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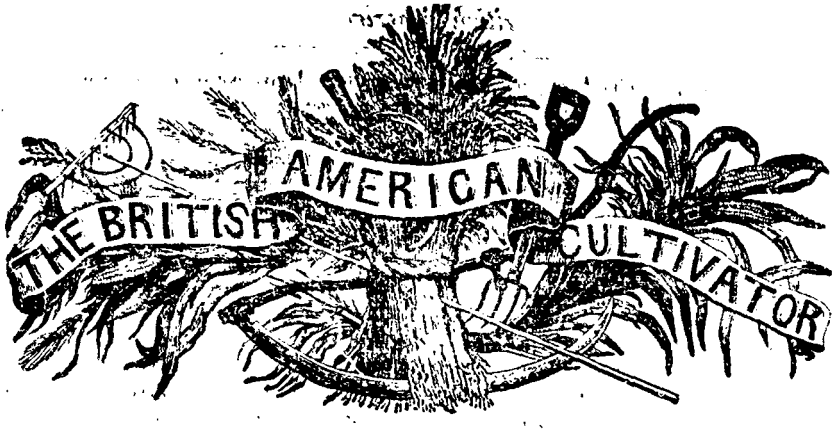


"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own."

New Series. TORONTO, OCTOBER, 1846. Vol. II. No 10.

The Potato Disease.

If the disease which has now become so prevalent in the Potato plant, is really caused by an atmospheric agent, and not by the depredations of a small insect, as we stated in the September number, then the agriculturist will have good reason to apprehend that no efforts of his could possibly prevent this important edible vegetable from disease and premature decay. But we flatter ourselves that the alarming fungus production, is nothing more or less than the busy work of a small black fly, such as described in the article previously alluded to, and may be prevented by employing proper precautionary means at the period when the first symptoms of attack are discovered. About the third week in June last, a green flat bug commenced puncturing the leaves of a number of fields we examined, and from what we could judge of its habits, we suppose it to be the female. It appears to be remarkably lazy in its habits, and invariably destroys every leaf that it attacks. In the course of three weeks, after its first appearance, myriads of small black insects appear on the leaves and stalks of the plants, and immediately they become discolored, and show indubitable evidence of disease. There can be no question but that the falling off of the leaves, and the decay of the stalks, are occasioned by the insect described; but it remains to be seen whether the decay of the leaf, is the true cause of the disease of the tuber. Potatoes grown upon land recently cleared from the forest, if charged with a liberal amount of alkaline salts, are seldom, if ever, injured by the insect we have described; and to reiterate the opinion that has been so frequently advanced in this Journal, in every instance where the system can be practiced, potatoes should be planted upon new land, where a large share of wood ashes remain on the ground undissolved. Where this system canno be practiced, ashes, lime, salt, and soot should be collected and sown broad-cast, at the rate of about two bushels o each per acre, upon the plants, in the early part of July, or when the leaves begin to show symptoms of decay. Other applications may be made, which would produce the same favorable result; but the substances recommended are within the reach of all, and may be employed without costing more than a few shillings per acre.

We are quite certain that but few crops will pay better than the potato, and notwithstanding the great alarm that is made about the *disease*, it may be cultivated upon an extensive scale in Canada, with a degree of profit that few farmers are aware of. Supposing our speculative notions about destroying the fly, should prove a failure when put to a practical test, still the business of potato-growing may be carried on with a certainty of the grower receiving higher remunerating profits. The business of manufacturing

starch from the potato has never been engaged in in Canada, and probably few operations would pay better in proportion to the invested capital and skill that would have to be employed. Upon a careful calculation, we find, that the starch at wholesale prices, from the produce of 250 bushels of Irish cup potatoes, amounts to the very respectable sum of £35, one half of which should go to the grower, and the other half to the manufacturer. This is not idle speculation, but may be practiced with a degree of success that would equal, if not exceed, our statement. An acre of potatoes may be properly cultivated for the same expense that would be required to summer-fallow the ground; and the profits of a single crop will pay for the ground upon which it is cultivated. This being the case, we have no idea of abandoning the growth of so important a crop, especially since it has become such a leading article of diet among all classes of the community. From what has been here hastily submitted for the consideration of such of our readers as are interested in this crop, we trust that a combination of enterprising farmers will put the experiment of manufacturing starch from the potato to the test. This business has been long practiced among the hardy farmers of the State of Maine, and the same has been done in some of the Western States. It is to be hoped that the Canadians will in future look more to the bright, and less to the dark side of the picture. There can be no question but that, in very many respects, the people of Canada are highly favored, but we are wanting in one main essential, to insure success to our operations, viz:—*enterprise*. The products of the country may be doubled with very little effort; and almost every branch of business may be carried on in a prosperous and flourishing manner; but in order to do this, more skill and energy will have to be brought into requisition, and the products and capital of the country will have to be employed very differently from what is the case at present.

The following, from the *Gardener's Chronicle*, fully corroborates our views in relation to the potato disease:—

The Potato Disease.—I have watched this peculiar visitation with much interest now for more than a twelvemonth, and although its reappearance has been doubted by some, it now begins to be generally admitted to have actually taken place, and to be carrying destruction into every quarter. I have not seen a piece of Potatoes in a cottager's garden, a farmer's field, or any other place, but what is greviously affected with what is, and has been "termed the disease," viz. ulceration, gengrene, putridity, mildew, and every form of mischief, and the effluvium is very disagreeable in every quarter.

I have the most abundant crops of Potatoes from autumn-planted sets, but the haulm and foliage of none are free from the pest, or ever have been, though to a casual observer they appeared all that could be wished, luxuriant and healthy. I had a beautiful bed of seedlings, and a quantity planted out in due timeare growing away as luxuriantly as from a good sized tuber; they are all diseased, and have long been so, although the seed was brought from Ireland, and advertised as having been saved from plants free from disease. They were sown by me on a healthy, sweet, well prepared piece of ground, and planted, too, where a Potato to my own knowledge had not been grown for these last six seasons—if ever previously. I have observed that all those manured with charrings, soot, and lime, are the last to be attacked in the stalks and foliage; and I have not as yet found a decayed or affected tuber to outward appearance amongst those manured with the above materials, but I will look sharply after them on taking up the crop, which will very soon now take place, as I have long since burnt up all the stalk and foliage. I shall, as I did last year, dress all the Potatoes as they are taken up with the above materials; indeed I have all the early crops already done; but then it is of but little use unless my neighbours also put an effectual remedy into practice.

The real cause of all this distruction amongst the Potato crops is a very small insect of a light yellow straw colour, with a small pointed head with horns, and it has six legs. This appears to me to be the female, the male is something larger, of a darker colour, having wings and four golden coloured strips on each side of its body; these insects are remarkably active in their movements, puncturing the ribs and other parts of the under sides of the folinge of the Potatoes, where they may easily be discovered with, or by the application, of a good glass; and if the stalks and green leaves are placed in a good position in respect to the reflection of a good clear light, &c, both the insect, their wood and bunches of eggs, may readily be discovered on their stems, stalks,

foliage, or tubers, that are to all appearance to a casual observer healthy and unaffected; gangrene, putridity, and mildew take place, according to atmospheric and other causes, very quickly after those destructives have made punctures, which they do astonishingly quick, proceeding on to more healthy parts. This will be clearly visible with a good microscope.

This conclusion is founded on long and close observation, I collect foliage and stalks from the the most healthy plants, and if the above described insect is to be discovered on any part, the crop will very early show symptoms of disease; the full-grown insect may be observed with the naked eye, although its shape and limbs cannot be seen. By taking a handful of Potato-stalks and leaves, and placing them in a vessel of water, and covering the whole with a bell-glass the whole progress of both insect and disease will very readily and easily be discovered by a watchful observer. This morning I was looking through my microscope at the industry of two I had enclosed on a Potato-leaf. Their activity in making punctures is *astonishing; they seem to stay a short* time to suck out the juice, as one of them made five punctures, and the other two, in less than a minute and a half, all of which were clearly observable, some of the Potato foliage I have seen thus punctured on the underside as quickly as a village green would be with a drove of pigs without rings in their snouts, and has a somewhat similar appearance in one stage. It is of little utility to search for the offender, or cause of the disease. Where it is already visible to a casual observer, in the shape blotchings, gangrene, putridity, mildew, &c., the real cause will not then be found. The real offenders must be searched for on the most healthy parts, and if they are there to be found, the crop is sure to be considerably injured, if not a total failure. I discovered the very insect above described last year, but I could not imagine it to be the cause of the evil; but its again making its appearance this year so early in the hot-houses, pits, and frames, hooped beds, borders, quarters, and every field and garden, to have a very strong suspicion of him, and that this is the real cause of all the mischief I am fully satisfied. Where soot-water and charcoal-dust is applied, it either kills or drives them away; but as to Tobacco-smoke, it dose not seem to take any more effect of this insect than it would on an old Chelsea pensioner. Whether it is a small locust or thrips I cannot say; but as to its ravages, there may yet be hopes that they may be stopped, and that this useful vegetable will not be wholly lost to the country. Atmospheric changes and variations of seasons have an astonishing effect on retarding or entirely stopped the ravages of insects.—*Gar. Cron.*

Wild Goose Wheat.—This variety of wheat has lately been favourably noticed by our friend, Mr. Evan's, in his "Canadian Agricultural Journal," which article has been subsequently copied in nearly every newspaper in the colony. It so happens that we have a long acquaintance with the variety of wheat in question, if wheat it can properly be called; and as long ago as the summer of 1830, we saw growing in the garden of a farmer in the southern division of Whitchurch, a small quantity, the seed of which was said to have been found in the crop of a wild goose, shot by a farmer's son, in that neighbourhood. This grain has been a source of pretty extensive speculation, not so much, however, with a view to ascertain its origin and intrinsic merit as a bread-producing plant, but solely with a view of gulling the credulous out of their money, without giving them even a shadow of value. Wild-goose wheat has been long known among the farmers of the United States, and enormous prices have been paid for a few grains; and, indeed, the mania at one time became so general, that the term "*Wild-goose speculation*," derived its origin from this source. For all useful practical purposes this grain is nearly worthless: it might possibly afford a small per centage of alcohol, but even for this purpose it would scarcely find a sale in the Canadian markets.

The grower of this wheat, by whom it was sold to the farmers in the neighbourhood of Montreal, is well known to us, and if we remember correctly, we cautioned him against its introduction among the Canadian farmers. We saw it repeatedly, while growing on his farm, and took some pains to convince him that it was precisely the same grain so long unfavourably known by the appellation he gave it. If he had acted upon that advice, this lengthy notice would have been uncalled for, but duty to the farmers of Canada, whose true interests we profess to advocate, forbade silence when there could be no doubt but that an attempt is about being made to scatter, as it were broadcast through the land, an entirely worthless variety of grain.

Cultivation of Cranberries.

The following practical hints on the subject of the *Cultivation* of the *Cranberry* is taken from our able and highly talented cotemporary, the *Maine Farmer* This fruit is indigenous to Canada, and might be made a very profitable crop. The soil best adapted to the cranberry plant is that which is generally found along the borders of lakes and rivers, and which is generally understood to be too wet for profitable cultivation. They are grown extensively in the Eastern States, and, indeed, have become an important item of exportation, especially in Massachusetts. The demand for this article is constantly on the increase; and when it becomes known that a certain supply can be relied upon, there is every reason to believe, that a very profitable trade might be carried on with this entirely new agricultural article, in this province.

First. Select a situation for your cranberry field on a clay soil, on such as is not liable to bake, or on a dark loam soil, or on any moist soil where there is a mixture of sand. Most of our reclaimed lands, such as can be made moderately dry, are well adapted to grow the cranberry In fact, most soils that are natural to grow the potato are suitable for the cranberry; yet the first mentioned soils should be preferred. I think there are portions of most of the farms situated in the Middle States and their vicinity that are well adapted to grow the cranberry; and I should propose to all desirous of commencing the business, to put their plants on different parts of their soil, and by so doing the better soils may be ascertained. As far as I have observed, there are three varieties of the cranberry, viz, the barberry, the cherry, and the bell. I have never known any variety of the berry that would naturalize to dry soil except the bell cranberry. This species grows much in the form of an egg. When in the wild state, it is inclined to grow on the borders of cranberry bogs, spreading its way to upland soil. This species is much larger than the others, in its wild state. Persons engaging in the cultivation of the article, should commence with the last mentioned species; and by commencing with those that have been cultivated and naturalized to a dry soil, they will much sooner accomplish their object, and with much less trouble and expense, as the plants multiply and increase abundantly. Persons commencing with one or two thousand will be able to obtain plants of their own raising sufficient to transplant acres in two or three years.

Second. Prepare your soil the same as for sowing grain, by plowing, harrowing, and making your soil even. Then mark it out in drills 18 or 20 inches apart, putting the plants in the drills, five or six inches apart. Hoe them slightly at first, till the roots become clinched, and afterwards no other cultivation is needed. The plants may be expected to run together and cover the whole soil in two or three years. The cranberry grown by cultivation usually yields from 150 to 400 bushels per acre; its fruit is two or three times as large as the wild fruit, and of a beautiful flavor; it readily keeps sound from the harvest time of it to the time of harvest again. The fruit is generally gathered in September. It is gathered with wireteeth rakes, made for the purpose. One man will generally gather from thirty to forty bushels per day, with the aid of a boy to pick up the scattering fruit.

Manufactures.

There is scarcely two opinions at present, in this country, on the importance of encouraging domestic manufacturing enterprises, as a means of giving a permanent and profitable market to its surplus agricultural produce, and as a certain antidote for the almost unparalleled commercial distress that is so generally felt at this particular crisis; in the British American Provinces. It is argued by some, that the Colonists have not sufficient confidence in themselves, to engage extensively in manufacturing even the heavy fabrics, woollen, cotton, and flax goods, on which the profits are highly remunerating. and the demand constantly on the increase; but in reply to this statement, it may be justly asserted, that by the recklessness of the importing merchants, foreign confidence is nearly destroyed, and the only successful course to be adopted, to obtain substantial relief, is, to *retrench* in every possible manner, and at the same time promote home industry in every instance where it is directed in a channel that is calculated to benefit the country. This important subject is so abundantly prolific, that we apprehend the readers of the *Cultivator* may consider us tedious; but to show them what has been done by their American neighbors, we shall copy the following from the *Farmer & Mechanic*

Manchester is the only city in New Hampshire. Eight years ago, it contained scarcely one hun-

dred inhabitants, and where now stands its principal manufacturing establishments, and where is done the business of the surrounding country, was then but one dwelling.

The population of Manchester is about 12,000 souls—it is situated on the East side of the Merrimack river, about mid-way between Concord and Nashua. There are three incorporated companies, or corporations, viz:—the Stark, Amoskeag, and Manchester.

The Stark (which was commenced in 1838,) has one mill 500 feet by 50, and five stories high, with 23,000 spindles, 660 looms, and gives employment to 750 females, and 200 males, and a new mill now receiving her machinery, that will contain 20,000 spindles, 550 looms, and require about 900 hands.

The Amoskeag Corporation has three mills in operation, called the Amoskeag new mills. No. 3 mill is 440 feet by 60, 4 stories, besides attic and basement—has 120 cards, 30 speeders, 160 spinning frames, of 128 spindles each, (making 20,480 spindles,) and 590 looms, 500 of which are in one room, with one girl to every three looms—a rich spectacle, I assure you. The 90 looms are for weaving cotton flannel. This company now employ 1400 males and females, and use in the three mills over 12,000 bales of cotton, and make from 14,000,000 to 15,000,000 yards, No. 14 goods, per year. This company is now laying the foundation for a new mill 350 feet by 62, and 6 stories high, to contain 20,000 spindles. The ground is surveyed for two more of equal size, but will be delayed until the effect of the new tariff is ascertained.

Upon this corporation, and belonging, as I understand, to the land and water power company, is a machine shop and Foundry, that gives employment to some 300 men, and boys in the manufacture of most kinds of cotton and woollen machinery.

Next below is the Manchester Corporation, with one mill for the manufacture of Mouslin de Laines—of sufficient size for 20,000 spindles for cotton, and 19,000 for worsted—(10,000 for cotton and 13,000 for worsted are all that is yet in—and the company have countermanded the orders for the balance of their machinery for the present, fearing they might not be able to manufacture Mouslin de Laines to compete with importations under the new law,)—and 1000 looms. The Scotch improved mule is used in this mill for spinning wool. Twenty-four of them are tended by girls, and 25 by boys—'tis said the girls keep their room in the best order, do the best work, and quite as much. This mill, in full operation, would use 300,000 fleeces of wool and 2000 bales best selected New Orleans cotton, (worth about 10 cents in New Orleans,) per year. You must be aware that only about two-thirds or three-quarters of each fleece is fit for Mouslin de Laines.

The printing establishment of this Company is 276 by 50 feet, and 5 stories high, and will print 1000 pieces per day.

This Company also intend to erect a new mill for making fine print goods, which would require 5,000 bales best cotton per year to supply it, but will delay for the present.

As a sample of what these large corporations are obliged to expend in advance to any profit, I will say that this company paid out in money for American labor and machinery, $800,000, and for foreign machinery, such as was not made in this country, (Mouslin de Laine printing machinery,) about $50,000.

Besides the foregoing, there is much of interest that might be said of this city of the Granite State, but I have spun my yarn quite too long already, and will only remind you that there is two steam saw and planing mills, one mill for the manufacture of flour, and one for lumber of any variety, and one or two for sash and blinds, &c.

P. S. Below the Mouslin de Laine mill the canal is being extended 1200 feet, which affords a splendid site for a "few more (mills) of the same sort."

At Amoskeag, is the old Amoskeag Ticking Mill, with 4000 spindles, 132 looms, and employing 200 hands, in the manufacture of a very superior ticking, well known to the mercantile community.

At this place, in the shop of W. P. Newell, & Co, I saw the splendid cracker cutting machine, mentioned in my last, which does much credit to the foreman of the shop, Mr. Baldwin, to whom it is indebted for several valuable improvements.

W.

Manchester, N. H., August 20th, 1846.

To Cure Corns.—Scrape the corn so as to nearly cause it to bleed; apply a salve composed of calomel and lard; renew the application three or four times a week; keep the feet clean, and wear loose shoes.

Provincial Agricultural Association.

Our readers will observe, that the first Provincial Show will be held in Toronto, on the 21st and 22d inst. The arrangements may not be as complete as would have been the case had more time been given the Committee of Management, but at all events a commencement has been made, and as the Association will be in future governed by a Board of Agriculture, there can be no question, but that its government and management will favorably compare with that of any similar Association in being. It must be borne in mind, that the collective wisdom of Western Canada will be semi-annually concentrated in the Board of Agriculture, and that this Board will have the entire controul of the Agricultural Association—the publication of its proceedings—the Model Farm—the Agricultural Museum—and of the various other interests which will legitimately come under its management. In all probability a meeting of the Board will take place before the close of navigation this autumn, and then, and not till then, will the public be able to judge correctly of the benefits which will accrue to the country through its powerful agency.

Preparations are being made on a grand scale, for the Exhibition, and it is confidently expected that the competition for the prizes, and attendance of visitors, will be equal to the first efforts of similar Associations in Great Britain and other countries where they have been introduced. The citizens of Toronto appear quite determined to acquit themselves with credit on the occasion, and we doubt not but all who visit the Show will return home strongly impressed with the important influence that such mammoth exhibitions will have upon the productive interests of the country. It might not be out of place to mention, that any person in Western Canada may compete for one or all of the prizes, by paying to the Treasurer the small subscription of *five shillings*.

New York Agricultural Show.—Agreeably to the announcement to our readers, we visited the Auburn Exhibition, and while there saw much to admire. Indeed the improvements made during the past twelve months have been so great, especially in some departments of Agricultural Machinery, that we deem it a duty we owe our numerous readers, to publish a report of the exhibition in the November number of our journal This might have been done in time for the October number, had not urgent business on the farm prevented us from doing so; however, we shall endeavour to prepare it previous to our next issue.

Agricultural Warehouse.—From the notice of this proposed establishment, given in our last, our readers would be led to expect that it would be opened by the 1st inst., but owing to the active part we are obliged to take in making preparations for the Provincial Agricultural Show, it will be the lapse of some weeks before the Warehouse can be properly opened, or orders for machinery at all satisfactorily attended to.

A number of inquiries respecting the potato-digging machine, separators, and other improved machinery, have come to hand, but owing to the great distance we have been residing from Toronto, it has been quite impracticable to attend to them. The machine for digging potatoes has been tested by the editor, and it is with regret he has to state, that it has not equalled his expectations.

Extraordinary fine Crop of Peaches.

It has long been our opinion that the Canadian market might be fully and very profitably supplied with a superior quality of peaches, being the produce of this country, provided the proper steps were taken to secure this desirable object. The peach may be grown in open culture in the southern portions of the Western, London, Talbot, Niagara, and Gore Districts, and in those sections where it is found a profitable crop, pains should be taken to introduce and cultivate the best varieties, and such as are peculiarly hardy and adapted to the climate of the country. Dried peaches cannot be had in Canada without paying two or three prices for them; but if a few enterprising cultivators would engage in the business of growing this fruit extensively in some location in Canada suited for the enterprise, we see no reason why this fruit could not be had in any desired quantity, both in a green and dried state, at prices that would not seem exorbitantly high, and at the same time liberally remunerate the growers and dealers in the article. To show what has been done elsewhere in this line, we would mention, that in the small state of Delaware, a single orchardist, has, at the present period, upwards of 500 acres of a peach orchard.

from which he sends some thousands of baskets of fruit to the Atlantic cities, and obtains the very highest price in the market. A similar enterprise might be engaged in along the north shore of Lake Erie, where the soil and climate are peculiarly favourable for this delicate fruit, with a reasonable prospect of its turning out a lucrative business; but in order that such an undertaking should be successful, it must be conducted with a liberal amount of capital and skill. Judging from the manner in which matters of this kind has been heretofore managed in Canada, it is scarcely reasonable to hope that persons can be found who would be willing to undertake to supply the home market with an article of home produce when a similar article could be quite as profitably imported from the neighbouring States. Every thing, as usual, we suppose, will have to be done by an isolated effort, and that, too, upon a small scale; but, nevertheless, it does not follow that, even by this mode of management, the country could not be made to produce this and nearly all the luxuries of life we require, of as good a description, and which might be afforded at as cheap a rate as can be supplied from other countries. As an evidence of what may be done in the cultivation of the peach, we would mention the success of two gentlemen farmers of the Home District. Some scores of instances of a similar description might be given, but as the quality of the fruit under notice was of such a superior description, we consider it due to the parties who who grew them, to instance them in particular; Alexander Mackechnie, Esq., Richmond Hill, Yonge Street, has two seedling peach trees in his garden, which grew the present season upwards of one bushel of excellent fruit, and which would, in point of size and flavour, favourably compare with the best fruit of this kind sold in the Toronto market. The other case we would mention, to prove that peaches may be grown even farther north than Toronto, is that of Franklin Jackes, Esq., Yonge Street. Mr. Jackes also had two trees, from which he gathered five bushels of fruit. They were of an improved cultivated variety; and that our readers may judge correctly of their very superior quality, we would mention a few facts that came directly under our notice. One of the largest sized weighed ten ounces, and measured in circumference eleven inches, and quite a number of others measured from nine to ten inches in circumference. A portion of this fruit was sold to Mrs. Dunlop, of this city, at the rate of five dollars per bushel, which was retailed again at from 2s. 6d. to 3s. per dozen, and found a ready sale at these prices. It is due to the enterprising late proprietor of Mr. Jackes's estate, Jas. Hervey Price, Esq., M.P.P., to mention that these trees were planted by him some four or five years since, when the farm was in his possession.

Application of Gypsum or Plaster of Paris.—Ground plaster, applied as a fertilizer, is so well known, and its properties and uses so well established, that it is presumed that most intelligent farmers are perfectly acquainted with everything concerning it. It is extensively used, and is very advantageous to clover, beans, peas, turnips, cabbages, &c.; but it does not appear to answer so well on natural meadows, for grain crops, nor on wet, or very poor lands, containing but little vegetable matter, nor is thought to be of much use in places approximate to the sea. It is extensively used in composts in barn-yards and stables, and in neutralizing decayed or putrescent substances, in vaults, urine tanks, &c.; and is advantageously employed with green manures, and as a top-dressing of rotted dung or compost, to which it gives remarkable activity.

The quantity of gypsum used per acre varies from half a bushel to five bushels, depending upon the quantum of substances in the ground on which the component parts of the gypsum operate, or are by them operated upon. In proportion as these are scarce or abundant, the effects are produced in a greater or less degree. And when they are exhausted, or where they do not exist, no quantity whatever will produce any agricultural benefit. If a greater quantity be used, than is required to exhaust the subjects of its operation, the excess will remain inert and inactive until new subjects call forth its powers. Still the gypsum remaining in the soil, on a renewed application of dung, animal, or vegetable matter, will operate, but less powerfully, although it may have remained in the ground for years. Therefore, small quantities, by frequent applications, are much the best, notwithstanding the excess, if applied too profusely, or beyond what the substances in the earth require, will remain in its original state of composition.—*Am. Ag.*

Rub *Chilblains* with a mixture of seven parts water and one part muriatic acid, to remove them.

Hints for Young Men.

It is well remarked by an intelligent author of our day, that "a young man, be his profession what it will, whether he be a merchant, manufacturer, lawyer, physician, chemist, architect, soldier, farmer, mechanic, or artisan, should be profoundly impressed with these principles: 'I will not linger,' he should say to himself, 'In barren and disgraceful mediocrity: I will strive to find sufficient resources in my own genius, aided by observation and study, or in persevering and active industry, in firm resolution, in constant meditation, seconded by the intelligence and the examples which have preceded or which surround me, to deserve to be pointed out as a model, to raise myself above the obscure and insignificent multitude, to act a distinguished part, to be happy, by making myself.' The necessary consequence then is, that he requires fortune and celebrity by means of the immense power of continuity of action, and by the determination to attain them.—Such a person does not vegetate on the earth—he lives, and is worthy of living."

"Let it be your unceasing aim," says another writer, "to learn what you can from everybody, but to think and act for yourself." It is said that Sir Walter Scott never met with any man, let his calling be what it might, even the most stupid fellow that ever rubbed down a horse, from whom he could not, by a few moment's conversation, learn something which did not before know, and which was valuable to him. No man ever became great by mere imitation. You must have a character of your own, and rules by which that character is regulated. It has been said of Franklin, that he was a philosopher because in his childhood he formed those rules which regulated his conduct even in old age. Whatever you do, *do it well;* do it methodically, yet do not make yourself the slave of method.

A certain well-regulated habit of looking beyond our immediate situations is justly considered the parent of all laudable enterprises. This is that noble ambition, which cooly regarding the indistinct expanse of the future, traces out a road of consistent well-doing.

The weak man casts his eye across the sea of time, and, viewing no furrowed path, commits his vessel at random to the waves: the prudent and keen-slighted, looks out upon the same trackless way, but he has a compass to guide him to the haven of prosperity and fame. The one yields to every struggle with the storm, he is tossed about without pity or succour, or wrecked upon the quicksands which he has not learnt to shun: the other, however harassed or retarded, however, borne down by the current of unavoidable necessity, overcomes the dangers and difficulties of his course, and obtains the prize for which he has contended; he has exclaimed with Milton,

"I argue not
Against Heaven's hand or will; nor hate one jot
Of heart or hope; but still bear up, and steer
Right onwards."

Mr *George Stephenson,* the eminent engineer, at a recent entertainment at Newcastle, gave the following account of himself:—"The first locomotive that I made was at Killingworth colliery, and with Lord Ravensworth's money. Yes! Lord Ravensworth & Co. were the first parties that would intrust me with money to make a locomotive engine. That engine was made 32 years ago, and we called it 'My Lord.' I said to my friends that there was no limit to the speed of such an engine, provided the works could be made to stand. In this respect great perfection has been reached, and in consequence a very high velocity has been attained. In what has been done under my management, the merit is only in my own: I have been most ably seconded and assisted by my son. In the earlier period of my carreer, and when he was a boy, *I saw how deficient I was in education, and made up my mind, that he should not labor under the same defect, but that he would put him to a good school, and give him a liberal training. I was, however, a poor man, and how do you think I managed? I betook myself to mending my neighbors' clocks and watches at night, after my daily labor was done; and thus I procured the means of educating my son.* He became my assistant and companion. He got an appointment as under-reviewer, and at nights we worked together at our engineering. I got leave to go to Killingworth to lay down a railway at Hetton, and next to Darlington; and after that I went Liverpool, to plan a line to Manchester. I there pledged myself to attain a speed of 10 miles an hour. I said I had no doubt the locomotive might be made to go much faster, but we had better be moderate at the beginning. The directors said I was quite right; for if, when they went to Parliament, I talked of going at a greater rate than ten miles

an hour, I would put a cross on the concern. It was not an easy task for me to keep the engine down to ten miles an houf, but it must be done, and I did my best. I had to place myself in that most unpleasant of all positions—the witness-box of a Parliamentary committee. I was not long in it, I assure you, before I began to wish for a hole to creep out at. I could not find words to satisfy either the committee or myself. Some one inquired if I were a foreigner, and another hinted that I was mad. But I put up with every rebuff, and went on with my plans, determined not to be put down. Assistance gradually increased—improvements were made every day—and to-day a train, which started from London in the morning, has brought me in the afternoon to my native soil, and enabled me to take my place in this room, and see around me many faces which I have great pleasure in looking upon."

The complaining impatience of caprice or discontent, remote as it is from everything like exalted determination, has often been mistaken for this noble consistency in looking beyond the present. The difference is sufficiently clear. He who pursues a future happiness, or prosperity, or honor, by the right path, does not cast away the good in his possession, nor neglect the duties which lie before him; but he endeavors to shape them, by slow degrees, to that model of perfection which his feelings or his reason have set up.

The great American philosopher and statesman, Benjamin Franklin, drew up the following list of moral virtues:

Temperance.—Eat not to fullness; drink not to elevation.

Silence.—Speak not but what may benefit others or yourself; avoid trifling conversation.

Order.—Let all your things have their places; let each part of your business have its time.

Resolution.—Resolve to perform what you ought; perform without fail what you resolve.

Frugality.—Make no expense, but do good to others or yourself, that is, waste nothing.

Industry.—Lose no time; be always employed in something useful; cut off all unnecessary actions.

Sincerity.—Use no hurtful deceit; think innocently and justly; and if you speak, speak accordingly.

Justice.—Wrong none by doing injuries, or omitting the benefits that are your duty.

Moderation.—Avoid extremes; forbear resenting injuries.

Cleanliness.—Suffer no uncleanliness in body, clothes, or habitation.

Tranquility.—Be not disturbed about trifles, or at accidents common or unavoidable.

Humility.—Imitate Jesus Christ.

The same great man likewise drew up the following plan for the regular employment of his time; examining himself each morning and evening as to what he had to do, what he he had done, or left undone; by which practice he was better able to improve his future conduct:

MORNING.	HOURS.	
The question, What good shall I do to-day?	6 7 8	Rise, wash, and address Almighty God; contrive the day's business, and take the resolution of the day; prosecute the present study and breakfast
	9 10 11 12	Work.
	1 2	Read or look over my accounts, and dine.
	3 4 5 6 7	Work.

EVENING.	HOURS.	
The question, What good have I done to-day? what have left undone which I ought to have done?	8 9 10	Put things in their places; amusement; supper, examination of the day, address the Almighty.
	11 12 1 2 3 4 5	Sleep.

Milton, the Poet of Paradise Lost, who, during an active life in the most troublesome times, was unceasing in the cultivation of his understanding, thus describes his own habits:

"Those morning haunts are where they should be, *at home;* not sleeping or concocting the surfeits of an irregular feast, but up and stirring; in winter, often ere the sound of a bell awake men to labor or devotion; in summer as oft with the bird that first arouses, or not much tardier; to read good authors, or cause them to be read, till the attention be weary or memory have its full fraught; then with useful and generous labors preserving the body's health and hardiness, to render lightsome, clear, and not lumpish, obedi-

ence to the mind, to the cause of religion and our country's liberty." Energy of mind, like strength of body, must be acquired by exercise, and that the consciousness of desert in encountering difficulties, must be felt to enable us to accomplish any great work. All our eminent men have been distinguished by fixing upon some great object, and possessing themselves with such a lively conception of it that has led them on through years of toil.

Correspondence.

A Wet Day, No. 2.

Dear Sir,—

The highly complimentary manner in which you noticed my former communication, has induced me to take up my pen a second time, to offer a few remarks for your consideration; and if you think them worthy a column in your paper, they are at your service. I had intended writing you some two months ago, but having an unusually large harvest to attend to, my time has been so much taken up, that I have had little inclination for writing. I make this remark, lest you might think this the only wet day that has elapsed since I last wrote you.

My feelings are still deeply interested in aiding and forwarding the cause of Agriculture and raising our farmers to that standard which their calling and station demands; and that which I think to be the most effectual means of increasing their prosperity and improving their social condition, is, an earnest appeal to their intellect for improvement. Not that a man should go to a book to learn to hold a plough, but to understand the nature and foundation of his soils, their component parts, their susceptiblities of varied culture, and what crops are suited to their varied character—all these things, and they are essential to the profitable occupation of our soils, should be perfectly understood, and yet how few do understand them. I am fully satisfied that our farmers do not read enough on such subjects as relate to their own personal interest. I am often amused with the prejudice which exists against innovations, and blush for my calling, when I hear men possessing an ordinary share of common sense, talking of killing pork in the *new of the moon*, planting potatoes in another stage, sowing peas in a third stage of it, and a hundred other equally rediculous and absurd assertions. If you ask them the reason of all this, they say, my father did or said so, and I always did so; whereas two hours' attentive reading of a common-sense author, and an hour or two of abstract thought, would convince them of the error and folly of the prejudices they act upon.

"The business of husbandry," says an author in drawing a comparison, may be likened to the healing art; the farmer, as well as the physician, may plod on mechanically without the aid of study or of science, happy, if you please, in his own conceit, and in his ignorance; both may have tolerable success, by adopting the example of enlightened neighbors, or following the impulse of their own discriminating minds, yet, both would do better, were they to understand perfectly the organization and properties of the subjects upon which they are to operate or are to employ. Generations have been engaged in investigating the business of both professions, and have handed down to us the result of their observations and experience; these lessons of wisdom are considered indispensible to the student of medicine—they are no less beneficial to the student of agriculture.

A farmer can be, and when he understands his rights and privelidges, is one of the most indpendent men on earth. The wife of a farmer is one of labor, it is true, but labor, unless carried to excess, is far from being prejudicial to the body or mind; vigorous excercise, such is the law of our nature, is necessary to the full development of either our bodily or mental powers; and unless the necessity is forced upon us in part, we are apt to evade it. I trust you will bear with me, Mr. Editor, if my remarks are verbose, when I tell you, that the subject of mental culture deeply interests me, and it affords me a secret satisfaction in giving an expression to some of my ideas upon it. I sincerely wish that more of our farmers knew the calm satisfaction of taking an improving volume by the peaceful fire-side, or the luxury of improving the mind How few men who love their homes and their book, that are vicious! Employment, roused by some noble object, is the secret road to happiness, and of all employments, mental labor lasts the longest. The body soon wearies, but the mind is immortal.

"The man," says Robert Hall, "who has gained a taste for books, will in all likelihood become thoughtful; and when you have given him a habit of thinking, you have conferred [illegible] much greater favor than by the gift of a large sum

of money, since you have put into his possession the principle of all legitimate prosperity."

But I will conclude; in my next I propose giving some of my own experience and observations on farming. Though I make no pretensions to philosophy or science in my practical experience, yet I trust to be benefited by an investigation of them, and am not afraid of their practical application to my profession.

Yours respectfully,

CHARLES E. CHADWICK.

Dereham, Brock District,
September, 1846.

Bones Dissolved in Sulphuric Acid as Manure for Turnips.—The application of bones dissolved in sulphuric acid as a manure for turnips being now so general, perhaps the following hint may be acceptable to your readers, as it is the opinion of several practical farmers who tried the experiment last year, and are about to repeat it. Take a large but shallow tub, about 18 inches deep (regulating the size according to the quantity required) spread the bones at the bottom of the tub, and add sufficient water bearly to cover them, then pour in the acid, stirring the whole mass with a strong fork; an immediate fermentation takes place, and the bones will be sufficiently dissolved for use in 48 hours, or even less. The best way to prepare the compost for the drill; is to mix half the quantity of peat or wood ashes according to quantity of bones used, passing it if necessary, through a coarse sive—and afterwards adding as much dry mould as the drill requires. This plan is, we think, better than dissolving the bones in a heap of dry mould (as recommended by Mr. Pusey,) because, without great care, the acid when poured on to the bones, is apt to escape into the mould, therefore we prefer adding the water first; a tub is better than an iron vessel, the sulphuric acid having a great affinity for metal will soon destroy it, but it has no affect upon wood. The proper proportion per acre is 4 bushels of bone dust, with 40 pints of sulphuric acid, which weigh about 70 lbs. if bought in small quantities; 3*d.* a pint is the price of the acid in the country. —*Ag. Gaz.*

Influence of Knowledge upon Agriculture.—Here, then, there is an opportunity for the highest degree of intelligence, as applicable to the improvement of agriculture; for who can doubt that these extraordinary results are the consequence of that intelligence and enlightened skill, which are equally the instruments of success in every other art. But it seems idle to argue this point. All the improvements which have been made in agriculture; are as much the result of the application of mind and of knowledge to the subject, as any of the improvements made in manufactures or the mechanic arts. Accident has produced nothing. The dull, plodding laborer originates nothing, any more than the beast which he drives. The present advanced state of agriculture as a practical art, all the improvements which have been effected in it, are due to the highly-intelligent minds, the men of sience, of learning, of observation, of skill, who have applied their attention and have devoted their time, talents, and fortunes, to it.

Scours in Sheep.—Mr. Editor:—Below I give you a recipe to cure the scours in sheep, that I have thoroughly tested and never knew to fail.

Cure for Scours in Sheep.—First take your sheep shears and tag them, as the filth that adheres to them in such cases seems to augment the disease; and then give from 4 to 6 table spoonsful of good rennet, prepared the same as cheese makers use it to set their curds for cheese. To a lamb 8 or 10 months old, I give 4 spoonsful—and if it is not well in twenty-four hours, I repeat the dose; but one dose generally cures. I keep it on hand, in a bottle, at all times. As above stated, I have never known this remedy to fail.

R. BURRITT.

Burdett, 1846.—Gen. Far.

Cure for Sweeney in Horses.—Take half a pint of grease, tried from old rusty bacon; half an ounce of gum-camphor, shaved fine; four or five red peppers; simmer altogether till thoroughly mixed. Apply this every other morning to the effected shoulder, rubbing it briskly with a smooth stone until it becomes quite hot. Pulling up the skin two or three times a day, where the flesh is wasted, will expedite the cure.—*Ohio Cult.*

Scab in Horses.—The Author of the "Handbook of Farriery," in the Mark Lane (Eng.,) Express, says the following recipe has invariably proved successful in curing this disorder: Take of mild mercurial ointment, 6 oz.; sublimated sulphur, powdered white helebore, of each 1 oz.; palm oil, 4 oz. Mix an ointment. It is essential that it be well rubbed into the effected parts.

On Agricultural Improvements.

The year which is now drawing rapidly to a close will long be remembered and marked as a important and instructive one in the annals of agriculture. Never before, in the same space of time, have so many and varied experiments been performed---never before could the sciences boast of such a band of experimentalists---nor has such a sum of money been previously expended in endeavours to increase the fertility of the land and the luxuriance of the crops. We have now arrived at a period of comparative inactivity; and our time may be very profitably employed in inquiring what preparations we can make for next year's investigations, and what subjects will be most likely to yield important results to our inquiries. In short, this is the period at which we must plan our experiments for the next season, examine the precautions necessary to insure success, determine the details of the operations we intend to carry out, and obtain all the prelimipary information that we require. There are many farmers throughout the country who are most anxious to join the ranks of the experimentalists but who feel at a loss what snbjects to fix on for examinations; and we fear that there are not a few who, having proceeded without method, have, as might been expected, experienced failures, are ready to class agricultural improvements with the whims and absurdities of the day, and are determining to return to the good old plans of operation to which they were accustomed before guano and chemical manures had turned the heads and emptied the pockets of the farmers.

To these two classes these notes are particularly addressed; and an attempt will be made to show that it is probable that improved methods of cultivation may be ascertained by means of experiments, if they be carried on in a proper manner: and care be taken to observe and record with accuracy the results. For example, let us now confine our attention to one branch of this extensive subject, and one branch is perfectly sufficient to occupy the spare time of the farmer for at least one season. Attempting to accomplish too much is one of the most frequent and certain causes of failure.

The greatest portion of all plants are composed of the bodies known to chemists under the names of carbon, hydrogen, oxygen, and nitrogen, or charcoal, water, and nitrogen; but these do not constitute the whole bulk of the vegetable. If we burn it, these substances are consumed or driven off, and a matter called ash remains, which is small in quantity, but still important, nay essential to the well-being of the plant. Those portions which are dissipated by heat, are collectively termed the organic part; those which remain, the inorganic. All the ingredients of the organic portion are found in the air, and probably it is from the air that plants derive them; but it is from the soil, and the soil alone, that they can obtain the inorganic materials; and hence an answer to the question, Does my soil contain all these matters that a particular crop requires? is of the greatest importance to every farmer. As yet, unfortunately, our acquaintance with the composition and qualities of the ashes of plants is extremely limited; so that the few remarks offered must be looked on, not as the whole, but merely a very small portion of the truth.

The quantity of inorganic matter we know varies with the plant, and also the part of the plant subject to examination. One thousand pounds of what yield two pounds of ash. The same quantity of wheat straw about fifty pounds. The proportions in one or two others are given in this table:—

1000 lb. turnips	yield of ash	-	8 lb.
" beech	" "	-	4 lb.
" oak	" "	-	2 lb.

So that land may contain enough to supply the moderate requirements of trees, but not sufficient to satisfy the demands of grain crops. The quantity varies with the variety of the plant, and also with the soil on which it is grown, the proportion in the same variety varying from 6 to 10 per cent, according to the soil. So that a plant may grow with a small proportion of inorganic matter, but to produce perfect and healthy individuals, the larger proportion is requisite. Not only, however, must these substances be present in the soil, and they must exist in considerable abundance, and in a much greater proportion than the plant absolutely requires; for its roots, even if they penetrate to a considerable distance, can absorb by their extremities alone; and these can come in contact with only a very small proportion of the soil. The more abundantly the plant is supplied with food, the more rapid and more perfect will be its development.

Hitherto quantity has been alone alluded to, but the differences in it are not greater than what

occur in quality. Wheat contains much more potass then oats; while oats, on the other hand, contain a much greater proportion of silica, so that the one will exhaust the soil of the ingredient which it possesses in a large quantity, much more rapidly than the other; and land, which from its deficiency of potass, will not bear wheat with advantage, may, if it contain silica, produce large crops of oats; and further, alternate crops *will not exhaust the land so rapidly*, as continuing, year after year, to cultivate the same species.

As plants can only have their food in a liquid state, the land must not only contain the ingredients they require, but there must also exist in it agents which have power of dissolving them; for it is quite possible to suppose a piece of ground containing all the necessary ingredients, being barren, if they be in a solid state; so that we must not rest satisfied with *merely* ascertaining that the required substances be present, but we must also ascertain the form in which they exist, and whether they can be rendered easily soluble in water.

One object of the application of manures is, to restore to the land what the crop has taken away. If all the crop were consumed on the farm, and the refuse, as well as the bones and carcasses of the different animals fed on it, were returned regularly to the soil, then its present fertility would be kept up. And, as we have seen, that the greatest portion of those substances are in the straw, if it be applied to the land, the largest proportion of what the plant took away will be restored; but if no such return he made, it is clear, that, in time, the land will be exhausted and unable to bear a similar crop. In many parts of the United States we have examples of the deterioration of land caused in this manner. Large tracts in Virginia, after such treatment, have been given up to hopeless barrenness; and, if farther proof of the correctness of these statements be required, we shall find it abundantly in Cheshire. The old pastures, which have been drained of their phosphates, by the cheese prepared from the milk of the cows fed on them, and which, in many instances, were very much deteriorated, have been completely renewed by the restoration of the phosphates in the application of bone dust

I have made the foregoing statements to shew that an attentive examination of the composition of the ashes of plants with that of the soil on which they have been grown, is a subject which will yield infomation of the highest value; indeed, I believe, its careful study will lead to greater improvements than any other question at present agitated, and will afford data, from which general laws of the greatest importance will be deduced, and tend to place agriculture among the certain, instead of, as it is now among the *uncertain* sciences. Three separate objects of examination have been indicated.---

1. The examination of the ashes of plants.

2. Are these ingredients present in the particles of soil?

3. If present, whether they be soluble, or agents required to render them so?

The determination of the two latter questions will point out whether a direct or indirect fertilizer be required; direct, by supplying the deficient ingredients; indirect, rendering soluble the matters already there, but not in their present state fitted for the nourishment of the crop.

The difficulty of performing the analysis required, ought, at least in Scotland, not to be pleaded, as an excuse for neglecting this most important subject; for, if the farmer be unable to do it himself, he can get it done, at a very low rate be the officers of that most valuable institution, the Agricultural Chemical Association.

G. Atkin, M. D.

Berwick, 28th December, 1844.

—*West. Ag.*

Potato Onions.---We take land in a good state of cultivation, (not green sward,) manure liberally with well rotted manure, plough it in from four to six inches deep, harrow well, drawn drills 15 inches apart, 2 or 3 inches in depth, we use the cultivator with two teeth, for the purpose, set the seed 10 or 12 inches apart in the drills, cover it from sight, keep the ground free from weeds, and hoe evenly. Each seed produces 2 tiers, the lower tier from two to five onions, each onion is at this time, June 20, from 1 to 3 inches in diameter. The upper or central tier from 3 to 7 onions 1-2 to 1 1-2 inches in diameter, these are, many of them, ripe, and are being detached from their hold in the ground by the tier below, they are to be used for seed. The lower tier will continue to grow until about the middle of July, and will average larger than the onions found in your market, and are very mild. There is growing on our farm 1-4 of an acre of these onions, and if the yield is not 125 bushels, or five hundred to the acre we shall be disappointed.---*Bost. Cult.*

The Colleges we need--Education of Farmers' Sons.

An extract from Colman's Observations on European Agriculture.

It is quite certain that the course of education pursued at most colleges and universities, is quite unsuited to qualify men for the common business and pursuits of life. Indeed, it would seem, in many cases, to operate as a positive disqualification; and men who may have distinguished themselves at our universities for their classical and scholastic attainments, are often thrown upon society as helpless and as incompetent to provide for themselves, or to serve the community, as children. We have small encouragement at present, I confess, to look for any thing better. The system of education at our colleges and universities, has undergone little substantial alteration for a century; and what is called classical learning, and the subtleties and puerilities of scholastic divinity, occupy as much attention as formerly, and hold a place in these ancient seats of learning so high in the estimation of those to whom the management of these places is intrusted, that there is little hope of dislodging them. I am no enemy to classical acquirements, as a matter of elegant ornament and taste, as a source of delightful recreation, and as an essential element in a complete education. But to give them a preference in any way to learning more useful, substantial, and practical, is not to estimate things according to their real importance. The time and expense devoted to them, might be given to studies infinitely more valuable * * * A college, therefore, of the practical arts, and of those sciences which directly bear upon practice, must be greatly desired by that portion of the community whose education must be to them a means of subsistence, and who have little time to cultivate the arts but with a view to apply them at once to the purposes of practical life.

It must be admitted likewise that many of these arts and sciences are, properly speaking, the creations of modern times, and could not be expected to find their place in schemes of education formed in a remote period. Chemistry, mineralogy, geology, and electricity, are all of modern date. There are those living, who may be said to have assisted at their birth and have rocked the cradle of their infancy. All these are intimately connected with the practical arts, and especially with the advancement of the great art of agriculture; and we may confidently look for the most important benefits to agriculture from the study and application of these sciences. Botany, likewise, and the nature, habits, and uses of plants; comparative anatomy and physiology the study of which may prove so useful in the improvement of the breeds of domestic animals, and in the treatment of the diseases and injuries to which they are liable; the art of measuring superfices and solids, an art so constantly in demand in practical agriculture; mechanics, and the construction of farming implements and buildings; hydraulics, a science so important in draining, irrigation, and the general management of water, and the uses of steam, that wonderful agent, which seems destined to exert a more powerful influence over the affairs and common business of the world, than any or than all other agents besides; the principles of engineering, in the construction of roads and embankments;—all these are matters to be learned and studied, as furnishing direct uses and aid in the practice of agriculture, and bearing immediately upon its advancement. These considerations demonstrate the importance of an institution, where such branches may be taught under the advantages of competent teachers, and means and apparatus adapted to their illustration.

No one will pretend that agriculture, even in the more improved form in which it is any where to be found, has yet approximated the perfection of the art. The perfection of the art of agriculture is that in which the largest amount of product is obtained at the least expense of labor and manure, and with the exhaustion to the land. Indeed there is reason to hope that we may presently reach a system of cultivation in which, though the crops may be large, the land itself shall not only not be exhausted, but be in a course of continual amelioration. I know well there must be a limit; but that limit no one can yet define. We know already that crops with large leaves, and therefore large powers of absorption, are commonly improving crops, and we know equally well that the growth of a forest upon land, so far from exhausting it, is, in fact, an improver of the soil. There is every reason to hope, therefore, that such a system of husbandry may presently be found, when, without any extraneous aid, and from the resources of the farm itself, the largest crops may be obtained, and the powers of production extended. The system of nature

very where, if man performs his duty, is a system of amelioration, and not of deterioration; it is every where a system of recuperative compensations, if man does not controvert or pervert its laws.

That our crops, for example, are not what they might be, is universally admtted. Within the last few years, crops of many kinds have increased immensely. A few years since, fifty bushels of Indian corn, to an acre, was deemed a large crop. One hundred have been frequently produced. Thirty bushels of wheat has heretofore been deemed more than an ordinary yield. Fifty is now not uncommon. I have known sixty, and nearly seventy, to have been grown, and over a large farm, the crop to have averaged fifty-six bushels. Thirty tons of carrots per acre is the ordinary crop of a farmer within my knowledge; and I have on my table before me the authenticated statement of eighty-eight tons of mangel-wurzel to the acre. I am willing to admit that these are rare instances. Some of them may be considered as single instances; but it is obvious that one well-established case is as good as a thousand in demonstrating the practicability of that which is claimed to be done.

French Mode of making Apple Butter.

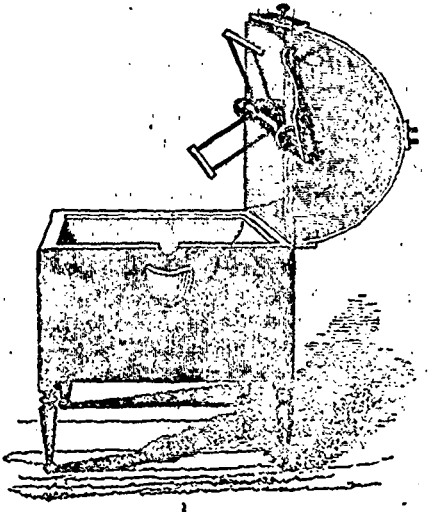
In France, a kind of jam, or apple butter, called *raisine compose*, is prepared by boiling apples in unfermented wine. The must or wine should be reduced by boiling to one-half of its bulk, to be continually skimmed as fresh scum arises, and afterwards strained through a cloth or a fine sive. The apples are then pared, cut into quarters, and put into this liquor (raisine) and left to simmer gently over a fire, with a continual stirring with a wooden spatula or slice, till the apple becomes thoroughly amalgamated with liquor, and the whole forms a kind of marmalade, which is extremely agreeable to the taste.

When prepared in the northern departments of France, the raisine after the first boiling, skimming and straining, is set in a cool place for twenty-four hours, when a saline liquor, like a scum, appears on the surface. This is removed, and the liquor strained, before it is mixed with the apples, as above. This scum consists principally of tartaric acid, which would spoil the raisine, and prevents it from keeping sweet, but which is not perceivable when the grapes, from which the wine is made, have been ripened in a southern climate. The raisine, when properly prepared, is sweet, but with a slight flavor of acidity, like lemon-juice mixed with honey. The best raisine is made in Burgundy. In Normandy, a similar marmalade is composed of cider and pears, much resembling the "apple-butter," or "apple-sauce," of the United States; but it is not so good as the raisine, being apt to ferment. In some cases, the pears are put into an earthen vessel without water, and placed in a baker's oven, after the bread has been drawn, previously to mixing with water.

The best raisine is considered very wholesome, particularly for children, who eat it spread on bread, and for persons in delicate health, whose stomachs will not bear butter. In Italy, the raisins is eaten with *gnocchi* and other preparations of Indian corn, and with maccaroni, to give a flavor to these dishes. There is nothing better to make a dinner relish. and we would always have it, or apple, or cranberry sauce, if possible. —*Am. Ag.*

Preservation of Apples.—Apples intended to be preserved for winter and spring use, should remain upon the trees until quite ripe, which usually takes place at the coming of the first heavy frosts. They should then be plucked from the trees by hand, in a fair day, and packed up immediately in casks, in alternate layers of dry sand, plaster, chaff, saw-dust, or bran, and conveyed to a cool, dry place, as soon as possible. The sand or saw-dust may be dried in the heat of summer, or may be baked in an oven at the time required to be used. The peculiar advantages arising from packing apples in sand, are explained and commented upon as follows, by the late Mr. Webster, author of the "American Dictionary of the English Language." "1st, The sand keeps the apples from the air, which is essential to their preservations; 2d The sand checks the evaporation or perspiration of the apples, thus preserving in them their full flavor—at the same time any moisture yielded by the apples is absorbed by the sand—so that the apples are kept dry, and all mustiness is prevented. My pippins, in May and June, are as fresh as when first picked. Even the ends of the stems look as if just separated from the twigs; 3d, The sand is equally a preservative from frost, rats, &c. But after the extreme heat of June takes place, apples speedily lose their flavor, and become insipid."—*Am. Ag.*

GAULT'S PATENT CHURN.



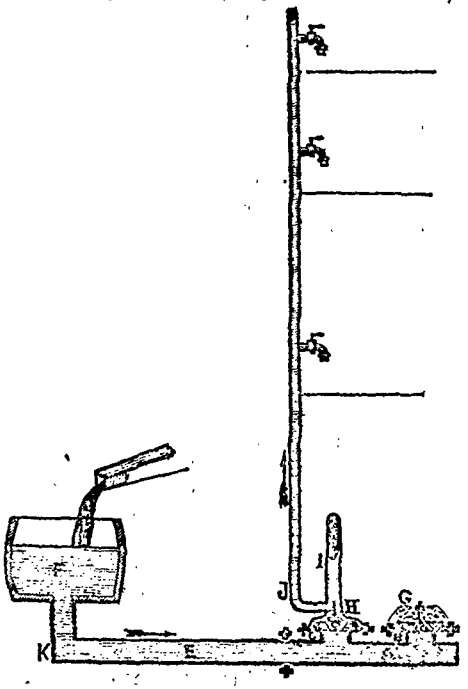
This implement has been in use for several years, and many persons consider it the most approved and convenient Churn now used. The particular advantages claimed for it over other patent churns, are—"the facility with which it can be worked, from its quick and powerful motion; the ease with which it can be cleaned; and that it is not liable to get out of order."—*Gen. Far.*

Lotion for Sore Legs—Copperas (green,) 6 drachms; alum, 4 drachms; verdigris (crystalized,) 1 drachm; sal ammoniac, 1 drachm; water, 7 quarts. Mix and dissolve.

Potato Rot, a Proposed Remedy.—We very much regret to hear that this destructive disease has again made its appearance, and, that in several parts of our State its ravages are quite alarming. A correspondent of the *Belfast Journal*, setting aside all sugestions, theories, and surmises on the subject, proposes the following remedy. His plan, to say the least, is simple and not altogether new, but he speaks with boldness and confidence backed up by his own experience, and seems to be somewhat acquainted with the subject. He says: "There is but one remedy—that is mow off the vines as soon as the potatoes have blossomed, or as soon as the potatoes have set, and are as big as pistol balls.—This is a cure or preventation of the plague.—nothing else will reach it. It is a disorder which can alone be secured by decapitation. All who have written on the subject, have mistaken the cause and the cure, and as Dr. Franklin would say, have come out at the little end of the horn? I tried the experiment last summer; it did well. There is no mistake, if the vines are cut off near the ground before the poison of the insect desends to the root of the potato, they are safe. It is a winged insect that does all the mischief. This is the fact, let philosophers humbug as they will about honey dew, fungus, mildew, dew rust, young seed, old seed, wet land, dry land, manures, new or old seed, hot weather, cold weather, too wet, too dry, &c, &c. All are wrong, and do not look to the way, or even squint, whence all the evil comes. Potatoes should be planted early in order to be forward enough to part with their tops by the 25th of July or the first day of August. The insect was ten or twelve days earlier last year than this, or it may not come at all, which I hope. Where I cut off the vines last summer on the 1st day of August, the potatoes were sound, perfectly good; and I am selling them for seed at one dollar per bushel. Those I cut off on the 18th day were injured some, say one-eighth lost."—*N. Y. Far. & Mech.*

To prevent Pumps and Water-pipes freezing in Winter.—Take up the valve or sucker, and let all the water out of the trunk or pipe.

SELF-ACTING MACHINE FOR RAISING WATER.



Our attention has been directed to an interesting article republished some time ago in the *Farmers' Cabinet*; and it has ellcited considerable attention from gentlemen who have a fall of water on their premises, and who would gladly avail themselves of a simple means for raising water to the top of their farm-houses, or to cisterns for supplying their barn-yards, or gardens, we feel that we shall gratify many of our readers by inserting a sketch of an experimental water-ram, made by one of our subscribers in this city, and which we examined with considerable interest. Its construction was so simple, that any of our readers may make one of these machines, and try further experiments at a trifling expense; while those who wish to have more perfect ones, can obtain all the requisite information relative to the outlay, by applying to Mr. J. Elgar, Balt., who has given his attention to the subject, and has made some important improvements. It will be necessary for applicants to state the perpendicular height the water falls, and the quantity which flows per minute; also the height and distance to which it is required to be raised—in order that we may be able to obtain the requisite information, and to furnish machines of Mr. Elgar's manufacture.

The experimental machine we examined, was made as the piece A, of cast-iron pipe, 2 inches in the bore, and about 2 feet long, having two flanch nozzles cast on it, B and C. One end of the pipe was closed, and the other open, with a flanch to connect it to about 35 feet of 2-inch cast or wrought iron pipe, E. The other end of the pipe, E, led to an open water cask, F, placed 7 feet above the water-ram, and this cask was supplied by a hose, at the rate of 8, gallons of water per minute. Of course the fall from the level of the water in this cask, is equal to a fall of 7 feet, with a stream giving 8 gallons a minute. To the flanch nozzle, B, was attached a brass spindle valve, G, inverting or opening into the nozzle. When this valve is held down, water can run through the seat of the valve, as shown in the sketch, but the tendency of water flowing rapidly through the pipe, E, and ram, A, would be to press the valve, G, against its seat, and close the opening; the water would then run out

through the nozzle, C, by on this nozzle, C, an upward or lifting brass pindle valve, H, was attached having a piece of 2 inch pipe, I, of about 2 feet high, covering it. This pipe, I, was closed at the top, but had a lateral branch pipe, J, of one inch bore inserted into it above and near the valve, H The pipe, J, formed the rising main through which the water to be raised had to ascend. The upper space in the pipe, I, acted as an air-chamber or air cushion. In large machines, a vacuum valve is inserted in the end of this air-chamber, to supply any deficiency of air, but in this experimental machine it was omitted.

The upright pipe, J, was 80 feet high, mersured from the ram, or 73 feet above the level of the water in the supply cask. It was furnished with 3 outlet cocks at various heights. The object of these cocks was merely to ascertain the difference in the volume of water, which would be thrown up by the ram at different heights.

The action of the machine, as detailed in Mr Latrobe,s letter, may appear complicated to our readers, but, with the help of the diagram, we think it can be easily understood.

Having filled the water cask, F, the water runs down the pipe, E, and by the time it reaches the valve, B, it has acquired a momentum, which closes the valve, and the only escape is by the valve, C. Through this valve it rushes up into the air-chamber, I, and into the pipe, J. The momentum having been expended, the valve, B, falls, and a quantity of the water rushes out, through the open valve. The water again acquires a fresh momentum, closes the valve, B, and part of it again forces open the valve, C, increasing the column in the pipe, J. The fall and closing of the valves is like a smart blow of a hammer, and they close and open with great precision. In the machine we saw, the strokes were 70 each minute, and plainly heard at the distance of 150 feet. In the course of two or three minutes, the pipe, J, became full, and ran over at the top On measuring the quantity of water which was thus thrown up in 312 minutes, 73 feet above the level in the water cask, it was found to be 4 gallons; and as during the 12 minutes, 96 gallons of water had passed from the water cask, into the ram, it appears, that it required 23 gallons of water to raise one gallon to 10½ times its own height.

The experiment was continued, and the same quantity of water, 4 gallons, was thrown up 66 feet high, in 11 minutes, 53 feet high in 7 minutes, and 42 feet high in 4 minutes. Thus, in the last trial, the machine required 28 gallons of water to throw up 4 gallons to 6 times the height of the fall. It would have been easy to have made the head of water 10, 20, or 30 feet high and a series of interesting experiments might be made, to ascertain experimentally the relative differences in the momentum of the water descending from a greater or less distance, the fall of 7 feet, however, was preferred, in order to give the machine the ability to throw up water to more than ten times the height of the fall, a difference which would not often occur. Whether a fall of 70 feet instead of 7 would have thrown up the same relative quantity of water 420 feet, is a question we confess we are not able to solve.

The pipe, E, it is found, must be 30 or 40 feet long, or the valve, G, will not work, almost all the water ran out of it, when the water cask was put directly over the ram. The valve made 50 strokes in a minute. It is not necessary to have the pipe E a perfectly straight one, but it may be bent to suit the inequalities of the ground, and may even be bent at right angles, as shown in the sketch at K.—*Am. Ag.*

THE HOUSEWIFE'S DEPARTMENT.

RECIPES FOR MAKING CAKES.

Composition Cake.—One pound of flour, one of sugar, half a pound of butter, seven eggs, half a pint of cream.

Tea Cake.—Three cups of sugar, three eggs, one cup of milk, two cups of flour, a small lump of pearl ash, and make it not quite as stiff as pound cake.

Loaf Cake.—Five pounds of flour, one of sugar, three-quarters of a pound of lard, and the same quantity of butter, one pint of yeast, eight eggs, one quart of milk; roll the sugar into the flour, and the raisins and spice after the first rising.

Soft Gingerbread.—Six tea cups of flour, three of molasses, one of cream, one of butter, one table spoonful of ginger, one glass of wine, and a nutmeg.

Jumbles.—Three pounds of flour, two of sugar, one of butter, eight eggs, with a little caraway seed, and a little milk, if the eggs are not sufficient.

Soft Cakes in little pans.—One and a half pounds of butter rubbed into two pounds of flour;

add one wine glass of wine, one of rose water, two of yeast, nutmeg, cinnamon, and currants.

Sponge Cake.—Five eggs, half a pound of sugar, and a quarter of a pound of flour.

Pound Cake.—Three eggs, nine spoonsful of butter, three of sugar, and three handsful of flour.

Shrewsbury Cake.—One pound of flour, three quarters of a pound of sugar, three quarters of a pound of butter, four eggs, and one nutmeg.

Clove Cake.—Three pounds of flour, one of butter, one of sugar, three eggs, two spoonsful of cloves—mix it with molasses.

Wonders.—Two pounds of flour, three quarters of a pound of sugar, half a pound of butter, nine eggs, a little mace and rose water.

Bread Pudding.—One pound of soft bread or biscuit, soaked in one quart of milk, run through a sieve or cullender, add seven eggs, three quarters of a pound of sugar, one quarter of a pound of butter, nutmeg, cinnamon, one gill of rose water, one pound of raisins, half a pint of milk; bake three quarters of an hour, middling hot oven. —*N. Y. Far. & Mech.*

To Pickle Red Cabbage —Choose two firm red cabbages, shred them very fine, first pulling off the outside leaves, mix with them nearly half a pound of salt, tie it up in a thin cloth, and let it hang for three hours, to drain, then put it in small jars, ; boil, in a quart of good vinegar, three bits of ginger, one pod of pepper, quarter of an ounce of cloves, one pod of garlic, and pour it over the cabbage boiling hot.

MECHANICS' NOTE BOOK.

Fire and Water-proof Cement.—To half a pint of milk, put an equal quantity of vinegar, in order to crudle it; then seperate the curd from the whey, and mix the whey with four or five eggs, beating the whole well together. When it is well mixed add. a little quicklime through a sieve, until it has acquired the consistence of thick paste. With this cement, broken vessels and cracks of all kinds may be mended. It dries quickly, and resists the action of water, as well as of a considerable degree of fire.

A Cement for stopping the Fissures of Iron Vessels—Take two ounces of muriate of ammonia, one ounce of flowers of sulphur, and sixteen ounces of cast-iron filings or turnings; mix them well in mortar, and keep the powder dry. When the cement is wanted, take one part of this and twenty parts of clean iron filings or turnings, grind them together in a mortar, mix them with water to a proper consistenec, and apply them between the joints.

The manner of soldering Ferrules for Tool-handles, &c.—Take your ferrule, lap round the joining a small piece of brass-wire, then just wet the ferrule, scatter on the joining-ground, borax, put it on the end of a wire, hold it in the fire till the brass fuses. It will fill up the joining, and from a perfect solder. It may afterwards be turned in the lathe.

Easy way of cleaning the Hands, for dyers, Colourers, &c.—Take a small quantity of pot-ash or pearl-ash in your hand, pour into it a small quantity of water, rub it well all over your hands with a little sand, then wash it off, take in your hand a small quantity of chemic, pour a little water into it, and rub it well on the hands in a semi-liquid state; wash the hands well in water, and they will be clean, If not perfectly clean, repeat the operation.

To Prevent Iron from Rusting.—Warm your iron till you cannot bear your hand on it without pain to yourself. Then rub it with new and clean white wax. Put it again to the fire till it has soaked in the wax. When done, rub it over with a piece of serge. This prevents the iron from rusting afterwards.—*N. Y. Far. & Mech.*

Preservation of Apples.—A correspondent of the *Maine Cultivator*, gives the following account of the most extraordinary preservation of apples we recollect to have seen. He says:—

"I sent you an apple which I bought in the fall of 1843, of my neighbor, Thomas Meirs. Among others, it was put into my cellar, it open casks and about the first of January, 1844, I overhauled them, and put three barrels away, packed in plaster of Paris—first a layer of plaster, then a layer of apples—and so alternately, till the barrels were filled —They were then headed up and stood till the early part of last summer, when I overhauled and assorted them, and put them in a box in layers of dry oak saw-dust. The box had a lock and key, and has been kept locked up, only when we got apples out to use. We continued using out of the box, till some time after early apples were ripe, and I supposed they were all used out, but on town-meeting day, the 11th of March, 1845, (it being stormy) I told my man to assort my apples, and fill that box again with saw-dust and apples. Upon unlocking the box and taking the saw-dust out, to our surprise there were three apples in the box, and all of them perfectly sound The apple I send you having kept in a warm room has commenced, as you perceive to rot. The above is submitted respectfully for the benefit of all lovers of good apples.

Soldering Metals.

To unite two peices of the same or different metals, by fusing some metallic substance upon them, is called *soldering*. It is a general rule, that the solder should be easier of fusion than the metal to be soldered by it. It is, in the next place, desirable, though seldom absolutely necessary, nor always attempted, that the solder and the metal to which it is intended to be applied, should be of the same color, and of the same degree of hardness and malleability.

Solders are distinguished into two different classes, viz., the hard and the soft solders. For the hard solders, which are ductile, and admit of being hammered, some of the same sort of metal as that to be soldered is, in the greatest number of instances, alloyed with some other which increases its fusibility. Some of the facts already detailed, respecting the metals prove that the addition made with this view need not always be itself easier of fusion.

The solder for platina is gold, and the expense of it will, therefore, contribute to hinder the general use of platina vessels, even in chemical experiments.

The hard solder for gold and silver; gold and copper; or gold, silver, and copper. Goldsmiths usually make four kinds, viz., solder of eight, in which, to seven parts of silver, there is one of brass or copper, solder of six, where only a sixth part is copper, solder of four, and solder of three. But many who may have occasion to solder gold cannot encumber themselves with these varieties.

For general purposes, therefore, the following composition may be provided; melt two parts of gold with one of silver and one of copper; stir the mass well to make it uniform, add a little borax in powder, and pour it out immediately. If cast into very thin narrow slips, it will be the more handy for subsequent use. To cleanse gold which has been soldered, heat it almost to ignition, let it cool, and then boil it in urine and sal ammoniac.

The hard solder for silver may be prepared by melting two parts of silver with one of brass. It must not be kept long in fusion, least the zinc of the brass fly off in fumes. If the silver to be soldered be alloyed with much copper, the proportion of brass may be increased for example the following composition may be used; four parts of silver and three of brass, rendered easily of fusion by a sixteenth part of zinc. Silver which has been soldered, may be cleaned by heating it and letting it cool, as directed for gold, but it must be boiled in alum water.

The hard solder for copper and brass is a soft fusible sort of granulated brass, known to artists by the name of speltre. It consists of brass mixed with an eighth, or a sixth or even one-half of zinc. The braziers use no other kind of hard solder. As speltre melts sooner then common brass it serves for the solder of the latter as well as for copper.

Standard silver makes excellent solder for brass. It is more fusible than spelire, proportionately easier to manage, and equally as durable. A slight demand for silver solder may, to many, be supplied at a cheap rate, in consequence of the number of the small silver articles in use, and which are frequently wearing out.

Iron may be soldered with copper, gold or silver. Brass or spelire is most commonly used, and the operation is then called brazing; but a carbonate of the some metal, viz, the dark gray or most fusible sort of pig iron, called No. 1, is the most durable solder that can be used. The pig iron loses some brittleness, and the malleable metal becomes harder in the proximity of the parts soldered.

The parts upon which hard solder is intended to operate, are touched with a finely powdered borax moistened with water. They must, also, as in all soldering and tinning operations, be perfectly clean: The borax quickly running into a kind of glass, promotes the fusion of the solder, and preserves from oxidation, the surfaces to which it is applied. The pieces intended to be soldered are fastened together with iron wire, or secured by some contrivance having the same effect. Spelire being composed of so many grains, is apt to spread when the borax boils up; but just as it becomes fused, the workmen bring it to the place where it is wanted, by a slender iron rod. The flame of a lamp directed by a blow-pipe against the solder covering the intended joint, which must be laid upon charcoal, is sufficient for small things For large work a common culinary fire may be made to effect the desired fusion, though a forge is still more convenient. The fire should not touch the work, nor the ashes be allowed to fall upon it.

The soft solder melt easily, but are partly brittle and therefore cannot be hammered. The solder

for lead is usually composed of two parts of lead and one of tin. Its goodness is tried by melting it, and pouring about the size of a crown-piece a table; little shining stars will arise upon it, if it is good. By diminishing the proportion of lead, we form what is called stray solder; we may also increase the proportion, which is advisable when we wish to solder vessels for containing acids; because lead is not so easily corroded or dissolved as tin.

The lining of tea-chests has been used for solder, as it sometimes comes mixed about the right proportion. These valuable portions of tea-lead may be distinguished by their brilliancy, having suffered little from oxidation; also, when they principally consist of tin, by the crackling noise while bending, which is peculiar to this metal, and some of the alloys into which it largely enters.

The solder for tin may consist of four parts of pewter, one of tin, and one of bismuth, or two parts of tin, and one of lead: the latter is a composition much used.

The soldering iron of the tin-plate workers is an ingot of copper, flattened at the point in a pentamidal form, it is screwed or riveted to an iron stem fastened to a wooden handle. The copper is seldom more than four or five inches long, and when it is worn away, the same stem and handle are used for another piece. The bar of copper is prepared for use, by filing it bright, and tinning it, when sufficiently hot, it will melt and take up the solder, so as to afford a ready means of applying it to the intended juncture Powdered rosin, and sometimes pitch, is used along with the soft solders, to preserve the metals employed from oxidation.

Tin-foil, applied between the joints of fine brass-work, first wetted with a solution of sal ammoniac, and held firmly together while heated, makes an excellent juncture, care being taken to avoid too much heat.—*N. Y. Far. & Mech.*

Wind Wheel.—On Friday last we visited a new and we think, highly valuable invention of Mr. A. Judd, of this village, called a "Centrific Wind-Wheel." For simplicity of construction and efficiency of action, it exceeds anything in the shape of a wind-mill that we have ever seen. The principles on which it is constructed are entirely new; and the inventor, in conjunction with Dr. J. B. Bridgman, who as joint proprietor, have obtained letters patent for the invention. The wheel resembles a common overshot or breast water-wheel, except its motion is horizontal; and is propelled by the application of wind upon the inner surface. By this application, the entire circumference of the wheel is kept constantly before the wind, the whole force of which is brought to bear square upon the lever, producing a power three or four times as great as any other wind-wheel in operation.—What adds greatly to the value of this wheel is the fact that it is enclosed in a building, and consequently entirely excluded from the weather. This together with the simplicity of its construction, must extend its durability almost beyond the power of calculation The building is covered with strips of boards, about a foot wide, hung upon pivots, and connected with rods on the inner side like common Venetian window-shutters, and can be opened and shut at pleasure. By this arrangement, any quantity of wind can be admitted and excluded; and the wheel is as easily managed in a gale of wind as in a breeze; and is as completely under the control of the operator, as any water-power. The building is two and a half stories high, the wheel being located in the upper half story. By opening the shutters to the windward, in the second story, and to the leeward, in the upper half story, the wheel is set in motion by the passage of the wind up through the centre of the wheel pressing upon the inner surface of the buckets. The wheel which the patentee has erected, is a temporary one, merely to exemplify the principles, fourteen feet in diameter, and seven feet high; and produces from one to five horse power according to the strength of the wind, and propels a grindstone, a circular saw, and he intends to add a pair of mill-stones for grinding provender. It operates admirably.

What constitutes the great value of this novel and highly ingenious invention, is the cheapness of its construction, and its consequent adaption to the almost infinite variety of objects for which power is required. It can be constructed of any size, to produce from one *dog power to a hundred horse power*, and from its simplicity and consequent ease of management, is brought within the reach of every farmer and mechanic By its aid the farmer may thresh his grain, saw his wood, draw water for his stock, cut his feed, grind his provender, churn his butter, grind his axes and scythes, &c. &c. &c. The mechanic, by its aid can propel his planing machines, his turning lathe, his trip hammer, his circular saw, grind his bark, split his leather, saw his shingles, grind his tools, slit out his stuff, saw out his felloes., &c., &c.

In fact, we can see no reason why it is not destined to become one of the most valuable inventions of this inventive age. And we sincerely hope and trust, that, the ingenious inventor and his enterprising partner, Dr. Bridgman, will receive that ample remuneration which is ever due, though not always awarded to genius and enterprise.—*Alb. Cult.*

A Good Bank.—We are not particularly in favour of banks as a general thing for certain reasons of our own, but we have somewhere read of a bank that we would vote for, the vault should be *mother earth*, secure and always profitable, the exchanges the *transplanting of the nursery and garden*, always natural and therefore equal in value. The deposits should be *happiness, sobriety and noble independence*, a reliable source of investment; the assents would be *smiling fields waving with golden harvests* to gladden the beholders' hearts, the liabilities would be unavoidable yet agreeable *indebtedness to God alone*, while dividends would be *health, wealth and honest joy*. There is a bank worth sustaining and one that may have a million of branches and still the business would never be overdone.—*Far. Mech.*

Cooking Cranberries.— To each quart of berries very shortly after the cooking of them is commenced, add a tea-spoonful of salaratus. This will so much neutralize the acidiferous juice, which they contain, as to make it necessary to use only *one fourth part* as much sugar as would have been required had they been cooked without using salaratus.—*Mich Far.*

Improvement in Leather.—The durability which tanning gives to leather, without destroying its elasticity, is an illustration of the adaptation of our substance to enchance the value of another. The immense consumption of leather, and the great difficulty in augmenting its quantity, renders any improvement in quality of no ordinary importance. Various efforts have been made to lessen the time, labor, and expense of tanning leather. They have been successful in a degree; but I am not aware that any very decided improvements have been made in giving to the leather any greater durability. A gentleman of German birth, who has had much experience as a practical dyer, has been for three or four years past experimenting on leather. He extracts the tannin with greater facility, and in greater quantity by the aid of a moderate portion of alkali. The liquid tannin afterwards undergoes a fermentation, when it becomes ready for the immersion of the hides. The time required for the thickest hides is thirty days, but by the aid of Lander's air pump, the time is reduced to three, four, or five days. Some have spent much money in attempting to exhaust the air after the hides have been immersed in the liquid. In this way but very little effect is produced. If, however, the air is first exhausted, and the tanning liquid then let in upon the hides, it will readily enter the pores of the leather, from which the air has been extracted. Mr. G. the inventor of this process, considers that tannin, in the ordinary method, crystillizes in the pores, and thus lessens the elasticity of the leather, and cuts the fibres under the hammer of the shoemaker, and under the pressure of the wearer. Fermentation destroys the tendenby to crystalise, and gives a much increased affinity for the leather. Mr. G. estimates the leather made by this proces to be 20 to 50 per cent. superior to any other. S. F.

How to make Soap—First, set your tub as usual with sticks and straw, and then put your lime (slaked) on the straw, to the depth of 3 or 4 inches—then take a long stick that will come a few inches above the top of the tub—wind a hay rope around the stick, nearly its whole length—let the stick go through the tub two or three inches, then you can draw your lye without putting your hands into it underneath. Put your grease into the kettle, and turn in about two quarts (or enough to cover the bottom of the kettle) of your strongest lye. Boil a few minutes, and then turn in a little more lye, and continue to pour in as the lye boils over, until your kettle is about two-thirds or three-fourths full, when you can fill up the kettle, and after skimming the contents well, dip out and empty it in the barrel. Put in two pounds of rosin to one barrel of soap If your lye is of sufficient strength, you will be sure to have good soap. I have heard people complain a great deal that they did not have good luck in making soap; but if the above directions are carefully followed, I can assure them that they will have no reason to complain of poor luck, or anything of the kind.—*Maine Cult.*

A Durable and Cheap Cement.—Take two parts of fine and clean ashes, three parts of pure clay, and one part of sand; mix all well together; then add linseed oil, and have all intimately mixed to the consistence of thin mortar. This, if well applied will resist the inclemency of the weather and will be found useful to stop the leaks round chimneys, and leaks in gutters on roofs of houses, and where buildings join together. S. L. —*Pra. Far.*

Preparation of Tomatos.

We condense the following modes of cooking and preserving the tomato from the *Ohio Cultivator*, which appear to us to be worthy of the attention of housewives and cooks.

To make Tomato Omelet.—Take a stew-pan and melt a piece of butter the size of a nutmeg. Mince up an onion very fine, and fry it until quite brown. Add ten peeled tomatos, season with pepper and salt, and stir them until cooked to a soft pulp. Then stir in four beaten eggs, until the underside of the mass becomes brown. Lay a plate on top, turn the pan upside down, and the dish is ready for the table.

Tomato Marmalade.—Gather full-grown tomatos while quite green. Take out the stems and stew them until soft, then rub them through a sieve, put the pulp over the fire, season highly with pepper, salt, and powdered cloves, and let it stew until quite thick. The article will keep well, and is excellent for seasoning gravies.

French Mode of Cooking Tomatos.—Cut ten or a dozen tomatos into quarters, and put them into a sauce-pan with four sliced onions, a little parsley, thyme, one clove, and a quarter of a pound of butter. Set the pan over the fire, stir the mixture occasionally for three-fourths of an hour, and then strain it through a coarse sieve or colandar. It may be served with mutton-chops or a beef-steak.

Tomato Preserve.—Take good ripe tomatos, peel and boil them, and preserve them with good brown or loaf sugar, or with molasses. If not peeled they burst, and do not so well retain their consistency.

Tomato Catsup.—One gallon skinned tomatos, 4 tablespoons of salt, 4 do black pepper, 2 do allspice, 8 do mustard seed, 8 pods red pepper. These articles to be bruised fine and simmered slowly in a pint of vinegar three hours, then strained through a hair sieve. To be stewed down to a half-a-gallon of catsup.

Succotash.

Succotash in Winter.—Take, when green, your corn either on the cob or carefully shelled, and your beans in the pod, dip them in boiling water, and carefully dry them in the shade where there is a free circulation of air. Pack them up in a box or bag, in which they should be kept in a dry place; and succotash may be made from them as well in winter as in summer.

How to make Succotash.—To about half a pound of salt pork add three quarts of cold water, and set it to boil. Now cut off three quarts of green corn from the cobs, set the corn aside, and put *the cobs* to boil with the pork, as they will add much to to the richness of the mixture. When the pork has boiled, say half an hour, remove the cobs and put in one quart of freshly-gathered, green, shelled beans; boil again for fifteen minutes; then add the three quarts of corn and let it boil another fifteen minutes. Now, turn the whole out into a dish, add five or six large spoonsful of butter, season it with pepper to your taste, and with salt, also, if the salt of the pork has not proved sufficient. If the liquor has boiled away, it will be necessary to add a little more to it before taking it away from the fire, as this is an essential part of the affair.—*West. Farmer and Gardener.*

Manufacture of Glass.—A correspondent of the Christian Mirror gives the following account of of the manufacture of tumblers:

As the manufacture of the pressed glass tumblers may not have been witnessed by many of your readers, I will describe it in a few words. In the first place, they have a brass mould, consisting of a solid mass, about as large over as a half-peck measure, containing a hollow in it, exactly in the form of the tumbler to be made, with a follower of brass, of the same form, but so much smaller as to fit the inside of the tumbler. When the two parts of the mould are put together, the space between them is the exact thickness of the vessel required.

In the process of manufacturing, three men and two boys are required. The first thing done, is for one of the men to dip an iron rod in the melting glass, and move it about till he has a sufficien quantity of the fluid mass on the end of his rod; he then holds it over the hollow of the mould, and with a pair of shears, cuts of what he judges to be just enough to constitute the tumbler. Instantly the other man brings down the follower with level power, and the melted glass is so compressed, as to fill the cavity of the mould. He then turns his mould bottom up, with a little blow, and the tumbler drops red hot upon a stone table. One of the boys, with an iron rod having a little melted glass on its end, pressed it on the bottom of the tumbler, and it slightly adheres. He then holds it in the mouth of a glowing furnace, turning it rapidly, till it is almost in a melting state, when the third man takes it, and whirling the rod and tumbler on a sort of arm of a chair, he holds a smooth iron tool against the edge of the tumbler till all the roughness is removed from its edges, when a boy takes the rod from him, and by a slight stroke to the end of it, drops the tumbler and places it in a hot oven, to cool gradually. These five hands will make a beautiful tumbler in about 40 seconds, or about 100 in an hour.

Silver and Lead.

A very considerable item of the mineral wealth of the West, consists in the silver which is found to exist in lead. The mines of Dubuque and vicinity are understood to be particularly rich in this respect, some specimens furnishing as much as one hundred ounces of silver to the ton of lead, though it is estimated that five ounces to the ton will pay for the process of separating it.

The process of separation, as followed at the upper mines, we learn, is as follows:—A number of cast iron vessels, capable of holding five or six tons of lead each, are prepared. In these the metal is melted and suffered to cool slowly, being stirred constantly with an iron rod. As the liquid cools, a partical chrystalization takes place; this contains a large proportion of silver, and falls to the bottom; it is removed by means of perforated ladles, and subjected again to a similar process in other vessels, while the residue in the first set of vessels continues to be heated and stirred till it ceases to chrystalize. Finally, the richest parts separated by this process are placed in what is called a cupel. This is a shallow vessel, made of bone ashes, and very porous. The metal is subjected to a high degree of temperature, and then a stream of cold air from a bellows passed over it. Oxidation of the remaining portion of lead takes place, in the form of litharge, and the pure silver falls to the bottom. The litharage is valuable in commerce, and the lead which failed to chrystalize by the first process, is run into pigs, and is just as useful for ordinary purposes as though the separation had not been made.

At some of the manufactories the iron pots are entirely dispensed with. This is when it is intended that the entire portion of the lead shall be turned into litharge. A large earthen receiver is formed, under which is a furnace. Above the receiver is an arched covering, communicating with a bellows, and an aperture for the free egress of air. The mass of lead in the receiver is now kept at the melting point, while a current of air continually passes over it, faciliating the process of oxidation. As the oxide of lead, litharge—or what is commonly known as dross—is formed an aperture in the side of the receiver is cut below the level of the melted liquid, and the oxide thus escapes. This continued until the process of oxidation ceases, and nothing but the pure silver is left. Eventually the oxide of lead is either prepared for commerce as litharge or reconverted into a metallic state.—*St. Louis Republican.*

Age of Cattle by their Teeth.

A subscriber asks, can you give me any information concerning the telling the age of cattle by their teeth?—say yearlings, two-years olds, and from six months and upwards.

A calf at birth, in respect to its teeth, presents no uniform appearance? the state of these organs as in other animals, depending upon the maturity it has obtained.—Sometimes there will be no teeth? but usually it will have two incisors on the front of the lower-jaw. About the middle of the second week a tooth will be added on each side, making four; at the end of the third week there will be six, and in a month eight; which is the full complement of its temporary incisor teeth. At the end of the fourth month the two front ones will begin slowly to wear down on the edges, and to diminish in size, and assume a triangular shape till the end of the eighth month; these two will scarcely be one half the size of the others, which will be sensibly lessened. The dimunition now extends to the four central teeth, which at eleven months will be plainly separated from each other. At fifteen months the same will be true of the six central ones, at eighteen months the whole eight will be so diminished that it would seem difficult for him to procure his food.

The process of diminution is now a little retarded and continued to the two central teeth, which waste away to the size of crow quills.

At the age of two years two plump permanent teeth have come up in front, while the other six milk teeth remain.

A little before the commencement of the third year, the second pair of incisors will disappear, and in their place will come up two permanent teeth, the four outside milk teeth still remaining. These latter will now diminish very fast, but will not give way. At the age of four years there will be six permanent teeth, and appareutly no milk teeth but if the mouth is examined the tooth that should have disappeared, and milk tooth that is to remain, will be found huddled together behind the six permanent ones. At the commencement of the fifth year the eight permanent incisors will be up, but the outside one will be small. When the animal is six years old it will be full mouthed, that is, the incisors will be fully grown.—*Prov. Far.*

GRAND PROVINCIAL EXHIBITION

OF

AGRICULTURAL, MANUFACTURING, AND HORTICULTURAL PRODUCTS, THE FINE ARTS, &c.

To be held at Caer Howell Grounds, Toronto, on Wednesday, 21st Oct., 1846.

LIST OF THE PREMIUMS TO BE AWARDED.

CLASS A—*Horned Cattle.—Durhams.*

1st	Best aged Bull	-	-	£7 10
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	
1st	best Bull calved since the 1st Jan. 1845			5 0
2d	do	do	*Youitt on Cattle.*	
3d	do	do	*Diploma.*	
1st	best Cow, milk or in calf	-	-	5 0
2d	do	do	*Skinner's Farmers' Library.*	
3d	do	do	*Diploma.*	
1st	best three years' old Heifer in calf	-		4 0
2d	do	do	1st & 2d vol. on *Brit. Husb.*	
3d	do	do	*Diploma.*	
1st	best Bull Calf not exceeding 1 year old			2 0
2d	do	do	*Compendium of Cattle Med.*	
3d	do	do	*Diploma.*	
1st	best Yearling Heifer	-	-	2 0
2d	do	do	3 vols. *American Ag.*	
2d	do	do	*Diploma.*	
1st	best Fat Bullock	-	-	2 10
2d	do	do	3 vols. *Albany Cultivator.*	
3d	do	do	*Diploma.*	

CLASS B—*Herefords, Devons, and other Improved Breeds.*

1st	best aged Bull	-	-	7 10
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	
1st	best Cow, in milk or in calf	-	-	5 0
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	
1st	best Yearling Heifer	-	-	2 0
2d	do	do	3 vols. *Albany Cultivator.*	
3d	do	do	*Diploma.*	
1st	best Bull calved since 1st Jan., 1845,		-	2 0
2d	do	do	3 vols. *American Ag.*	
3d	do	do	*Diploma.*	
1st	best Fat Bullock	-	-	2 10
2d	do	do	*Howitt's Rural Life of Eng.*	
3d	do	do	*Diploma.*	

CLASS C—*Horses.*

1st	best Stallion for Agricultural purposes		-	10 0
2d	do	do	*Loudon's Encyclopedia.*	
3d	do	do	*Diploma.*	
1st	best 3 years old Stallion for Ag. pur.		-	5 0
2d	do	do	*Coleman's Eur. Ag. Jour.*	
3d	do	do	*Diploma.*	
1st	best 2 years old Stallion for Ag. pur.		-	3 0
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	
1st	best Mare and Foal	-	-	5 0
2d	do	do	*Farmers' Library.*	
3d	do	do	*Diploma.*	
1st	best Thorough-bred Stallion	-	-	5 0
2d	do	do	*Howitt's Rural Life of Eng.*	
3d	do	do	*Diploma.*	

CLASS D—*Sheep.—Leicester.*

1st	best aged Ram	-	-	5 0
2d	do	do	Complete set *American Ag.*	
3d	do	do	*Diploma.*	
1	best Pen of three Shear Ewes	-	-	5 0
2d	do	do	Complete set *Albany Cult.*	
3d	do	do	*Diploma.*	

South Downs.

1st	best aged Ram	-	-	5 0
2d	do	do	*Coleman's Ag. Journal.*	
3d	do	do	*Diploma.*	
1st	best Pen of three aged Ewes	-	-	5 0
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	

Merinos or Saxons.

1st	best aged Ram	-	-	5 0
2d	do	do	*Farmers' Library.*	
3d	do	do	*Diploma.*	
1st	best Pen of three aged Ewes	-	-	5 0
2d	do	do	*Fessenden's Work on Am. Ag.*	
2d	do	do	*Diploma.*	
1st	best three Fat Wethers	-	-	3 0
2d	do	do	*Howitt's Rural Life of Eng.*	
2d	do	do	*Diploma.*	

CLASS E—*Pigs.*

1st	best Boar	-	-	5 0
2d	do	do	*Robinson's Designs for Farm Buil.*	
3d	do	do	*Diploma.*	
1st	best breeding Sow	-	-	5 0
2d	do	do	*Farmers' Encyclopedia.*	
3d	do	do	*Diploma.*	

CLASS F—*Agricultural Implements.*

1st	best Plough	-	-	2 10
2d	do	do	1st & 2d vol. on *Brit. Husb.*	
3d	do	do	*Diploma.*	
1st	best Subsoil Plough	-	-	2 10
2d	do	do	*Farmers' Library.*	
3d	do	do	*Diploma.*	
1st	best pair of Harrows	-	-	2 0
2d	do	do	3 vols. *Albany Cultivator.*	
3d	do	do	*Diploma*	
1st	best Fanning Mill	-	-	2 10
2d	do	do	Complete set *Ame. Ag.*	
3d	do	do	*Diploma.*	

Agricultural Implements—(continued.)

1st best horse-power Thresher & Sepa'r, £5 0
2nd do do Lindley's Guide to the Orchard, &c.
3rd do do Diploma
1st best Drill-barrow - - 2 10
2nd do do Coleman's Ag. Tour
3rd do do Diploma
1st best Scarifier - - - 2 0
2nd do do 2 vols Far. & Mech.
3rd do do Diploma
1st bnst Straw-cutter, - - 2 10
2nd do do Thomson's Ele. of Botany
3rd do do Diploma
1st best Hay-rack for Waggon - 1 0
2nd do do Farmer and Mechanic
3rd do do Diploma
1st best Corn and Cob-crusher - 1 5
2nd do do Ele. of Chemical Analysis
3rd do do Diploma
1st best Clover-dressing Machine - 2 10
2nd do do Coleman's Ag. Journal
3rd do do Diploma
1st best Hemp and Flax Dressing Machine
2nd do do Farmer's Library
3rd do do Diploma
1st best Horse-cart - - 1 10
2nd do do 2 vols Farmer & Mechanic
3rd do do Diploma
1st best 2-horse Waggon - - 2 10
2nd do do Farmers' Encyclopœdia
3rd do do Diploma
1st best Horse-rake - - 0 15
2nd do do Farmer's Treasure
3rd do do Diploma
1st best Roller - - - 1 10
2nd do do 2 vols Far. & Mechanic
3rd do do Diploma
1st best Reaping Machine - - 7 10
2nd do do Ure's Dict. of Arts
3rd do do Diploma
1st best Stump Extractor - - 2 10
2nd do do Farmers' Library
3rd do do Diploma
1st best Mowing Machine - - 5 0
2nd do do Treatise on Cattle
3rd do do Diploma
1st best Potato Picking Machine - 2 0
2nd do do Downing's Land. Gard'g
3rd do do Diploma
1st best Farm Gate - - 1 6
2nd do do Far. & Mechanic
3rd do do Diploma
1st best model of Farm Fence - - 0 15
2nd do do Gardner's Farmer's Dict.
3rd do do Diploma
1st best Cultivator - - - 1 10
2nd do do Complete Farmer
3rd do do Diploma

CLASS G—*Domestic Manufactures.*

1st best half-dozen Hand Rakes - 0 10
2nd do do Flower Garden Directory
3rd do do Diploma

Domestic Manufactures—(continued.)

1st best half-dozen Narrow Axes - £0 10
2nd do do Johnson's Ag. Chemistry
3rd do do Diploma
1st best half-dozen Manure Forks - 0 10
2nd do do Parnell's Ap. Chemistry
3rd do do Diploma
1st best half dozen Hay Forks - 0 10
2nd do do 1 vol Am. Agriculturist
3rd do do Diploma
1st best half dozen Scythe Snaiths - 0 10
2nd do do 1 vol Albany Cultivator
3rd do do Diploma
1st best Grain Cradle - - 0 10
2nd do do Am. Far. & Mechanic
3rd do do Diploma
1st best half dozen Grain Shovels - 0 10
2nd do do Com. Far. and Rural Eco.
3rd do do Diploma
1st best one horse Pleasure Waggon 2 0
2nd do do Downing's L'dscape Gard.
3rd do do Diploma
1st best two horse Pleasure Waggon 2 10
2nd do do Am. Turf Register
3rd do do Diploma
1st best set of Farm Harness - 1 10
2nd do do Youitt on the Horse
3rd do do Diploma
1st best set of Pleasure Harness - 1 10
2nd do do Rural Ecoonomy
3rd do do Diploma
1st best Travelling Trunk - - 1 0
2nd do do Gard'g on Philsophie Prin.
3rd do do Diploma
1st best side of Sole Leather - 0 15
2nd do do Gray's Botanical Text Book
3rd do do Diploma
1st best side of Upper Leather - 0 15
2nd do do Clater's Cattle Doctor
3rd do do Diploma
1st best side of Calfskin - - 0 15
2nd do do Gray's Bot. Text Book
3rd do do Diploma
1st best side of Skirting - - 0 15
2nd do do Clater's Cattle Doctor
3rd do do Diploma
1st best four or six Pannelled Door - 0 15
2nd do do Far. & Mechanic
3rd do do Diploma
1st best Window Sash, not less than 12 lights 10
2nd do do The Am. Orchardist
3rd do do Diploma
1st best Fur Hat - - - 0 10
2nd do do Fruit Culturist
3rd do do Diploma
1st best Fur Cap, - - - 0 10
2nd do do Bousingault's Org. Nature
3rd do do Diploma
1st best Fur Robe - - - 1 0
2nd do do Buist on the Rose
3rd do do Diploma
1st best 3 specimen Shoemaker's Work 1 0
2nd do do Downing's Cot Residence
3rd do do Diploma.

Class H—*Woollen and Flaxen Goods.*

1st best piece of not less than 12 yds. of Woollen Carpeting	£0	15	
2nd do do New England Fruit Book			
3rd do do Diploma			
1st best piece Oil Cloth Carpeting, of not less than 12 yards	0	15	
2nd do do Young Gard'n's Assistant			
3rd do do Diploma			
1st best pair Woolleen Blankets -	0	10	
2nd do do Gardening for Ladies			
3rd do do Diploma			
1st best piece Flannel, not less than 12 yds	0	10	
2nd do do Farmer & Mechanic			
3rd do do Diploma			
1st best piece Winter Tweed, not less than 12 yards -	0	10	
2nd do do Lang's Highland Cottages			
3rd do do Diploma			
1st best piece Woollen Cloth, fulled and fin.	2	10	
2nd do do Landscape Gardening			
3rd do do Diploma			
1st best piece Linen Goods, not less than 12 yards -	0	15	
2nd do do Gardner's Far. Dictionary			
3rd do do Diploma			
1st best 3 samples Flax or Hemp Cordage	1	0	
2nd do do Johnson's Ag. Chemistry			
3rd do do Diploma			
1st best 40 lbs. Hemp - -	1	0	
2nd do do Stock Raiser's Manual			
3rd do do Diploma			
1st best 40 lbs Flax - -	1	0	
2nd do do Treatise on Cattln			
3rd do do Diploma			

Class I—*Dairy Products and Sugar.*

1st best Cheese, not less than 20 lbs	1	10	
2nd do do Treatise on Cattle			
3rd do do Diploma			
1st best Putter, not less than 20 lbs -	1	10	
2nd do do American Herd Book			
3rd do do Diploma			
1st best Maple Sugar, not less than 20 lbs.	1	10	
2nd do do Rural Economy			
3rd do do Diploma			
1st best Beet Sugar, not less than 10 lbs	1	10	
2nd do do Johnson's Ag. Chemistry			
3rd do do Diploma			
1st best Corn Stalk Sugar, not less than 20 lbs - -	1	10	
2nd do do Veg, Kingdom of Plants			
3rd do do Diploma			
1st best Sugar, manufactured by the Aborigines of Canada	1	10	
2nd do do Gardner's Farmer's Dict			
3rd do do Diploma			

Class J—*Cabinet Ware.*

1st best Centre Table - -	1	0	
2nd do do Parnell's Chemistry			
3rd do do Diploma			
1st best Dining Table - -	0	15	
2nd do do Nat. Hist. of the Bee			
3rd do do Diploma			

Cabinet Ware—(continued).

1st best Easy Chair - -	£0	10	
2nd do do Downing's Frt. & For. Trees			
3rd do do Diploma			
1st best Sofa - - -	1	10	
2nd do do Vegetable Kingdom			
3rd do do Diploma			
1st best Dining-room Chairs -	0	10	
2nd do do Gardening for Ladies			
4rd do do Diploma			
1st best Drawing-room Chairs -	0	10	
2nd do do Gardening on Phil. Prin.			
3rd do do Diploma			
1st best Screws - - -	0	10	
2nd do do Townley on the H. Bee			
3rd do do Diploma			
1st best Ottoman - - -	12s	6d	
2nd do do Flower Garden Directory			
3rd do do Diploma			
1st best Work-box - -	10s	0d	
2nd do do Gard. for Ladies			
3rd do do Diploma			
1st best Dressing-case - -	7s	6d	
2nd do do Cream of Scientific Knowl.			
3rd do do Diploma			
1st best Writing Desk - -	7s	6d	
2nd do do Boswell's Poultry Yard			
3rd do do Diploma			

Class K—*Horticultural Products.*

1st best and greatest number of choice variety of Apples - -	1	0	
2nd do do Bridgeman's Gard. Asst.			
3rd do do Diploma			
1st best 12 Table Apples - -	0	15	
2nd do do Downing's Fruit & For. Trees			
3rd do do Diploma			
1st best 12 Winter Apples - -	0	15	
2nd do do Vegetable Kingdom			
3rd do do Diploma			
1st best and greatest variety of Pears	1	0	
2nd do do Transac. Am. Institute			
3rd do do Diploma			
1st best 12 Table Pears - -	0	15	
2nd do do Gardener's Assistant			
3rd do do Diploma			
1st best 12 Winter Pears - -	0	15	
2nd do do 1 vol Albany Cultivator			
3rd do do Diploma			
1st best Assortment of Culinary Vegetables			
2nd do do Gardening for Ladies			
3rd do do Diploma			
1st best and greatest variety of Vegetable Roots -	1	0	
2nd do do Gray's Botan. Text Book			
3rd do do Diploma			
1st best 6 heads Broccoli - -	0	10	
2nd do do 1 vol Am. Agriculturist			
3rd do do Diploma			
1st best 6 heads of Cauliflower -	0	10	
2nd do do 1 vol Alb. Cultivator			
3rd do do Diploma			
1st best 12 heads Drumhead Cabbage			
2nd do do 1 vol Genesee Farmer			
3rd do do Diploma			

Horticultural Products—(continued.)

1st best twelve heads of Savoy Cabbage - £0 10
2d do do *New England Fruit Book*
3d do do *Diploma*
1st best twelve Carrots for table - - 0 5
2d do do *Fruit Culturist*
3d do do *Diploma*
1st twelve roots of white solid Celery - 0 5
2d do do *Kitchen Gardener*
3d do do *Diploma*
1st best twelve roots of red Celery - 0 5
2d do do *Kitchen Gardener*
3d no do *Diploma*
1st best six Egg Plants - - - 0 5
2d do do *Cream of Scientific Knowl.*
3d do do *Diploma*
1st best peck of Blood Beets - - 0 5
2d do do *Fruit Cultivators' Manual*
3d do do *Diploma*
1st best peck of white Onions - - 0 5
2d do do *Kitchen Gardener*
3d do do *Diploma*
1st best peck of yellow Onions - - 0 5
2d do do *The American Orchardist*
3d do do *Diploma*
1st best peck of red Onions - - 0 5
1d do do *Florists' Guide*
3d do do *Diploma*
1st best twelve roots of Salsify - - 0 5
2d do do *The American Orchardist*
3d do do *Diploma*
1st best peck of white Turnips - - 0 5
2d do do *American Gardener*
3d do do *Diploma*
1st best peck of white Beans - - 0 5
2d do do *American Gardener*
3d do do *Diploma*
1st best collection of Green-house Plants - 1 0
2d do do *Gardening upon Phil. Prin.*
3d do do *Diploma*

Class L—*Seeds and Roots.*

1st best 2 bushels Winter Wheat - - 0 10
2d do do *Parnell's Chemistry*
3d do do *Diploma*
1st best 2 bushels Spring Wheat - - 0 10
2d do do *Johnson's Ag. Chemistry*
3d do do *Diploma*
1st best 2 bushels Barley - - - 0 5
2d do do *Townley on the Honey Bee*
3d do do *Diploma*
1st best 2 bushels Oats - - - 0 5
2d do do *Dana's Muck Manual*
3d do do *Diploma*
1st best 2 bushels Peas - - - 0 5
2d do do *Fruit Culturist*
3d do do *Diploma*
1st best 2 bushels Indian Corn in the ear - 0 0
2d do do *New England Fruit Book*
3d do do *Diploma*
1st best ½ bushel Clover Seed - - 0 10
2d do do *Canadian Ag. Reader*
3d do do *Diploma*
1st best 1 bushel Timothy Seed - - 0 5
2d do do *Canadian Ag. Reader*
3d do do *Diploma*

Seeds and Roots—(continued.)

1st best 1 bushel Canary Seed - - £0 5
2d do do *Fruit Culturist*
3d do do *Diploma*
1st best 1 bushel Hemp seed - - 0
2d do do *Farmers' Instructor*
3d do do *Diploma*
1st best 1 bushel Flax seed - - 0 5
2d do do *American Gardener*
3d do do *Diploma*
1st best Swedish Turnip seed not less 10 lbs. 0 5
2d do do *Fruit Culturist*
3d do do *Diploma*
1st best bag of Hops - - - 2 10
2d do do *Fruit Culturist*
3d do do *Diploma*
1st best 2 bushels Potatoes - - 0 10
2d do do *Farmers' Instructor*
3d do do Diploma
1st best 2 bushels Swedish Turnips - 0 10
2d do do *Canadian Ag. Reader*
3d do do Diploma
1st best 1 bushel Carrots - - - 0 5
2d do do *Nat. His. of the Honey Bee*
3d do do Diploma
1st best 1 bushel Sugar beets - - 0 5
2d do do *Complete Farmer & Florist*
3d do do Diploma
1st best 1 bushel Parsnips - - 0 5
2d do do *American Gardener*
3d do do Diploma
1st best half-dozen Pumpkins - - 0 5
2d do do *American Poulterers' Book*
3d do do Diploma
1st best half-dozen Squash - - 0 5
2d do do *Clater's Cattle Doctor*
3d do do Diploma

Class M—*Iron and Hollow-ware.*

1st best Cooking Stove with furniture - 0 15
2d do do *Johnson's Ag. Chemistry*
3d do do Diploma
1st best Parlour Stove - - - 0 10
2d do do *American Poulterers' Comp.*
3d do do Diploma
1st best Hall Stove - - - 0 10
2d do do *Canadian Ag. Reader*
3d do do Diploma
1st best Balance Scales - - - 0 10
2d do do *N. Y. Farmer & Mechanic*
3d do do Diploma
1st best pair cast Andirons - - 0 5
2d do do *Bousingault's Organic Nat.*
3d do do Diploma
1st best Door Scraper - - - 0 5
2d do do *New England Fruit Book*
3d do do Diploma
1st best Model of Hot-air Apparatus - 0 15
2d do do *N. Y. Farmer & Mechanic*
3d do do Diploma
1st best Steaming Apparatus for feed'g Stock 0 15
2d do do *Gray's Botanical Text Book*
3d do do Diploma
1st best set of Coopers' Tools - - 0 15
2d do do *N. Y. Farmer & Mechanic*
3d do do Diploma

Iron and Hollow-ware (continued.)

1st best set of Bench Planes			£0	15
2d	do	do	*Gardner's Farmers' Dic.*	
3d	do	do	Diploma	
1st best half-doze	Corn Brooms		0	5
2d	do	do	*Fruit Culturist*	
3d	do	do	Diploma	
1st best specimen of Willow-ware			0	10
2d	do	do	*N.Y. Farmer & Mechanic*	
3d	do	do	Diploma	
1st best Wooden Pail			0	5
2d	do	do	*New England Fruit Book*	
3d	do	do	Diploma	
1st best Wash-tub			0	5
2d	do	do	*Dana's Farmers' Manual*	
3d	do.	do	Diploma	
1st best Washing-machine			0	5
2d	do	do	*Fruit Culturist*	
3d	do	do	Diploma	
1st best Pair of Hames			0	5
2d	do	do	*American Poultry Book*	
3d	do	do	Diploma	
1st best Saddle-tree			0	0
2d	do	do	*Farmers' Mine*	
3d	do	do	Diploma	
1st best Weavers' reeds			5	0
2d	do	do	*Florists' Guide*	
3d	do	do	Diploma	
1st best Board Rule			0	0
2d	do	do	*The Farmers' Mine*	
3d	do	do	Diploma	
1st best Saw-frame			0	5
2d	do	do	Nat. His. of the Honey Bee	
3d	do	do	Diploma	
1st best Spinning wheel			0	5
2d	do	do	*Practical Receipt Book*	
3d	do	do	Diploma	
1st best half-dozen Axe-handles				
2d	do	do	*Treatise on Milch Cows*	
3d	do	do	Diploma	
1st best Churn			0	10
2d	do	do	*Canadian Ag. Reader*	
3d	do	do	Diploma	
1st best Augers from ½ inch to 2 inch			0	15
2d	do	do	*N.Y. Farmer & Mechanic*	
3d	do	do	Diploma	
1st best specimen 20 lbs. cut nails			0	15
2d	do	do	*The Canadian Ag. Reader*	
3d	do	do	Diploma	
1st best Blacksmiths' Bellows			0	15
2d	do	do	*N.Y. Farmer & Mechanic*	
3d	do	do	Diploma	
1st best Smut Machine			1	0
2d	do	do	*Lang's Highland Cottages*	
3d	do	do	Diploma	
1st best Model of Bee-hive			7s.6d.	
2d	do	do	*Nat. His. of the Honey Bee*	
3d	do	do	Diploma	
1st best Fowling Piece			0	10
2d	do	do	*N.Y. Farmer & Mechanic*	
3d	do	do	Diploma	
1st best Rifle			0	10
2d	do	do	*Genesee Farmer*	
3d	do	do	Diploma	

Class N—*Ladies' Department—Useful and Ornamental.*

1st best pair of Woollen Socks			£0	5
2d	do	do	*Every Lady her own Gard'er.*	
3d	do	do	Diploma	
1st best pair of Woollen Stockings			0	5
2d	do	do	*Fruit Culturist*	
3d	do	do	Diploma	
1st best pair of Woollen Mittens			0	5
2d	do	do	*New England Fruit Book*	
3d	do	do	Diploma	
1st best Straw Hat manf. from straw of Can.			0	5
2d	do	do	*Florists' Guide*	
3d	do	do	Diploma	
1st best speci. of woollen or cotton netting			0	5
2d	do	do	*American Poultry Book*	
3d	do	do	Diploma	
1st best specimen of Fancy Netting			0	10
2d	do	do	*The Ladies' Book*	
3d	do	do	Diploma	
1st best specimen of Embroidery			0	10
2d	do	do	*Comp. to the Flower Garden*	
3d	do	do	Diploma	
1st best specimen of raised Worsted work			0	10
2d	do	do	*Florists' Guide*	
3d	do	do	Diploma	
1st best specimen of Wax Fruit			0	10
2d	do	do	*The Ladies' Book*	
3d	do	do	Diploma	
1st best specimen of Wax Flowers			0	10
2d	do	do	*Gardening for Ladies*	
3d	do	do	Diploma	

Class O—*Fine Arts.*

1st best specimen of portrait oil painting			0	10
2d	do	do	*Gray's Botanical Text Book*	
3d	do	do	Diploma	
1st best specimen of figure oil painting			0	10
2d	do	do	*Fruit Culturist*	
3d	do	do	Diploma	
1st best specimen of landscape oil painting			0	10
2d	do	do	*Cream of Scientific Knowl.*	
3d	do	do	Diploma	
1st best specimen of portrait water colors			0	10
2d	do	do	*Gray's Botanical Text Book*	
3d	do	do	Diploma	
1st best specimen of figure water colors			0	10
2d	do	do	*Gardening for Ladies*	
3d	do	do	Diploma	
1st best specimen of landscape water colors			0	10
2d	do	do	*The Ladies' Book*	
3d	do	do	Diploma	
1st best spec. of Crayon Portrait Drawing			0	10
2d	do	do	*Gardening for Ladies*	
3d	do	do	Diploma	
8st best spec. of Crayon Figure Drawing			0	10
2d	do	do	*Theory of Horticulture*	
3d	do	do	Diploma	
1st best spec. of Crayon Landscape Drawing			0	10
2d	do	do	*Farmers' Instructor*	
3d	do	do	Diploma	
1st best specimen of pencil portrait drawing			0	10
2d	do	do	*Vegetable Kingdom*	
3d	do	do	Diploma	

Fine Arts—(contin. d.)

1st best specimen of pencil figure drawing			0	10
2d	do	do	*The Ladies' Book*	
3d	do	do	Diploma	
1st best spec'n Pencil (landscape) Drawing			0	10
2d	do	do	*Gardening for Ladies*	
3d	do	do	Diploma	
1st best specimen of Lithographic Engrav			0	10
2d	do	do	*Bosingault's Organic Nature*	
3d	do	do	Diploma	
1st best specimen of Wood Engraving			0	10
2d	do	do	*Downing's* Fruit & For. Trees	
3d	do	do	Diploma	
1st best specimen Engraving on Copper			0	10
2d	do	do	Parnell's Applied Chemistry	
3d	do	do	Diploma	
1st best specimen Engraving on Steel			0	10
2d	do	do	Nat. History of the Honey Bee	
3d	do	do	Diploma	
1st best specimen Stypography Engraving			0	10
2d	do	do	Gardner's Farmer's Diction'y	
3d	do	do	Diploma	
1st best case of Stuffed Birds			1	0
2d	do	do	Thomson's Elements of Botany	
3d	do	do	Diploma	
1st best Picture Frame			1	0
2d	do	do	Vegetable Kingdom	
3d	do	do	Diploma	
1st best specimen Stucco Moulding			0	10
2d	do	do	Farmer & Mechanic	
3d	do	do	Diploma	
1st best specimen Glass Staining			0	10
2d	do	do	Theory of Holticulture	
3d	do	do	Diploma	

CLASS P.—*Potteries, &c.*

1st best specimen Pottery			0	10
2d	do	do	Farmer's Gardner's Dictionry	
3d	do	do	Diploma	
1st best specimen Roofing Tyle			0	10
2d	do	do	Fruit Culturist	
3d	do	do	Diploma	
1st best specimen Draining Tyle			0	10
2d	do	do	New Eng. Fruit Book	
3d	do	do	Diploma	
1st best half dozen Bricks			0	10
2d	do	do	Hints for managmt of Gardens	
3d	do	do	Diploma	

CLASS Q.—*Book-Binding, Printing, &c.*

1st best specimen Book-binding			0	10
2d	do	do	Gray's Botanical Text Book	
3d	do	do	Diploma	
1st best ream Writing Paper			0	10
2d	do	do	The Vegetable Kingdom	
3d	do	do	Diploma	
1st best ream Printing Paper			0	10
2d	do	do	Bousingault's Rural Economy	
3d	do	do	Diploma	
1st best specimen Letter-press Printing			0	10
2d	do	do	New England Fruit Book	
3d	do	do	Diploma	

CLASS R.—*Ploughing Match.*

1st best Ploughman over 18 years of age.			£5 0
2d	do	do	1st & 2d vols Farmer's Liby
3d	do	do	Diploma
1st best Ploughman under 18 years of age			£5 0
2d	do	do	Encyclopedia of Architecture.
3d	do	do	Diploma

RULES AND REGULATIONS.

1st. All articles to be exhibited must be reported to the Secretary on the day previous to the exhibition, and be on the Ground before 10 o'clock of the morning of the Show day, and must be the growth, produce, or manufacture of Canada.

2nd. Each person exhibiting articles for competition, will receive a Ticket with a number designating the article; upon the corresponding numbers on the article the Judges will decide. No interference will be permitted with the Judges, who will report their decisions to the Executive Committee of the Association.

☞ There will be a Dinner provided. Tickets for admission to which can be obtained from the different Stewards, or at the Ticket Office.

The Ploughing Match and trial of Implements will take place on Thursday the 22nd, in a field convenient to the Show Ground.

The Mayor of the City of Toronto has kindly offered the use of a Field suitable for the occasion: the Carriage Entrance to which will be through the College Avenue. Entrance for Stock and Articles for Exhibition by the street west.

Members of the Association will secure each a Badge, which will entitle them to admission to all the different Departments of the Exhibition. Others will be furnished with Tickets of Admission at the Ticket Office, on payment of a small fee.

The strictest order and decorum will be maintained, and no pains spared by the Managing Committee to make the Exhibition worthy the patronage of an enlightened country.

The Bulls must be secured by rings

in their noses, to prevent accidents. Pens will be provided for the Stock,—for the use of which parties will be charged a small sum.

It is expected that the different District Agricultural Societies will send each three or more persons competent to act as Judges, from whom Committees will be appointed to judge the several classes.

☞ Discretionary Premiums will be awarded for such articles as may be exhibited, and which, in the opinion of the Committee may be worthy of a Premium, though not enumerated in the Lists.

*** The enterprising Proprietor of the Royal Mail Steamers, D. Bethune, Esq., has kindly consented to convey Passengers, Stock, and Implements of Husbandry, and other articles intended for the Show, at one-half the usual rates; and the Committee of Management hope to make a similar arrangement with the other Steamboat Proprietors, and the Owners of the various Stage Coaches throughout the Province, so that the greatest possible inducements may be held out to Competitors and Visitors from all parts of the Country.

E. W. THOMSON,
President.
W. G. EDMUNDSON,
Secretary.

Toronto, Sept. 1846.

The British American Cultivator,

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W. G. EDMUNDSON, } *Proprietors.*
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W. G. EDMUNDSON, *Editor.*

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☞ Editors of Provincial newspapers will oblige the Proprietors, by giving this advertisement a few insertions.

Toronto, Jan, 1846.