploughs and harrows the land until he makes it perfectly clean, and then sows his peas or barley so thick, that it smothers every other description of vegetation.—He then sows the wheat upon one furrow, after the pea and barley crop are removed. The profits from these crops more than pay the entire costs of growing both the spring and fall crop, and his yield of wheat is fully twice as great as it used to be when he summer fallowed, and manured his land with barn yard manure for his wheat crop.

The same subject will be again discussed at the place where the last meeting was held, on the evening of the 26th of March, at which meeting we are informed that a number of gentlemen will be prepared to give their views and experience on the important subject under consideration.

Cheese-Making.

At the present time, it is an object of considerable consequence to the manufacturers of cheese in this country, to produce that which would be approved and meet with a ready sale in the English markets, whether a large quantity of that article is now being sent. One of the most esteemed varieties of English cheese, is that made in Cheshire; and, having had frequent inquiries in regard to the process of manufacturing this kind, from those who are desirous of imitating it, we give from the Journal of the Royal Agricultural Society, a brief sketch of a prize essay, by Mr. White, on Cheese-Making in Cheshire.

The number of cows belonging to a cheese-dairy, is stated to be seldom less than 8 or 10, or more than 70 or 80. From 18 cows, a cheese from 36 to 54 lbs. weight, is made daily for four or five months in the summer. The annual produce, however, varies with the cows and mode of keeping, and it is observed that *great loss is known to have been sustained by not feeding the animals well in winter*.

The milking is performed in cow-houses all the year, and it is usual to have a milker to every six or seven cows. The milk of newly calved cows is not mixed with that of other cows till four or five days after calving.

The evening's milk is seldom made into cheese till the following morning, and in small dairies, sometimes not till the second morning. A cool milk-house is necessary, and hence it is commonly placed on the side of the house (or other building) least exposed to the sun. Most milk-rooms have lattice or wire-windows for the circulation of air, and an inclination is given to the floors for the free escape of the cold water which is daily applied to them in summer. Precautions of this kind are necessary to prevent the milk from becoming sour. A temperature of fifty degrees Fahrenheit is thought the best throughout the year.

The dairy is generally near the milk-house, and fitted with two boilers; one for scalding whey, and another of less size for heating water. The salting and drying house should adjoin the dairy. Here cheeses are placed on stone or wooden benches, salted externally, and dried, before removal to the cheese room. Some dairy-maids dispense with external salting. Sometimes the cheese-room is over the dairy, and at others it is over the kitchen, or other apartment in which a fire is kept. Light and air always excluded from it by curtains or shutters; and one reason assigned for the practice, is its tendency to prevent the hurtful effects of the fly. Some of the larger cheese-rooms are warmed by stoves or hot-air, and in rare instances, from ordinary fire-places built in them.

Process of Cheese-Making.—The extraction of the whey, and salting, occupy from five to seven hours, and it is therefore convenient to commence working in the morning. In this case, the evening's milk is kept over night, and in the morning the cream is skimmed off, and a portion of the milk warmed. The warming is effected by means of a brass or tin pan, about 20 inches in diameter, and eight inches deep, in which the milk floated in the boiler, the water in which has been heated to a temperature of 100 degrees, a heat seldom exceeded, except with a view of saving trouble in the after process. The cold milk is then poured into the cheese-tub, and the warm added to it. The temperature of the mixture may be about 75 degrees, but in warm weather 70 will be enough. It is, however, becoming the general practice, in summer, not to warm the evening's milk; and in very warm weather, even the temperature of the morning's milk is sometimes reduced. The cream, diluted in about double the quantity of warm or new milk, is next put in. If a small portion of the cream is to be retained for butter, it is thought best to skim it off the whole surface of the cream before diluting, in order to remove froth and bubbles, which are considered prejudicial to the cheese. This leads to the conclusion, that fixed air in the curd is detrimental, and suggests the inquiry whether it might not be better to heat the whole of the evening's milk to the required temperature, than to raise the temperature of a part of it to 100 degrees. The next step is to add the new or morning's milk, which is done by passing it through a sieve placed on the cheese-ladder over the cheese-tub. Bubbles seen floating on the surface are skimmed off, and passed through a sieve to break them.

An important point now demanding attention is the proper temperature of the milk when the rennet is put in. Little is known among farmers and dairy-maids as to the precise heat which is best; and it is seldom that the temperature is tested otherwise than by hand. In some dairies in which observations were made, the lowest heat was 77 degrees. Even where what is called cold-cheese, which has a tendency to green-mould is made, it is not supposed that a temperature is adopted at any season of the year, much under 74° or 75°. The evening's milk being about 80, and the morning's milk from 90 to 95 degrees, the temperature of the whole is found to be from 80 to 85 degrees. The exact heat at which milk ought to be coagulated is a matter of especial importance in cheese-making, and it can only be ascertained by a series of careful and judicious experiments, made by scientific and practical parties.

The rennet or steep is now to be added

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* The following is given as a good recipe for curing maw-skins. Procure fresh skins the day before they are wanted; free them from chyle and every impurity; turn them inside out and salt them, lay them one upon another, with salt between, in a deep earthenware vessel; cover the whole over with salt, and lay a lid on the top. About a month before using them, take them out and drain the brine from them, then spread them on a table, and powder them on each side with fine salt. In this state they are to be rolled with a paste roller, distended with splints of wood, and hung up to dry.

To fix the quantity necessary for coagulating a given quantity of milk is difficult, as maw-skins vary much in quality. In using them two skins are often cut at once. Three square inches taken from the bottom, or strongest part of the one, and one or two inches from the top or weakest part of the other, are generally sufficient for sixty gallons of milk. These pieces are cut in a cup containing about half a pint of luke-warm water, with a tea spoonful of salt, the day before the infusion is required. The water thus impregnated with the maw-skin is passed through a seive into the milk, but the skin itself is usually kept out; the rennet cup is well scalded before being used again. The coloring matter and rennet having been put in, the milk is well stirred and left to coagulate, and the tub is covered up. [It is remarked in a note, that the coloring matter used is Annatto, which gives the cheese an amber or cream-like appearance. It is said to be seldom used when the cheese is intended for the consumption of Cheshire families, as it is known not only that it does not improve the flavor, but that if the quality of the drug, is inferior, or, if there is too much of it used, there is a hazard of the flavour being much deteriorated. One pound of it to a ton of cheese, or half an ounce to seventy-five pounds, is considered a moderate proportion. The coagulation is commonly effected in an hour or an hour and a half. The warmer the milk or the stronger the rennet, the sooner coagulation ensues, but the curd is tougher and less in quantity; on the contrary, the cooler the milk, or weaker the rennet, the longer the curd is in forming, but it is both more tender and there is more of it. Too much rennet tends to impart an unpleasant flavour or bitterness to the cheese.

It may generally be expected that the heat of the curd when formed, will be four or five degrees less than the milk was when the rennet was applied; and the difference, especially in cool weather, should not be greater. To determine when the curd is fit for breaking, requires some practical knowledge. It is usually done by gently pressing the surface of the milk with the back of the hand, or by lifting up the skimming dish, beneath which the curd and whey will distinctly appear, if the coagulation is complete. Another criterion is the color of the whey, which should be pale green.

The breaking and gathering of the curd next engage attention. The operations are performed by the hand and skimming dish, or more commonly the curd-breaker. This implement is made of wire-work, in an oval form, and has a rim of tin round it about an inch and a half broad. It cuts the curd by being passed through it perpendicularly, and at first *very* gently in different directions, so that the whole mass is separated into very small portions. For a 60 lb cheese, this operation takes twenty or twenty-five minutes. The curd is then left for a quarter of an hour to separate the whey, and if the weather is cold, a cover is put over the tub to retain the heat. After the separation of the curd, which falls to the bottom, a potion of the whey at the top is taken out by the portable brass or tin pan being pressed into it, and emptied into the set-pan; the curd is then gently broken, by being raised with the hands to the surface, or by the renewed use of the curd-breaker. When the curd is brought to the top, it is easily raised and separated into small portions for the release of the whey. This part of the process takes about half an hour. After about another half hour, or as soon as the curd is sufficiently settled, more whey is taken out, and the curd, so far as its contexture will admit, drawn into one-half of the bottom of the tub; a semicircular board is then placed on the curd, loaded with a weight of about 30 lbs. The board is perforated with holes about half an inch in diameter, for the escape of the whey. The tub is now set three or four inches atilt, to facilitate the discharge of the whey from the curd, and the skimming dish is used to lade it out. On its way to the set pan, the whey passes through a sieve in which any curd contained in it is collected. This curd is called ship-curd and by some dairy-maids is not returned to the tub. The weight and board are shortly removed, and such part of the curd as has been squeezed from under them is again collected on one side, and heavier weight of 50 or 60 lbs. applied as before. As the whey is expelled from the curd it is removed. In a quarter of an hour the board is taken off again, the curd cut by intersections six or eight inches apart, and then the board replaced, doubly loaded. Sometimes the ship curd is now added, the weight is again increased, if necessary; care being taken to augment the pressure gradually, and to regulate it by the degree of compactness of the curd; for if caution is not used in this respect, both now and afterwards, a considerable portion butyraceous matter will be forced out to the detriment of the cheese.

The curd is again cut into square pieces, taken out of the cheese-tub, and broken a little by the hands as it is passed into the thrusting tub. Sometimes a large-sized cheese-vat, and at others a willow basket is substituted for the thrusting-tub. In this the further extraction of the whey is continued by the application of the screw, of which there are different kinds, but the principle is the same in all. Preference, however, seems due to the lever press, which possesses the advantage of sinking by its own weight, and of allowing the application gradually of any degree of pressure, with less attention on the part of the dairy-maid.

The proportion of salt is not regulated by any definite rule. One farmer, distinguished for improvements in agriculture, uses one pound to forty-two pounds of curd In another instance, more salt is used in summer than at other times, the average being one pound for forty pounds of dried cheese, or about forty gallons of milk. In autumn there is always more curd in the milk than at other seasons; and in wet weather there is sometimes an increase of milk without a corresponding augmentation of curd. Before applying the salt, the curd is cut into three or four equal parts, and

these are broken into smaller pieces by the hand or by the curd-mill The salt is then strewed over it, and the breaking continued till the salt is well intermixed, and the curd completely crumbled.

The presses employed, for the two first days at least, and, if possible, during the whole process, should be within the influence of moderate heat; otherwise the discharge of the whey will be retarded, and greater hazard incurred of the flavor of the cheese being injured by acidity, to which the whey is prone. On the second day after the cheese is put into the press, it is turned two or three times, and a clean cloth used each time of turning On the third day the cheese is again turned once or twice. The heaviest press is now resorted to; and for a cheese of 60 or 70 lbs weight, a pressure of 60 cwt. will be enough. On the fourth day it is usual to discontinue the pressure; but is sometimes continued a day or two longer.

SALTING AND DRYING ROOM.

There are sometimes separate apartments for salting and drying, but generally one room answers for both purposes The salt can now be applied externally only, and if any good is done by it, the effect must be in the hardening of the coat of the cheese.

It may be questioned whether it would not be a better plan to remove cheese direct from the press to the cheese-room. The practice of external salting, however, is commonly observed. The cheese is taken out of the vat, and a strong bandage about two inches broad, and long enough to go three times round the cheese, is put upon it with salt underneath. It is fastened with strong pins; the cheese is placed on a stone or wooden shelf or bench, and salt spread on the top to within an inch or two of the edge. The cheese is turned daily, and fresh salt and a clean bandage are as often applied. Some persons continue this salting five or six days, others three weeks. The salting being completed, the cheese is well wiped or washed, a fresh bandage is put round it, and it is laid on a wooden shelf in the same room or an adjoining one, for the purpose of being dried. It is turned once a day, and when considered sufficiently dry it is removed to the cheese-room. The time for drying the cheese in the drying room varies from seven to twenty days, and depends on the temperature of the weather, or of the cheese-room, to which it is next to be taken. In hot weather, and particularly if the cheese-room is exposed to the heat of the mid-day sun, the change from a too cool drying house is apt to cause cracks in the cheese. If these are left open, mites are soon generated, and the appearance of the cheese is hurt. In consequence, whey butter is sometimes used to fill them up. To prevent cracking, the windows of the drying and salting rooms are rarely if ever opened. The same is the case in the cheese-room, from which the light is excluded. The heat of drying rooms it is thought, should range from 50 to 60 degrees

When a cheese is taken to the cheese-room, it is usual to scrape and clean its exterior, and to place it, at first, in the coolest part of the floor and finally upon the warmest part. The bandage is continued for several weeks, and sometimes until the cheese is sold. The cheese is turned and wiped daily for three or four months, at least and afterwards every alternate day. The floor of the cheese-room is generally covered with dried rushes or wheat straw. It should be level, and well washed with hot water and soft soap twice or thrice a year. The temperature should be from 60 to 65 degrees.

It is added in conclusion, that industry, cleanliness, and frugality of the Cheshire dairy-maids are worthy of admiration. Though their labors are great, their cleanliness cannot be surpassed and it is often to their good management that landlords are indebted for the payment of their rents.

Subsoils and their Managements.

The efficiency of soils for producing good crops depends much on the subsoil. If this consists of impervious clay or hard-pan, so as to oppose ready escape to the water, it is evident that the accumulation of the heavy rains, will materially injure the vegetation above them, for it is certain that while nothing is more essential to productive crops than an adequate supply of moisture to the roots, nothing is more injurious than their immersion in stagnant water. When such is the character of the subsoil, it should be under-drained possible, or if this be not practicable, it should be broken up and loosened by the use of the SUBSOIL PLOUGH.

A variety of ploughs have been constructed for this purpose, but unless it be intended to deepen the soil by an admixture of manures, care should be taken to avoid bringing up the sub-soil to mix with that on the surface. In addition to the more ready escape of water thus secured by breaking up, the air is also admitted, which enables the roots to strike deeper, and draw their nourishment from a greater depth. The increased distance through which the roots penetrate, furnish them with additional moisture during a season drought, thereby securing a luxuriant crop which might otherwise be destroyed. This is frequently a great item in the profit of the farmer; as besides the increase of crop which follows a hot dry season when a full supply of moisture is furnished the product is usually of better quality; and the general deficiency of agricultural produce which ensues from seasons of drought, makes his crop more valuable.

As a result of this practice, there is also a gra-
al increase in the depth of the soil, as the fine
d more soluble particles of the richer materials
ove are constantly working down and enriching
e enloosened earth below; and in time this be-
mes good soil, which in proportion to its depth
creases the area from which the roots derive
eir nutriment. So manifest are the advantage
hich have followed the use of subsoil ploughs,
at they have been extensively introduced of late
ars among the indispensable tools of the better
ss of agriculturists.

When the subsoil is loose and leechy, consisting
an excess of sand or gravel, thereby allowing
e too ready escape of moisture and the soluble
rtions of manures, the subsoil plough is not only
necessary, but positively injurious. In this case
e surface soil should be somewhat deepened by
addition of vegetable manures, so as to afford
greater depth through which they must settle
fore they can get beyond the reach of the roots;
d the supply of moisture is thereby much aug-
nted. It is better however to keep lands of
s character in wood, or permanent pasture.
ey are at best ungrateful soils, and make a poor
turn for the labor and manure bestowed upon
m.

If there be a diversity in the character of the
and surface soil, one being inclined to sand
l gravel, and the other marl or clay, a great
rovement will be secured by allowing the
ugh to reach so far down as to bring up and
corporate with the soil some of the ingredients
which it is wanting. This admixture is also of
markable benefit in old or long cultivated soils,
ch have become deficient in inorganic matters
in their texture.

The effect of long continued cultivation, besides
using what is essential to the earthly part of
nts, is to break down the coarser particles of
soil, by the mechanical action of the plough,
row, &c., and in a much more rapid degree,
the chemical combinations which cultivation
manuring produce. A few years suffice to
bit, striking examples in the formation and
mposition of rocks and stones. Stalecites
various specimens of limestone, indurated
s, sandstone and breccias or pudding stones
formed in favourable circumstances, almost un-
our eye; while some limestones, shales, sand-
es, &c., break down in large masses annually,
the combined effect of moisture, heat and
frost. The same changes on a smaller scale, are constantly going forward in the soil, and much more rapidly while under cultivation. The general tendency of these surface changes is towards pulverization. The particles forming the soil from the impalatable mite of dust, to the large pebbles, and even stones and rocks, are continually broken up by the combined action of the roots and the constituents of soils, by which new elements of vegetable food are developed and become available, and in form so minute, as to be imbibed by the spongicles of the roots, and by the absorbent vessels, they are afterwards in their appropriate places in the plant. Where this action has been going on for a long period, a manifestly beneficial effect has immediately followed from bringing up and mixing with the superficial earth, portions of the subsoil which have never before been subject to cultivation.

A subsoil which is permeable to water, is sometimes imperceptibly beneficial to vegetation, not only by allowing the latent moisture to ascend and yield a necessary supply to the plants, but a moisture frequently charged with lime and various saline matters, which the capilliary attraction brings from remote depths below the surface. It is probably from this cause, that some soils produce crops far beyond the yield which might be reasonably looked for from the fertilizing materials actually contained in them. This operation is rapidly going forward during the heat of summer. The water thus charged with saline matters ascends and evaporates at and below the surface, leaving them diffused throughout the soil. After long continued dry weather a thin white coating of these salts is frequently discerned on the ground.

Where rain seldom or never falls, this result is noticeable in numerous and sometimes extensive beds of quiescent (not shifting) sand. Deposites at times occur several inches in thickness. Such are the impure muriate of soda and other salts in the arid deserts of California; in the northern parts of Oregon; the nitrates found in India, Egypt, Peru and various parts of the world. —*Allen's Am. Ag.*

Hard Biscuit.—One quart of flour, and half a tea-spoonful of salt; four great spoonfuls of butter rubbed into two thirds of the flour; wet it up with milk till a dough; roll it out again and again, sprinkling on the reserved flour till all is used; cut into round cakes, and bake in a quick oven on buttered tins.

Recipe for making Buckwheat Cakes.

Do, dear Jane, mix up the cakes;
Just one quart of meal it takes;
Pour the water in the pot,
Be careful that its not too hot;
Sift the meal well through your hand;
Thicken well—don't let it stand;
Stir it quick—clash—clatter—
Oh! what light delicious batter.
Now listen to the next command:
On the dresser let it stand
Just three quarters of an hour,
To feel the gentle rising power
Of powders melted into yeast,
To lighten well this precious feast.
See, now it rises to the brim—
Quick—take the ladle, dip it in;
So let it rise until the fire
The griddle heats as you desire.
Be careful that the coals are glowing,
No smoke around its white curls throwing,
Apply the suet softly, lightly—
The griddle's face shines more brightly.
Now pour the batter on—delicious!
(Don't, dear Jane, think me too officious,)
But lift the tender edges slightly—
Now turn it over quickly, sprightly.
'Tis done—now on the white plate lay it,
Smoking hot, with butter spread,
'Tis quite enough to turn our head.
Now I have eaten—thank the farmer
That grows this luscious mealy charmer—
Yes, thanks to all—the cook that makes
These light, delicious buckwheat cakes.

Important To Housekeepers.—A lady in Batavia, New York, has discovered a new method of washing clothes, which she highly recommends. We copy it from the *New York Tribune*:—

"*Washing Clothes.*—I have lateley found a new way of washing, which I think is a great help, although I never saw it in print. It consists in using turpentine. My mode of using it, is to take the men's week shirts Saturday evening, and put them in cold water to soak until Monday, when I place them in a chaldron kettle, with good suds, and add the turpentine, say one hour. I then take them into a barrel and pound them hard; rub them on a washboard; soap them, and lay them by till their time comes to boil again, and spread them on the grass. I use two tablespoonsful turpentine to three or four pails of water."

Luck.—Rev. H. W. Beecher says in one of his lectures: "I may here, as well as anywhere, impart the secret of *good* and *bad luck*. There are men, who, supposing providence to have an implacable spite against them, bemoan in the poverty of a wretched old age the misfortunes of the lives. Luck forever ran against them and for others. One, with a good profession, lost his luck in the river, where he idled away his time a-fishing, when he should have been in his office. Another, with a good trade, perpetually burnt up his luck by his hot temper, which provoked his employers to leave him. Another, with a lucrative business, lost his luck by amazing diligence at everything but his business. Another, who was honest and constant at his work, erred by perpetual misjudgments; he lacked discretion. Hundreds lose their luck by endorsing; by sanguine speculations; by trusting fraudulent men; and by dishonest gains. A man has never good luck who has a bad wife. I never knew an early rising, hard-working, prudent man, careful of his earnings, and strictly honest, who complained of bad luck. A good character, good habits, and iron industry are impregnable to the assaults of all the ill luck that fools ever dreamed of. But when I see a tatterdemalion, creeping out of a grocery late in the afternoon, with his hands stuck in his pockets, the rim of his hat turned up, and the crown knocked in, I know he has had bad luck—for the worst of all luck is to be a sluggard, a knave, or a tippler."

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