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AN ACT

To LEGALIZE CERTAIN PROCEEDINGS TAKEN BY AGRICULTURAL SOCIETIES IN LOWER-CANADA, AND FOR OTHER PURPOSES.

[Assented to 4th May, 1859.]

WHEREAS certain irregularities have occurred in the election of the Officers of Agricultural Societies in Lower Canada, Which took place at the period indicated by the Act twentieth Victoria, chapter forty-nine: And whereas an erroneous interpretation of the Act twentieth Victoria, chapter thirty-two, has caused certain Agricultural Societies in Lower Canada composed of more than forty persons, contributors to an amount exceeding twenty pounds currency, to be of opinion that the said Act rendered it unnecessary for them to subscribe to the declaration and form contained in Schedule A of the Act first above cited: And whereas it is expedient to extend the term limited for the organization of Agricultural Societies where such Societies have not already been organized in Lower Canada, and in consideration of the advantages which result from the proper working of the said Agricultural Societies: Therefore, Her Majesty by and with the advice and consent of the Legislative Council and Assembly of Canada, declares and enacts as follows:

1. Elections of officers of Agricultural Societies which have taken place in the different counties in Lower Canada at the period enacted by the Act twentieth Victoria, chapter forty-nine, are hereby declared valid, and the said officers shall be entitled to exercise all the powers, and to discharge all the duties, conferred and enumerated by the Act last cited and by the Act twentieth Victoria, chapter thirty-two, with reference to Agricultural Societies in Lower Canada; If however, in any County in which but one Agricultural Society ought to exist, two Societies have been organized in opposition one to the other, that Society which has been admitted by the Board of Agriculture shall be the legally organized Society, and shall enjoy all the rights and privileges conferred upon Agricultural Societies.

2. The said Agricultural Societies organized as aforesaid in conformity with the provisions of this Act, shall nevertheless subscribe to the declaration in the form contained in the said Schedule A of the said Act twentieth Victoria, chapter forty-nine; and the said declaration shall then be deemed to be subscribed to in conformity with the provisions of the Act last above cited.

3. Notwithstanding the provisions of the Act twentieth Victoria, chapter forty-nine, which enacts and provides that the election of the President, Vice-President and Directors should take place within the three first weeks of the month of January, one thousand eight hundred and fifty-nine, for the current year, it shall be lawful for the inhabitants of any County in Lower Canada, upon conforming to the other provisions of the Act last above cited, to organize an Agricultural Society, and to elect the President, Vice-President and Directors, at any meeting called for that purpose by the Warden or a Justice of the Peace in the County, upon the requisition of at least three persons entitled to vote at the election of the officers aforesaid.

4. If on the day and at the hour and place at which such meeting is to be held, the said Warden or Justice of the Peace be absent, any person selected by the majority of the persons present and entitled to vote at such election shall preside, and shall discharge, in so far as concerns the said election and the Acts relating thereto, all the duties imposed upon the President of any such meeting.

5. The proceedings at such meeting shall be transmitted to the Board of Agriculture by the person who shall have presided thereat; and if such person shall neglect or refuse to transmit a report of the said proceedings to the Board of Agriculture, whether such proceedings shall have been had since the first day of January, one thousand eight hundred and fifty-nine, or shall be had after the passing of this Act in conformity therewith, it shall be lawful for not less than three persons who shall have been present at such meeting to draw up a *procès-verbal* setting forth the result of such meeting, and giving the names of the officers elected for such Agricultural Society, whether the same be for a County or for the Division of a County, as the case may be; And the said *procès-verbal* shall be transmitted to the Board of Agriculture, and shall be considered to be an official report of the proceedings of such meeting; if however it be objected that the said report is false and irregular, the Board of Agriculture shall decide the matter in dispute, and its decision shall be final.

6. The Agricultural Societies which have transmitted reports of the proceedings at their meetings to the Board of Agriculture, and of which the proceedings have been declared to be valid by the said Board of Agriculture, are hereby legalized notwithstanding any irregularities in such proceedings.

7. The Secretary-Treasurer of every Agricultural Society shall be bound to furnish security to the said Agricultural Society of which he is the Secretary-Treasurer, to the amount of two hundred pounds currency, to the satisfaction of the President and Vice-President of the said Society; and it shall not be lawful for him to receive any money from the Board or Bureau of Agriculture, without having first furnished a copy of such security to the Board of Agriculture.

8. All counties in Lower Canada, united for purposes of representation in the Legislative Assembly, shall, for all the purposes of Agriculture, be deemed separate counties, and shall enjoy all the rights and privileges conferred by the laws respecting Agriculture in force in Lower Canada, upon Counties not so united.

9. All returns to be made by Agricultural Societies organized in virtue of this Act, shall be made to the Board of Agriculture upon or before the first day of July next.

10. So much of the said Act twentieth Victoria, chapter thirty-two, as requires that the Agricultural Association for Lower Canada shall hold an annual Fair or Exhibition, is hereby repealed, and henceforth the said association shall hold a Fair or Exhibition annually or biennially, reckoning from the date of its last Fair or Exhibition, as the Board of Agriculture for Lower Canada shall deem best.

11. In case the Board of Officers and Directors of the Agricultural Society of any County or part of a County require the Municipal Council of such County to select a central and proper place in such County or part of a County at which the show of such Society shall be held in each year thereafter, it shall be lawful for such Municipal Council at any of its General Quarterly Sessions after the first day of February, one thousand eight hundred and sixty, and it shall be the duty of such Municipal Council after that day at its first General Quarterly Session, after having been so required, to pass a By-law declaring its selection of such a place, and thereafter the annual show of such Agricultural Society shall always be held at such place.

12. This Act shall be a Public Act, and shall apply to Lower Canada only.

DRAINAGE ACT FOR CANADA.

We think it full time to announce to our Readers that in order to enable the Farmers of the country to carry out thorough Drainage on a liberal and extended scale, we have prepared a Drainage Bill for Canada, and it shall be introduced in the course of the coming season. We have endeavoured to arrange it so, that the providing of the necessary means shall be little burdensome, even temporarily, to the country. The ultimate benefits resulting seem undeniable. We have ample proof of this elsewhere, with which we are abundantly familiar. The country, by the working of such a measure, would be propelled, in the course of improvement, half a century in a very few years. If then we can fall on a plan for providing the means conveniently—if such immediate and acknowledged benefits are certainly to follow—what satisfactory reasons can be conscientiously urged for delay? Every county member from Gaspe to Detroit, will be instructed to support the measure. Then how can it be defeated? It would take a conjuror to tell. Nothing shall be wanting on our part to ensure its successful passage through the House; and the agriculturists of the country may rely on it, we shall be faithful to our promise! The agricultural and lumbering interests are the staple of this country. The lumbering interest are themselves, as we have occasion to know, about to make demands on their own part. They will make common cause, on this occasion, with the agriculturists, and it would be difficult to imagine from what quarter they could possibly encounter opposition. We shall recur to this subject—meantime we call on all our agricultural friends to band themselves together. Let them be resolute in urging their members to advocate their true interests in the House—and their triumph is certain. Every man—and certainly every agriculturist from Gaspe to Detroit is interested in the success of this measure. Let us not fail then from any lukewarmness on our own part.

J. A.

JUNE

About the beginning of the month, we had some very cold days, with sharp frosts. This was preceded in the end of the previous month by soaking rain which did immense good to vegetation, and the crops, benefitted materially. In the end of the month there was a great stagnation in the flour trade—good Upper-Canada brands held at \$7 for superfine, Fancy, \$7,25, Extra \$7,50 to \$8,50 according to quality. Oatmeal nominal. Grain dull and very little doing. Peas offering at \$1 to \$1,10 per buchet. Pork dull, Mess \$14,50—Beef Dull—Prime Mess \$14 to \$14,50, and Prime \$9 to 9,50. Bacon Shoulders and Hams difficult of sale. Lard 12½ to 13 cents. Wool 17½d to 17½d lb. for clean and fine quality, and the demand dull in full proportion to the supply. Ashes, plentiful—Pots, about 5 cents—Pearls, about 10

cents—Current Pots \$6,25—Pearls \$6,50. Rates of freight low—Cattle extra, \$9 to \$10—First quality, \$7½ to \$8½—Second and Third, \$6 to \$7—Milk Cows, \$18 to \$60 each—Sheep, \$4 to \$6—Lambs, \$2 to \$3—Hogs, \$6½ to \$7½; Pelts 25 c. to 34 cents each—Tallow 7 cents. Towards the middle of the month we had cold weather with occasional rain—vegetation where not injured by frost, appeared in a healthy state, but heat was much needed. Reversing the order of things, some flour was shipped from Montreal west to Belleville, Roxton, Toronto and Lanark, and some from Coburg was returned forthwith. Stump tail has been pouring in upon us from New-York, being unsaleable at home. Some salt butter was sent for shipment to the Lower Ports and Britain. Ashes, a large supply. In grain found little doing.

The St. Cathrines Constitutional in a late number says that "the microscope has given unmistakable evidence of the prevalence of the wheat-midge in this vicinity, and that subsequently no glass has been required to detect them."

A gentleman of London, C. W. sent to one of his correspondents in Britain, about the 12th ultimo, some fully formed heads of wheat grown in the neighbourhood. This betokens an early harvest. The accounts North and West, and in all directions, are favourable.

The weather is now fine, and with occasional showers, and vegetation continues to look well, except where it has been affected by the frosts. From Western Canada we have complaints of serious injury caused by frost and the wheat-midge. We cannot as yet certainly predict the extent to which the whole crop will suffer from this scourge. There has been a great outcry raised against the Bakers for not reducing the price of bread as flour fell—but flour has fallen little, being held at \$8,50 for best white bread—and good sound plain for making brown bread is quoted at \$6,50 per Barrel. Any baker using "stump tail" and inferior flours would certainly lose his customers and profit nothing.

We are sorry to say that business is exceedingly quiet—whether as regards produce or merchandise. Many of the boats in western waters are laid up. Recent accounts from the old country show a general depression in prices. In grain there have been few transactions. Pork has been lower in New-York—though Montreal mess has more than kept its place. Butter is not much enquired after. Ashes have been declining. Wool quiet. We may state generally that the damage done by the late severe frosts have not been so damaging as they have been so industriously represented—potatoes have suffered—corn has suffered—and tender vegetables have suffered, no doubt. But the damage on the whole has been less considerable than represented.

J. A.

JULY.

This is a very busy month; and we have the hot weather to struggle against. It is necessary that the labourer should be temperate and cautious in labour, meat and drink. When horse power is introduced, and it will certainly make its way more generally speedily—one man can do the work of six. Buckwheat may be sown—so as to escape frost. Peel bark, and pile it up to dry. Bees swarm.

The dairy is productive; sow crops for soiling. Haying is the great work. Hoeing should be carefully attended to; if possible, keep the hogs shut up, and supply them amply with muck, weeds, &c., and you will make much valuable manure under partial cover. Take care even now to be adding to your manure resources. Keep your cattle when in the house abundantly fed and littered. Poultry will not yet do so much harm abroad as afterwards. Keep all growing crops free from weeds. Sow turnips at convenience—Ruta-Bagas, swedes, &c., &c., later—earlier varieties at any time. J. A.

WIRE FENCING.

We would direct the attention of our readers to an advertisement in to-days columns, recommending a specimen of wire fencing. We ourselves have recommended wire fences strongly in many localities, both in this and in the Old Country. We have run such a fence in Scotland 15 miles over steep mountains—as it appeared well suited for such localities, from a very appreciable recommendation—its facility of transport. What labour would it not have cost—what expense—to bring together and erect a stone fence in such a locality. And a wood or even turf fence was, the one or the other, for many reasons not so eligible. On farms or small properties when there is a transfer of ownership, these fences are taken over with other moveables on inventory—at valuation. We would willingly pursue this subject—but we fear we must defer our farther remarks till next number. J. A.

PUBLICATIONS RECEIVED.

Suggestions on Landscape Gardening, by Charles Follen, Architect and Landscape Gardener, Thorough Drainage, by J. Herbert Shedd, Civil Engineer. Boston, Phillips Sampson & Co.—This pamphlet contains some valuable hints on the subjects of which it treats—though nothing strikingly novel.

Canadian Agriculturist and Journal, and Transactions of the Board of Agriculture of Upper-Canada, Toronto, Thompson & Co.—We have very great pleasure in noticing this valuable publication. It contains a great variety of sound and excellent original matter, and the selections are made, as might have been so certainly expected, with great care and judgement. It deserves a large circulation, and we have every reason to believe that its merits are fully appreciated.

Country Gentleman, Albany, N. Y. - Luther Tucker & Son.—It seems surely unnecessary to notice this old and well supported agricultural periodical. It has well kept its position amidst surrounding competitors. We heartily wish it may continue to prosper as greatly as we could desire.

American Agriculturist—Judd, New-York.—We cannot too highly applaud the persevering industry of Mr. Judd. Neither labour nor expense is spared to render this publication all that it could well be desired to be. The price is ex-

tremely moderate. The illustrations are numerous and excellent. The matter is well selected, and it frequently contains very valuable original articles—specially procured by the proprietor at considerable expense. It has a wide circulation in English and German—and well merits every encouragement.

(To be continued in our next Number.)

ATMOSPHERIC INFLUENCES UPON SOIL, AND VEGETATION.

Showing the nature of the atmospheric influences upon the soil and vegetation, as affecting the amount and value of the produce including the modification of these influences arising from heat and cold, dryness and moisture.

[CONTINUED.]

We have already hinted, that the leaves of plants, exhale or perspire under the influence of light and heat, and of course add to the atmosphere all the portions of the ascending sap which the plant rejects as unnecessary to the vegetable economy. This is generally found, unless in very dry weather, when it is sometimes tinged with the peculiar properties of the plant, to be mere watery fluid. Many plants could be named that perspire to an almost incredible extent; for instance the well known *Cornus Muscula*, or *Cornelian Cherry*, which is said in 24 hours to perspire nearly twice its own weight. It is thus, then, that, without the watery vapour in the air all vegetation would wither and die. It supplies two principal elements of the composition of vegetables hydrogen and oxygen; and whether it acts in the air, as an invisible fluid, or in the soil as a solvent and element of nourishment, its presence is indispensable to vegetable existence. But we have seen that, from analysis, vegetables are found to contain carbon, sometimes, and very sparingly, nitrogen, salts, and the common earths. The elements of their earthy and saline matters are unquestionably derived from the soil, if the compounds themselves are not imbibed from it in a state of solution. The nitrogen of the air powerfully aids in the formation of various native salts in the soil. With regard to carbon formed in vegetables, it is clear, that in the air-plant, and others of this class, the supply must be derived from the atmosphere; and we know that, if a plant be confined in a limited portion of atmospheric air in the light and heat of the sun, the carbonic acid, which we have shown to form a portion of that air, will speedily disappear. Plants then derive carbonic acid from the atmosphere, retain the carbon, and give out the oxygen; and thus add oxygen to the air; and carbon appears in great quantity, on analysis, in the solid parts, and seeds of vegetables. This is always the case in the light, but it has been found to be otherwise during darkness, when they sometimes give out carbonic acid gass.

And it is supposed that vegetables make the greatest progress in acquiring expansion in bulk in the soft parts and in elongation during darkness; and that the perfecting, maturing, and consolidating of their parts, and final ripening of their valuable products is accomplished by the action of light and heat.

The influence of the components of the atmosphere are, therefore, sufficiently apparent, and also their hygroscopic effects and action, and we shall proceed to consider more particularly the modification of these influences by heat and cold, dryness and moisture.

Within the tropics vegetable forms assume a most gorgeous and luxuriant appearance, and a boundless variety, and nature exhibits herself in her most splendid and brilliant witchery. In the temperate zones, she appears in more sober and less magnificent array, and, as we approach the poles, we gradually lose all trace of luxuriance, and it dwindles away until, at last, we encounter the regions of everlasting snow and cheerless darkness. From this, then, we may conclude, that the light and heat of the sun are the most powerful agents in determining the existence and growth of vegetables. In winter, vegetation ceases. We have shown that at a temperature of 32° Fahr. when water solidifies it cannot proceed. However, natural springs are found to preserve in winter a temperature often higher than the surrounding air, particularly in latitudes above 45° ; and this, with other well ascertained facts regarding the temperature at great depths, led to the investigation and proof of the fact, that the roots of large trees, penetrating deep into the soil, which becomes warmer as we descend, are thus enabled to preserve the internal fluids at a temperature higher than the exterior air. The local temperature of a country, or its climate, depends much on its distance from the Equator, and its height or elevation above the level of the sea. However, in the two hemispheres, the decrease of heat follows different laws, decreasing more rapidly in the southern than the northern. It is also affected by the longitude. The cold increases less with the latitude in the west of Europe than to the east or west. If we proceed northward under meridian 90° either east or west, the cold increases with startling rapidity J. A.

To be continued.

INFLUENCE OF SOIL ON VEGETATION.

IV. MAGNESIA.

We must next consider an earth of less common occurrence than any of the former. It is also composed of equal weights of a metal called magnesium and oxygen. It is, when in union with carbonic acid, soluble in water containing that acid. Both the sulphate and nitrate of magnesia, compounds of equal weights of sulphuric and nitrate acids, are sometimes found in soils. These are the salts of magnesia that we generally meet with. It is occasionally, as in the English counties of Derby, Northumberland and Nottingham, found associated with carbonate of Lime in Lime rock ; and there is a strong prejudice against all lime associated with magnesia. When Lime, containing this substance, is applied to soils in the same proportion as pure Lime, it proves very caustic, and has been

found to have a prejudicial effect on vegetation.* Yet some plants live where it is present in quantity, though they would no doubt thrive better in a different locality. It is a very caustic earth and attracts carbonaceous matter and moisture both from the atmosphere and Elements of soil most powerfully.—It does not, like Lime, effervesce with acid, &c., in this way, is easily detected.

V. THE ALKALIES SODA AND POTASSA,

next demand a few words.—These substances attract carbonic acid and moisture most powerfully, and as has been shown, act also with much effect on the inorganic elements of the soil, as well as the organic.—As carbonates, they are very soluble; and enter readily into the various combinations with the soluble and decomposing portion of the other elements of soils; and they are undoubtedly appropriated by plants in varying quantities, as they are found in their ashes on incineration.—Their action on plants is conjectured to partake of the mixed character of an external stimulant and condiment. They abound in vegetable ashes of every description, and are often, in this form, applied to soils, as a manure or top-dressing. The nitrate of soda has been also successfully used for a similar purpose. We may conclude by just noticing,

VI. THE OXIDES OF IRON AND MANGANESE,

which, with the carbon of animal and vegetable decomposition, powerfully, if not principally, operate in communicating their colours to soils. It has been alleged that some salts of iron are destructive to vegetation. Where it abounds in wet lands, it does certainly produce serious consequences. But this is so far cured by judicious draining.* They occur to an injurious extent only in particular and circumscribed localities. When they act merely as colouring matter, they appear to have little direct effect in promoting fertility, or in inducing sterility, other than by the mere colour they thus communicate; and it could we think perhaps be shown satisfactorily, by a little argument, that the colour of a soil has an effect on the vegetation. But the investigation of this subject would demand more space than can be afforded in this paper.—*To be continued.*

J. A.

DEPTH OF PLOWING.

It has been well remarked in the June No of our *Albany* friend, the *Country Gentleman*, that a deep fertile soil will ever produce the heaviest crops—permitting, as it does, the free extension of the rootlets of the crop growing on its surface. That shallow soils, are generally wet, and that this is almost in-

* This arises from its not combining so readily with carbonic acid, when it would be converted into a carbonate, become mild, and lose its caustic and injurious action.

* The application of lime to soils and subsoils where these noxious substances exist, frequently rectifies and neutralizes their prejudicial action; and the acid, combining with the lime tends in fact to promote fertility.—Where superabundant moisture exists, draining must be resorted to as a primary step.

riably the cause of their shallowness. His object is to recommend thorough drainage, and it gives us sincere pleasure to go hand in hand with all those mentors who advocate this primary improvement. But why does the presence of water cause their shallowness—causing it progressively and incessantly to encrease. Stagnant water frequently aids in depositing peroxide of iron, and at other times carbonate of iron or of lime—thus filling up the pores of the soil with a natural cement which unites the earthy and stony particles together, forming what is familiarly termed a pan. But if the superfluous water be removed by thorough drainage—the soil perfectly comminuted by thorough tillage—and the air descending from the surface caused to permeate through the pores, and these latter processes continued and repeated, the subsoil becomes more porous and friable—the body of the soil becomes gradually purified and freed from the deleterious ingredients it contained by aration and lavation—and the deposit which formerly cemented the particles together can no longer be made—and, in course of time—we shall be gratified to find an unkindly and obdurate soil yielding fair returns of all the agricultural crops—disgracing and impoverishing no longer its unhappy owner, and disfiguring the neighbourhood. We can by deep ploughing—turning in at sametime green sward or green crops of any kind, deepen a soil to any extent—and we are only restrained by a calculation of the probable profit or loss. This will depend much on locality, and the prices of produce, as regulated by cost of manure—extraordinary facilities for preparing it and conveniences of marketing produce.

J. A.

STATE FAIRS FOR 1859.

We publish this week a list of the time and places where State Fairs are to be held, so far as we are able to give them. Will our readers, in States not reported, inform us, that our list may be complete.

Canada West,	Kingston,	September 27—30
California,	(holds 10 days)	September 27—
Georgia,	Atlanta,	October 24—28
Illinois,	Freeport,	September 5—9
Indiana,	New-Albany,	September 26—30
Iowa,	Oskaloosa,	September 27—30
Kentucky,	Lexington,	September 13—17
Maine,	Augusta,	September 13—17
Michigan,	Detroit,	October 4—7
New-Jersey,	Elizabeth	September 13—16
New-York,	Albany	October 4—7
Ohio,	Zanesville	September 20—23
Vermont,	Burlington,	September 13—16

CUT GRAIN AND GRASS BEFORE RIPENING.

An intelligent practical man who had just read our article on this subject in Vol. XV, page 253, remarked in our hearing that "if the reasoning of that ar-

ticle be correct it would be worth millions of dollars to the country every year, should the mass of farmers study it and act upon its suggestions." Now we know the reasoning was correct, not only because founded on true scientific principles, but also because we have abundant confirmation in the united experience of all who have put the matter to practical test. We will here repeat that all grass and grain crops designed to be used as food for man or beast should be gathered before full maturity.

Grass, while still green, contains a large amount of starch, gum, and sugar. The sugar is perceived in the sweetish taste of the juice; the starch and gum, being nearly tasteless, are not so readily perceived. The principal nourishing ingredients in all kinds of food are starch, gum, sugar, and some nitrogenous compound. But the starch, gum, and sugar, are mainly changed into hard indigestible woody fibre when grass fully matures. If the ripening process be arrested eight or ten days before its completion, and the plant be dried rapidly, double or treble the amount of starch, gum, and sugar will be secured. The same reasoning holds true of all kinds of grain. Every one is familiar with the sweet taste of green corn, wheat in the milk, etc. When the growth is completed, cut these crops and you save a considerable amount of rich nutriment which would otherwise be changed to the woody fibre of the outer shell. The only point to be looked to, is, to wait until the accumulation of juices is completed, and then begin the harvesting at once. The only exception to this rule is with crops designed solely for seed; these may well be left to the natural full ripening upon the stalk, especially when the seed is to be kept long.

The proper time for cutting grasses is at the moment the seed is set, or immediately after the flowering is over. Clover should be cut as soon as in full bloom.

A large number of experiments on wheat and other grains indicate that the proper time for harvesting is when the kernel is fully formed, but still soft enough to yield to a moderate pressure between the thumb nails. This is usually about ten days before full maturity. We had reports of a number of definite experiments on this subject, since our former article, and which is given below. Several years ago Mr. Hannam, of Yorkshire, England, made five successive cuttings from the same field of wheat, and carefully noted the results which are given condensed in the following table:

Cuttings.	Days before maturity.	Products of 100 lbs of Grain.		
		Fine Flour.	Seconds.	Bran.
1	30 days.	75 lbs.	7 lbs.	17 lbs.
2	21 days.	76 lbs.	7 lbs.	16 lbs.
3	14 days.	80 lbs.	5 lbs.	13 lbs.
4	2 days.	77 lbs.	7 lbs.	14 lbs.
5	0 days.	72 lbs.	11 lbs.	15 lbs.

The largest yield, and the finest flour was obtained from cutting No. 3. A subscriber of the *Agriculturist* in Ottawa, Ill., writes that after rereading our article above alluded to, he last summer resolved to put it to the test on his wheat crop of fifty acres, although against the protest of his well-meaning neighbors. For comparison he left a small portion standing in the field until fully ripe. The result he states as follows:

"The bulk of the crop cut first, weighed 62½ pounds to the measured bushel! The remainder of the crop, cut when fully ripe, weighed but 58 lbs. per bushel—a difference of 4½ lbs. per bushel. The amount harvested was 1,200 bushels; thus a gain of 5,400 lbs. weight, equivalent to about 90 bushels in bulk, was

realized. The flour made from the early cut wheat was superior, being white and lively."

Let others who have not full faith, in this reasoning, try a small portion of wheat or other grain by cutting it when just out of milk, and carefully note the results; we feel quite sure they will be satisfactory. The reaping machines, now so common, put it in the power of farmers to gather their grain crops at the most appropriate season.

TO PREVENT THE FEET FROM SLIPPING IN HAYING TIME, ETC.—C. T., Queen's Co., N. Y., recommends tacking the soles of old rubber shoes on the bottoms of boots or shoes during the haying season, to prevent the feet slipping. Leather becomes very smooth by walking over stubble, and the mower sometimes finds it difficult to "get a good hold" as he advances forward to swing his scythe. It is also a good precaution to put on rubber shoes with corrugated bottoms when going on to a sloping roof, as there is less danger of slipping—unless the roof is very wet, when one should not go at all.

INDIAN CORN—TOP-DRESSING OF ASHES, PLASTER, ETC.

In looking over the mode of cultivation practised by those most successful in growing the corn crop, and especially the statements of those who have taken premiums for large products of this cereal, we almost invariably find that some fertilizer was applied in the hill before planting, or as a top-dressing after the corn appeared above ground, immediately before or after the first hoeing. The benefits of this course are not unappreciated by thousands who do not compete at fairs, and hence we find the latter practice quite general throughout the Middle and Eastern States. It involves but little labor and a slight expense, and is found to assist the young corn in getting an earlier and stronger start, so that it can forage for itself through a greater depth and breadth of soil.

A handful of ashes thrown around the hill just before hoeing the first time, is one of the most simple and common applications. That it is beneficial, long experience shows, and how any farmer can neglect it for the purpose of selling ashes for eight or ten cents a bushel in cheap calicoes and inferior groceries, is more than we can comprehend. In applying the ashes, if damp, a small paddle or scoop will be found convenient, or a piece of old tin or sheet-iron rolled up funnel-shaped, can be employed, the smaller end serving as a handle. A little practice will enable one to do the work very rapidly, and yet carefully, so as to place the ashes around and not upon the corn, which is injurious, especially if a rain follow immediately.

We have mixed ashes and plaster, one-third of the latter, and thought the application a more effective one—better than either applied alone. It should be remembered, however, that neither ashes or plaster can take the place of manure. The soil must be rich for corn, and there is nothing better to make it so than good barn-yard manure; but these top-dressings are useful, as before remarked, in stimulating the early growth, and thus encreasing the strength and hastening the maturity of the plant.

There are various mixtures employed by different farmers, varying in cost and value. Mr. Walrath of St. Lawrence Co., on his State premium farm, uses a composition of six bushels of ashes, one of plaster, one of lime, and half a bushel of salt, with a small quantity of sulphur, pounded bones, &c., mixing altogether, and applying a small handful both before and after hoeing. The effects are beneficial to this and all other farm crops. Salt alone has been commended as

a valuable top-dressing, but it is difficult so to apply it as not to kill the corn—which it will do if it comes in contact with seed or young shoots.

On some soils neither ashes or plaster are thought to produce any beneficial effect. We think these exceptional cases are scarce, away from the seaboard, and the vegetable alluvial and prairie soils of the West. We shall gladly give place to experiments throwing further light on the whole question of top-dressings for corn and other hoed crops.—*Go. Gentleman.*

THE CROPS.

THE FROST AT LONDON.—Another heavy frost visited this locality on Friday night, equal in severity to that of Saturday last, and again cutting down the tender vegetables level with the ground. Fields of potatoes which had somewhat revived, and were beginning to throw out a few shoots, were, we regret to say, a second time destroyed, and presented next morning quite a blackened appearance. The corn has also been retarded, and it is doubtful whether this second blow from Jack Frost will not necessitate the planting of a new crop. Several parties in the city, expecting that the frost of the Saturday previous would be the last of the season, put out large quantities of tomatoe plants, most of which have been again killed. With respect to the grain crop, we hear that the wheat has been damaged, but not to any great extent. Such weather at this season of the year has not been experienced before within the last twenty years.—*London Prototype.*

HORTICULTURE.—A few weeks ago we noticed the great destruction that had taken place last winter among plums, pears, and even apples. Some pear trees, which have stood fifty or more years, have been almost entirely winter-killed. From the boughs of a number of these apparently dead trees, however, buds have burst forth here and there, which are shooting into branches; so that they may, in a few years, be renewed again, if no other unfavourable season occurs. The buds have suffered more than the wood by winter-killing. On many trees there was not a single bud living this spring, whilst the wood was still green and ready to put forth new buds, as above stated; and even where leaf buds had survived, the flower-buds, which appear to be specially tender, perished. This was the case generally with plums and cherries; so that there will not, we suppose, be any fruit of these kinds this season. Perhaps, having no appropriate place in which to lay their eggs the Curculio may die out this year,—plums and cherries being the breeding place of that destructive insect. It is to be remarked, as a *per contra* to so much destruction of fruit trees, that the caterpillar—that merciless scourge of the fruit grower has, in a great measure, perished also. There is not one caterpillar, we think this year, for a thousand in some former years.—The orchards are scarcely touched, and the forest trees not at all by the apple caterpillar. The gooseberry and current caterpillar is, however, as vigorous as ever, but we find that the bushes are much less affected when the ground has been dug under the bushes in the fall or very early in the spring, than when it lies in the same state from the time the leaves fall till the time they burst forth again. The severe winter has had no effect on hardy flowers.—*Montreal Witness.*

GREEN CROPS FOR FODDER.—A matter of considerable importance which we would urge upon our readers at this moment, is that some crop be planted as a feed for cows during the summer. If this has not been done already, no time

should be lost in doing it now. If a half acre cannot be sown, let it be less ; but have the ground in good order, and plant corn or Chinese sugar-cane, in drills at about three feet apart, so as to be easily cultivated, and the weeds kept down. It should be planted at intervals of about ten days till the first of September ; thus a fresh supply will be on hand as feed for milch cows. A dozen stalks cut and given to each cow night and morning, will give a wonderful increase of milk and good appearance, and the cows will very willingly come to the stable at night. We have tried this method, and recommend it to all farmers. In the Northern States, the Seed of the Southern corn, which can be procured at all grocers, will be found better for this purpose than the Northern varieties. If the butts of the stalks are too hard for the cows to eat, they can be given to hogs ; thus nothing is lost.—*Co. Gentleman.*

HAY AND HAY-MAKING.

Of the importance of the hay crop we need scarcely remark—save that its value exceeds that of any other product of the northern section of our country. That this value might be largely increased without extending the area devoted to grass, or giving more time to its manufacture into hay, can scarcely be doubted ; for the value of hay, as food for stock, accords with the care and judgment bestowed on its making, and the difference between hay and straw is not so much in the plants themselves, as in the stage of growth in which they are cut, and the curing they receive. One farmer may keep his stock in thriving, fattening order through the winter, while another, although he feeds the product of more acres of meadow, shall find them constantly failing in condition. The first has hay made in the best manner, and “of such a quality, that a given quantity of it will produce nearly as many pounds of meat or milk, as the grass itself would have produced if eaten in green state.”

In what stage of the growth of grass it shall be cut, and the manner in which it shall be cured, have long been acknowledged questions important to the practical farmer, though as yet no decisions in which all acquiesce, have made any one practice the general one. Some cut in the season of flowering before the blossoms have fallen ; others not until the seed has formed ; and others still, defer the operation (with some grasses,) until it is fully ripe. Some cure by exposure to the sun, as rapidly as possible ; others seek to perform the same process with the smallest expenditure of labor ; and others still would keep the hay as fully shaded as may be while drying. Each class bring arguments to sustain their methods of procedure, both in cutting and curing ; but to our mind, chemistry and practical analogy teach us valuable lessons on the subject, which, in a condensed form, we shall attempt to present to the reader. We may state that our attention was first drawn particularly to the subject, ten years since, by an article in *The Cultivator*, giving extracts from a scientific report made by Dr. Thompson for the British Royal Ag. Society.

Chemistry shows us that all plants contain the largest amount of matter soluble in water, at the period of flowering, and that the sugar and gluten of the grass, and a few other soluble ingredients, constitute its chief value as food for animals. These rapidly diminish as the seed forms, changing into insoluble woody fibre, and the hay, which should as far as may be resemble grass in its most perfect state, is worth much less if not made until after that period. There are but few exceptions to this rule, but we believe the Kentucky Blue grass, the June grass, and some others which furnish but a light amount of stem, and are most valuable for their leaves, which continue growing through the summer, may stand past the flowering stage without loss.

The advocates of ripe hay bring as an argument in their favor, the fact that such hay yields the greatest amount of extract when boiled, and that therefore it must contain most nutriment. It is found, however, that boiling very imperfectly imitates the process of digestion, and experiments with the living animal confirm what chemical analysis teaches, that the best hay is that cut and *properly cured* at the period of blossoming.

That process of curing which shall most perfectly retain the nutritive properties present in the plant, is the best process. We do not wish to change or evaporate the juices of the grass, but only to dry out the water. In drying herbs for medicinal and culinary uses, the experience of many centuries teaches that *drying in the shade* is the only way to accomplish the desired object. In making hay this cannot be entirely accomplished, but the plan which most nearly secures it—that of curing in the swath and cock—is a good and safe one; advantageous also, as requiring less exposure to injury from rain than any other.

Clover hay and coarse herdsgrass especially need to be cured in the shade, as they bear little handling while dry, without loss of leaves and blossoms. When mowed, let the grass get fairly wilted and all external moisture dried off while in the swath, with perhaps a single thorough shaking up and spreading, and then put into cocks, and it will be cured with very little loss of value. The partial fermentation or "sweating" which it undergoes, causes but slight change in its constituent parts—save that it separates the water therefrom—and after standing thus for twenty-four hours it needs little or no after-tending to prepare it for storage, and has far less of that harsh and strawy character than it would possess if cured in a different manner. In curing by this method, care should be exercised that the hay is not put up before it is fully wilted, and that the cocks be small and well constructed, so that the sweating process be not carried to an excess, and induce so great a fermentation as to decompose the sugar of the hay, changing it to alcohol and carbonic acid, both of which soon evaporate.

The weather has a great influence on the value of the hay crop, but this we cannot long foresee, or at all control. If it should prove unfavorable and constantly changing, we have found that hay already cut had best remain in the swath—retaining its value thus unstirred, much better than with repeated dryings and wettings. Nothing so injures hay as washing by rain, and this, if many times repeated, will totally destroy its value as food for animals. The provision of hay-caps should not be neglected. These will often enable the farmer to secure hay in good order, which would otherwise be seriously injured. In getting in hay imperfectly cured, if it can be allowed to stand for twelve or fifteen hours in the load, it will become better fit for storing. It will probably heat slightly in that time, which will be arrested by the process of unloading, and leave the hay sufficiently cured for the mow.

Good tools and good workmen are essential to the economical performances of hay-making. There is more ease, as well as completeness, with the good workman in the performance of his labors, and good tools are also a great aid in these respects. Order and readiness in the whole round of preparation, give largely increased facilities for pushing forward this and all other farm operations. It is important to secure ample means to do every thing as and when it should be, since so much depends on the right curing and securing of this great product. The general use of mowing machines and other labor-saving implements, render farmers to some degree independent of manual labor, often difficult to be secured, and always dear at this season of the year. These improvements will often enable the usual laborers of the farm to secure in good order, fifty acres of meadow more readily than they could have got it in without their aid.—*Co. Gentleman.*

COTTON SEED, OIL AND OIL CAKE.

When corn and other provender is high priced, the above may form a valuable substitute for the feeding of cattle. From the analyses of a few specimens of deteriorated cotton seed cake by Voelcker which follows, it would appear to be richer in protein compounds than linseed cake. We shall continue to report future experiments and analyses.

	No. 1.	No. 2.
Moisture	8,27	7,67
Oil and fatty matters	19,19	14,93
Mucilage, Gum and Sugar	12,25	14,47
Protein compounds (including nitro- gen) <i>i. e.</i> flesh forming principles... }	46,62	43,21
Pure cellular fibre, (woody fibre).....	10,22	11,45
Inorganic matters. (ash)		8,27
	<hr/> 100,00	<hr/> 100,00

TO MAKE MORTAR IMPERVIOUS TO WET.

Provide a square wood trough, say 8 feet by 4 feet, by 1 foot 4 inches ; put a quantity of fresh lump lime in ; add water quickly. When the lime is well boiled, having assisted that operation by frequent stirring, add tar (the heat of the boiling lime melts the tar), stir it well, taking care that every part of the lime is intimately mixed with the tar , then add sharp sand or crushed clinker, and stir well as before, after which, in about twenty hours, it will be fit for use.

Tar and lime may also be used, in order to make either wood or mason-work water proof. The best way to prepare gas or coal-tar for coating woodwork with, is to get some of the best stone lime, avoiding chalk lime, and slake it to a fine powder ; boil the tar for about half an hour, and then add about one pint of the hot lime powder to a gallon of tar, and boil it about half an hour longer, stirring it all the while. It will then be ready for use. Lay it on with a brush while it is hot, and you will find it to set hard, and have a brilliant appearance. It is the best coating for wood work, except lead.—*Builder.*

MANAGEMENT OF CLAY SOILS.

The tendency to wash may be lessened by seeding to grass ; and next to this, by sowing to winter grain. Underdraining, by carrying off surplus water, deep cultivation, by leaving more room in the soil to absorb the rains, would be useful. The application of manure, especially of such as contains large quantities of vegetable matter, as straw, sawdust, &c., would increase the power of the soil to absorb and retain the rains.

Unless the subsoil is fertile, it would be best to bring up but little at a plowing, and deepen it gradually in connection with manuring. Clover plowed in would doubtless improve the soil. We are not informed whether the limestone is in its natural bed, or in boulders—in either case the application of lime would probably be useful, but it often materially benefits what are termed limestone soils.—*Co. Gentleman.*

A GOOD YIELD OF ARTICHOKE.

We have repeatedly called the attention of farmers to the productive powers of the artichoke, and suggested that they would make for many purposes a valuable crop when the comparative ease and little cost of raising them was considered. The following experiment corroborates our views in regard to productiveness.

A subscriber writes us that Messrs. E. & D. A. Ramsdell of Canaan, planted with artichokes a piece of ground in the spring of 1858 measuring two squares. This spring (1859) they dug twelve bushels. This is about the rate of 960 bushels per acre. In number 4 of last volume of the Farmer we published the chemical analysis of the artichoke, and of the potatoe. This analysis shows that as it regards the mineral or inorganic ingredients of the two, there is a great similarity. The potatoe will yield a little more starch. Cattle will eat them readily, and mixed with meal, they will increase the milk of cows. They are also valuable for their property of keeping the stomach in a healthy condition, when fed out with dry fodder.—*Maine Farmer.*

CULTIVATION OF BUCKWHEAT.

It has been said that the buckwheat occupies the same position among grains as the donkey does among animals—*useful, but not popular*. It will grow on the poorest of sandy soils; can be sown later than any other grain; and is one of the best crops for cleaning the land and for killing wire-worms and other injurious grubs. It has been extensively used for ploughing in as a manure. But though it has proved beneficial for this purpose, it is not as good as many other crops that might be used—such as white lupin, spurry, red clover, &c.

In clearing off poor and hilly land, buckwheat is admirable for the first crop. We have seen excellent crops on such land in New-England, where apparently no other crop would thrive. On such land, however, it is exceedingly grateful for manure. On the farm of Mr. Henry Sabin, of Lee, Mass., we saw a crop of buckwheat on a rough hill side, where half the field had been top-dressed with 100 lbs. of Peruvian guano per acre; and on this half the crop was at least double what it was on the other half, where no guano was used. An experienced farmer says, "barn-yard manure, whether green or rotted, ashes, lime, and plaster, all seem to produce a wonderful effect when applied to this crop."

Buckwheat is often sown too early. When too early, the hot sun is apt to blast the flowers. The middle of June, in this section, is considered the best time to sow; though in New-England, good crops are often obtained when sown as late as the 4th July. In sections where there is danger of frosty nights early in the fall, it must be sown early, as a slight frost, often destroys the crop. We must endeavour to steer between the two dangers—blasting of the flowers in the summer, when sown early; and the destruction of the crop by frost in the fall, when sown late. It succeeds well sown on clover or grass sod.

Formerly, it was considered best to break up the land in the spring, and cultivate and harrow it a few times before sowing, but latterly the practice is to pasture the land, and break up immediately before sowing. From three pecks to a bushel is the usual quantity of seed.

Of the use of buckwheat we need not speak. Everybody likes buckwheat cakes on a cold winter's morning. It is good food for poultry. Hogs thrive upon and are fond of it. When crushed, it is good feed for horses—more nutritious, it is said, than oats. It is good for milch cows, increasing the quantity and richness of the milk. Bees will travel a considerable distance to find a

field of buckwheat in flower, though it is said the honey is not so good as from clover.

CELERY FOR THE MILLION.

There are probably many lovers of celery who are deterred from the culture of it by the fact that generally a large amount of skill and labour is necessary to produce a good article. The fact that the proper time for the care of celery comes in the most busy season of the year, will account for the scarcity of this fine relish among farmers, and even those who would be glad to cultivate it if they could.

We have a little experience in raising celery which may not be new to some of our readers, and may be of value to others. In the spring of 1858, we planted a large bed of celery in moist alluvial ground, for the purpose of raising plants for transplanting. Not using more than half of the plants, the rest remained in the bed and grew luxuriantly without farther attention. Late in the fall we removed the celery to the house and buried it in layers in a bed of fine sand, covering all but the tips of the leaves. As the weather grew cold we piled hay over the bed until the hay was three feet thick. In December we commenced to use the celery which was then bleached about half way up the stalk. We continued to use it freely from that time, it being better bleached at each opening of the bed. Early in the spring it was bleached beautifully. Although we had numerous strangers at our table, nearly every one has remarked on the fineness of our celery. It was always crisp and tender, preserving its freshness throughout. One fact we noticed in particular, that the last dish of celery was served on the same day with the first dish of asparagus, viz, the 7th of May. It may easily be seen from this that every one who wishes may by a small expense of labor provide himself with the luxury of celery during the spring months. Though for summer and fall I know of no better way to procure it than by the usual method of bleaching it as it grows, which is best accomplished with us, by setting the young plants in trenches about a foot deep, and filling up the earth around the plants as they grow. Celery is naturally a water plant, and therefore thrives best on a moist soil.—*K. in Prairie Ill. Farmer.*

TWENTY ACRES OF STRAWBERRIES.

A few days ago we visited the farm of Mr. P. Sells, situated about five miles from Cleveland, on Kinsman street. It is used entirely for growing the smaller fruits or berries. Twenty acres are in strawberries, of all the various kinds cultivated in this section, and their comparative merits are distinctly shown under the method of cultivation adopted. Of all the new sorts, William's Albany seedling promises best; such clusters of fruit we never saw before, and if in flavor and firmness, they are equal to their character at the East, they will supersede nearly every other kind at present cultivated in this vicinity.

As Mr. S's system of culture differs somewhat from the usual method, we shall describe it. The first year the ground is well and deeply ploughed, and finally thrown up in ridges, about two feet apart; on every alternate ridge, strawberry plants are set out, about four feet apart. The unplanted row is sown with rows of peas, that are cultivated during the season in the usual way, using a shovel plough, and following with a hoe. In working the peas, the strawberries receive equal benefit, and by the time that crop is ready for market, the strawberries are well established, and sending out runners. After the peas are removed, the plough is run along the center of the rows, turning the soil towards the

strawberries, and leaving a furrow where the peas stood, and the ridges are now four, in place of two feet wide, with a deep furrow. The object of growing peas the first year, is simply to pay for the expense of cultivation, and this it does. Under the common system, the first year is one of labor, with no return.

Every blossom that appears the first year is picked off, and the plants are encouraged to run. The second year, the beds are well covered with plants, and a good crop may be expected : at the same the third. When the crop of the third year is gathered the ground is ploughed, and after being well manured, is planted with some kind of hoed crop, for the purpose of cleaning and renewing it ; in the course of two or three years, to be again planted with strawberries. With this system of culture, the proprietor thinks he can afford to sell berries at a much lower price than that usually obtained, and yet realize a good profit.

There is also from four to six acres of raspberries on the farm, all hardy sorts and a large number of gooseberries, principally Houghton's seedling, as these will not mil-ew like the fine English varieties.—*Ohio Farmer.*

EDUCATED FARMERS.

We have received this extract from Rev. HENRY WARD BEECHER'S new book, "Plain Talk to Farmers," to be published June 1th, by MESSRS. BROWN, TAGGARD & CHASE, of this city :—

It is time for those who do not believe ignorance to be a blessing, to move in behalf of common schools. Many teachers are not practised even in the rudiments of the spelling-book ; and as for reading, they stumble along the sentences, like a drunken man on a rough road. Their "*hand-write*," as they felicitously style their hieroglyphics, would be a match for Champollion, even if he did decipher the Egyptian inscriptions. But a more detestable fact is, that sometimes their morals are bad ; they are intemperate, coarse, and ill-tempered ; and wholly unfit to inspire the minds of the pupils with one generous or pure sentiment. We do not mean to characterize the body of the common schoolmasters by these remarks ; but that any considerable portion of them should be such, is a disgraceful evidence of the low state of education.

Farmers and mechanics ! this a subject which comes home to you. Crafty politicians are constantly calling you the bone and sinew of the land ; and you may depend upon it that you will never be anything else but bone and sinew without education. There is a law of God in this matter. That class of men who make the most and best use of their heads, will, in fact, be the most influential, will stand highest, whatever the theories and speeches may say. This is a "nature of things" which cannot be dodged, nor got over. Whatever class bestow great pains upon the cultivation of their minds will stand high. If farmers and mechanics feel themselves to be as good as other people, it all may be true ; for goodness is one thing and intelligence is another. If they think that they have just as much mind as other classes, that may be true ; but can you use it as well ?

Lawyers, and physicians, and clergyman, and literary men, make the discipline of their intellect a constant study. They read more, think more, write more than the laboring classes. The difference between the educated and uneducated portions of society is a real difference. Now a proud and lazy fellow, may rail and swear at this, and have his labor for his pains. There is only one way really to get over it, and this is to rear up a generation of well educated, thinking, reading farmers and mechanics. Your skill and industry are felt ; and they put you, in these respects, ahead of any other class. Just as soon as your heads are felt, as much as your hands are, that will bring you to the top.

Many of our best farmers are men of great natural shrewdness ; but when they were young they "had no chance for learning." They feel the loss, and they are giving their children the best education they can. Farmer's sons constitute three-fifths of the educated class. But the thing is, that they are not educated *as farmers*. When they begin to study they leave the farm. They do not expect to return to it. The idea of sending a boy to school, the academy, and the college, and then let him go back to farming, is regarded as a mere waste of time and money. You see how it is, even among yourselves. If a boy has an education, you expect him to be a lawyer, or a doctor, or a preacher. You tacitly admit that a farmer does not need such an education : and if you think so you cannot blame others if they follow your example.

There is no reason why men of the very highest education should not go to a farm for their living. If a son of mine were brought up on purpose to be a farmer, I still would educate him, if he had common sense to begin with. He would be as much better for it as a farmer, as he would as a lawyer. There is no reason why a thoroughly scientific education should not be given to every farmer and to every mechanic. A beginning must be made at the common school. Every neighborhood ought to have one. But they do not grow of themselves, like toad stools. And no decent man will teach school on wages which a canal boy, or a hostler would turn up his nose at. You may as well put your money into the fire as to send it to a "make believe" teacher—a great noodle head, who teaches a school because he is fit for nothing else ! Lay out to get a *good teacher*. Be willing to pay enough to make it worth while for "smart" men to become your teachers. And when your boys show an awakening taste for books, see that they have good histories, travels, and scientific tracts and treatises. Above all, do not let a boy get a notion that if he is educated, he must, of course, quit the farm. Let him get an education that he may *make a better farmer*. I do not despair of yet seeing a generation of honest politicians. Educated farmers and educated mechanics, who are in good circumstances, and *do not need office for a support*, nor make politics a trade, will stand the best chance for honesty. But the Lord deliver us from the political honesty of tenth-rate lawyers, vagabond doctors, bawling preachers, and bankrupt clerks, turned into patriotic politicians !

TWO MORE OUT-DOOR WHITE-WASHES

The recipe, published in the *May Agriculturist*, p. 136, we have tried on the Lima bean frames described last month, and so far it appears to work well. We used about two heaping table-spoonfuls of tallow to half a pailful of the mixed lime wash. The unslacked lime was put into a pail, water poured on, and the tallow dropped in. When the lime slaked and the mixture was hot, the tallow was thoroughly stirred in. But little of it afterwards rose to the top ; it was stirred well, however, every few minutes while applying it.

In response to the inquiry for further information from those having had practical experience with other out-door washes, a subscriber in Plainfield, N. J., sends the following to the *Agriculturist* which he strongly recommends for both whiteness and durability : Mix Whiting (Spanish White) with buttermilk to a consistence a little thicker than common lime white-wash ; to every pailful (1½ gallons ?) of the mixture add two table-spoonfuls of salt and ½ pint of boiled Linseed Oil. The writer adds that a wash prepared in this manner will remain white six years. If the Whiting and milk will make a compound that will adhere, the oil will probably prevent its washing off. It strikes us that it would

be necessary to keep the mixture warm and constantly stirred while using, or the oil would rise to the top.

ANOTHER—A Subscriber at New-Haven, Conn., sends the following, which he says has succeeded very well with him, it being so hard when dry as not to rub off even on a black broadcloth. Mix: $\frac{1}{2}$ bushel of lime; $\frac{1}{2}$ lb. of white vitriol (sulphate of zinc); 2 quarts of salt; and 5 lbs. of sugar—any refuse sugar will answer. We do not see why a compound like this should be so impervious to water, as not to wash off, which is the main difficulty with out-door white-wash, exposed, as they are, to rains, and dews. We judge only from the chemical character of the ingredients, and not from actual trial, and therefore can not certainly say it will not answer the desired end.

HOW TO MAKE SODA WATER.

Having waited for others to answer the above question that I might receive information, I will now attempt to impart to others how soda water is *really* made.

Soda water is simple water highly charged with carbonic acid gas, and the *pure* article now found in all the hotels, taverns, porter houses, and refreshment saloons in the country, and which has become such a universal beverage, so palatable, and in fact so healthy, is made in an expensive apparatus, and in the following manner: The apparatus consists of copper made vessels, sufficiently strong to sustain a pressure of 150 pounds to the inch. These coppers have an inside lining of lead, so that the water shall in no case come in contact with the copper. They are in separate vessels, as follows: The generator, in which is made the gas; the acid pot, containing the vitriol: the coolers and purifiers, and fountains, which contain the soda water charged ready for use, all connected by small but strong lead pipes. About 30 pounds of whiting or marble dust, is well mixed up with about 20 gallons of water, and put into the generator; an equal number of pounds of oil vitriol is put into the acid pot, the purifiers and fountains nearly filled with pure spring or filtered water. Being thus charged, and ready to fill the bottles, the acid is permitted to drop through a small aperture into the generator, and coming in contact with the whiting or marble dust, immediately throws off a gas, and enough to cause any amount of pressure desired. This gas passes through the purifiers of water, whereby the least particle of impurity is detected, and thence into the fountains, where by agitating fans the water and gas is well mixed, until the incorporation is deemed sufficient. It is then let into the bottles through one-quarter inch gutta percha pipe, connecting the fountain with the bottling machine.

The machine for bottling is a piece of ingenious mechanism; as I have no power of description, I cannot give a proper idea of it, yet simple in its construction. The bottle placed under a cylinder, and cork at the top; the water passes into the bottle, retaining its full pressure of carbonic acid gas, and displacing all the common air in the bottle; as soon as full the water is cut off, and the cork pressed by the machine, into the bottle; the bottle is then taken with bottling tongs to another part of the machine, and the cork tied down.

This soda water is often drunk in its purely carbonated state, but like real mineral waters, in this way it is not quite so palatable; it is therefore most universally flavored with syrups. These syrups are always made to suit the demand, the largest proportion being sarsaparilla and lemon. These syrups are put into the bottles before filling. One man to fill, and two boys to tie, will fill, cork, and tie 250 bottles per hour throughout the day.

The soda water usually drawn at the counters of our confectionaries, is all made in the same way. Those who have a large business have an entire apparatus; some having only a cheap fountain, and sending to others to be charged.

The business of bottling soda water has become of considerable consequence, and although the expense of procuring the machines, bottles, and teams to deliver, is large, yet persons are engaging in the business in all parts of the country; and it may be said to have grown to its present magnitude within the past ten years.—*Co. Gentleman.*

THE CROPS—THE FROST.

So far as we can gather, from correspondents, and from various other sources of information, the crop prospects are good, taking the country as a whole. The newspapers have been filled with accounts of damage by frosts, rain, drouth, etc., and parties who have on hand a stock of last year's products to dispose of, have been interested in magnifying every unfavorable report. That the untimely frosts in the second week in June did severe damage in some localities is certain, but it is equally certain that the injury was confined to limited areas. It is impossible, as yet, to determine the exact outlines of the districts where the cold operated with decided injury on the whole, but enough is known to warrant us in saying that, of all the field, garden, and orchard crops in a condition to be seriously affected by the cold snaps during the week beginning June 5, not one plant in four hundred suffered materially—that is, taking into account the whole country north of the latitude 38°. South of this no great harm was done. In special localities the loss was very severe, and for the sufferers we feel a strong sympathy. We hope good weather, the rest of the season, will, in part, repair the loss experienced. Careful culture of the crops remaining, and an increased space devoted to buckwheat, turnips, etc., will be some help.

It seems to be the economy of Providence, that individuals must at times suffer for the general good. History teaches that even the worst calamities, of war and pestilence, which produce intense suffering and desolation to individuals and whole countries, are yet overruled for the benefit of the race. So it is with such a calamity as the recent frosts. Myriads of devouring insects have been destroyed, and other beneficial results will continue to be discovered; and could we look over the whole ground, and then look into the future, as only He can who seeth the end from the beginning, we doubt not that we should all, even the most afflicted, be thankful for the frosts of June, 1859. We know by experience, that, when in the midst of trial, it requires no little effort for us to have faith in the doctrine that "all things are for the best." The child, while smarting under the rod of correction, will be slow to believe that the discipline is for his ultimate good. So it is with us as grown up children. Yet, in after years, we can almost always look back with satisfaction upon the results of experiences of the most severe kind.—*American Agriculturist.*

MANURING.

Everything belonging in the family of animals and plants, is submitted to an everlasting change of the ingredients. It continually receives ingredients from outside to its growth and preservation—retrocedes such, if becoming useless, and after having attained the term of its life, gives the rest of its ingredients at once back to the universe. None of its particles are lost, for what disappears out of the existence of animals and plants by perspiration, fermentation, decay, &c., only

goes back to the atmosphere, or to the ground, the general source whence it was taken, and is anew able to assist the growth or preservation of organic beings.

To supply vegetation with ingredients furnished from animals and plants, is called, in its most common signification, to manure, and manure itself is used therefor.

The word manure signifies generally the coarser remainders of animals or plants, appearing in stables and other places, and which men give to the ground again, for the fertility of plants. In the ground, going over in humus, it produces new effects, and nourishes the plants; but comparing the small number of humus parts which are found in the field, with the productions produced in that very field, it will be easily seen that the portion of humus has not produced this mass, but that atmosphere must have done a good deal to its production, for the several species of earthy matter are mostly sterile in their pure state and therefore not to be transformed into a product of vegetables.

The atmosphere is also, with regard to its hydrogen, carbonic gas, oxygen and nitrogen, able to deliver all materials out of which the plants exist, except the fixed ingredients, which remain as ashes after burning the vegetables.

For that reason, were the first plants on our earth mostly formed out of atmospherical ingredients, and there is still a great number of plants which are principally formed by appropriating atmospherical ingredients, against which many others, and especially the so-called cultivated plants, require for their perfect cultivation, and particularly the cultivation of the mealy and oily seeds, those ingredients which are formed by dissolving of moist earth (humus). Besides, there are several minerals, not only dissolving the manure, but nourishing the increase of plants. Therefore the manures produce their results generally.

1. By increasing the contents of moist earth, to which mostly belong the remainders of animals or plants.

2. By producing irritation in the plants, and increasing the activity of their vegetation, without nourishing the plants, which is the case of most salts.

3. By exalting the activity of the ground: for instance, lime, ashes, marl, and other articles.

4. By improving the natural proportions of the ground, without having chemical effect on the plants. Some species of manure affect not only one kind or the other, but unite several advantageous effects.

The different manures may be divided in the following classes:

1. Atmospherical manures—2. Animal manures—3. Vegetable manures—4. Combination of vegetable and animal manures—5. Liquid manures—6. Mixed manures (compost)—7. Mineral manures—8. Chemical manures. G. W. Lewis Co., N. Y.

Stavie and Breder.

HIBERTS HINTS TO HORSE-KEEPERS.

The following brief facts we have taken variously at random, in looking through the work:

“A desire for ornament or a fine appearance, should never lead you to buy a fine carriage for a vehicle of all work. A ‘shabby gentility’ will be the result after the gloss is worn away.”

“Choose for your carriage-maker, one who has a character for fair dealing and good work.”

"Ammonia from a stable will destroy the varnish of a carriage in a short time."

"At least once a month place a wrench on every nut on your carriage."

"Almost every wrong act a horse comits is from mismanagement, fear, or excitement ; one harsh word will so excite a nervous horse as to increase his pulse ten beats in a minute."

"Not only is it true that speed alone is the only good thing derivable from blood, but something very nearly the reverse is true."

"Blood from the sire, beauty from the dam, is the golden rule of the breeder."

"We know it is commonly said by farmers, concerning some miserable, under-sized, ewe-necked, cat-hammed wretch of a mare, broken-winded, ringboned and spavined, 'Oh, she will do to raise a colt out of!' So she will! But what will the colt be? Not worth the mare's grass."

"It is never safe to take it for granted that the seller of a horse is an ass, or is not aware of the worth of his merchandise. To get a good horse, one must expect to pay a good price."

"A remarkable bargain in horse flesh is always suspicious, and the greater the bargain the more suspicious it becomes."

"More horses have their wind broken by being worked quick and hard, with their bellies distended with hay, grain, and water, than from all other causes combined."

"Always remember, in using a horse, that it cannot be done with too much coolness, too much gentleness, too much discretion, or too much kindness."

Meteorology.

MONTHLY METEOROLOGICAL REPORT FOR APRIL 1859.

FROM OBSERVATIONS TAKEN AT ST. MARTIN, ILE JESUS, C. E., LATITUDE 45 DEGREES 52 MINUTES, NORTH LONGITUDE, 73 DEGREES, 36 MINUTES WEST, HEIGHT ABOVE THE LEVEL OF THE SEA 118 FEET.

BY CHS. SMALLWOOD, M. D. L. L. D.

BAROMETER.		2,495 inches, it was raining 59 hours 50 minutes.....	
Highest reading of the barometer	Inches. 30.496	Snow fell in 4 days, amounting to 8,40 inches it was snowing 11 hours 45 minutes.....	
the 2nd day.....		Most prevalent wind N. E. by E....	
Lowest reading of the barometer	28.620	Least prevalent wind E.....	
the 19th day.....	29.686	Most windy day the 20th, mean	
Monthly mean.....	1.782	miles per hour.....	26
Range.....		Least do. do, the 20th day....	0
		Aurora borealis visible on 7 nights.	32
THERMOMETER.		The electrical state of the atmosphere has indicated very high intensity.....	
Highest reading the 24th day.....	F. 47.5	Ozone was in large quantity.....	
Lowest reading the 3rd day below zero.....	11° 6	Crows first seen 8th day.....	
Monthly mean.....	30° 33	Song Spanon first seen 14th day....	
Range.....	59° 1	Wild Ducks seen passing South 18th day.....	
Greatest intensity of the suns rays..	58° 7		
Lowest point of terrestrial radiation below zero.....	11° 9		
Mean of humidity.....	823		
Rain fell on 8 days, amounting to			

THE FARMERS' JOURNAL.
MONTREAL RETAIL MARKETS.

July 1859.

	BOISECOURS.				ST. ANH'S.					
	s.	d.	s.	d.	s.	d.	s.	d.		
FLOUR.										
Country Flour, per quintal	18	9	a	19	0	0	a	0	0	
Oatmeal per quintal	17	9	a	18	0	0	a	0	0	
Indian Meal, per quintal	0	0	a	0	0	0	a	0	0	
GRAIN.										
Wheat, per minot	0	0	a	0	0	0	a	0	0	
Oats, per minot	2	9	a	3	0	2	3	a	2	6
Barley, per minot	3	9	a	4	0	0	0	a	0	0
Pease, per minot	4	3	a	4	6	0	0	a	0	0
Buckwheat, per minot	3	6	a	3	9	0	0	a	0	0
Indian Corn, yellow	4	6	a	5	0	0	0	a	0	0
Rye, per minot	0	0	a	0	0	0	0	a	0	0
Flax Seed, per minot	7	0	a	7	3	0	0	a	0	0
Timothy, per minot	9	0	a	9	6	0	0	a	0	0
FOWLS AND GAME.										
Turkeys, (old) per couple	5	0	a	7	6	10	0	a	12	0
Turkeys, (young) per couple	0	0	a	0	0	6	0	a	8	0
Geese, (young) per couple	4	0	a	6	0	3	6	a	4	6
Ducks, per couple	2	6	a	4	0	2	6	a	3	0
Ducks, (wild) per couple	3	0	a	3	6	0	0	a	2	6
Fowls, per couple	2	6	a	3	0	2	0	a	3	0
Chickens, per couple	0	0	a	0	0	1	3	a	1	6
Pigeons, (tame) per couple	1	0	a	1	3	0	0	a	0	0
Pigeons, (wild) per dozen	2	6	a	3	0	3	6	a	4	0
Partridges, per couple	0	0	a	0	0	0	0	a	0	0
Woodcock, per brace	0	0	a	0	0	0	0	a	0	0
Hares, per couple	0	0	a	0	0	0	0	a	0	0
MEATS.										
Beef, per lb	0	4	a	0	9	0	4	a	0	8
Pork, per lb	0	5	a	0	7	0	6	a	0	6½
Mutton, per quarter	5	0	a	7	0	7	0	a	12	0
Lamb, per quarter	3	6	a	0	0	2	0	a	3	9
Veal, per quarter	5	0	a	12	3	5	0	a	15	0
Beef, per 100 lbs	35	0	a	40	0	30	0	a	40	0
Pork, (fresh) per 100 lbs	35	9	a	45	0	27	6	a	30	0
DAIRY PRODUCE.										
Butter, (fresh) per lb	1	3	a	1	6	0	11	a	1	0
Butter, (salt) per lb	0	11	a	1	0	0	8	a	0	9
Cheese, per lb, skim milk	0	0	a	0	0	0	0	a	0	0
Cheese, per lb, sweet do	0	0	a	0	0	0	0	a	0	0
VEGETABLES.										
Beans, (American,) per minot	0	0	a	0	0	0	0	a	0	0
Beans, (Canadian) per minot	7	6	a	10	0	0	0	a	0	0
Potatoes, (new) per bag	4	0	a	4	9	4	0	a	5	0
Turnips, per bag	0	0	a	0	0	0	0	a	0	0
Onions, per bushel	0	0	a	0	0	0	0	a	0	0
SUGAR AND HONEY.										
Sugar, Maple, per lb, (new)	0	4½	a	0	5	0	4	a	0	4½
Maple Syrup per gallon	0	0	a	0	0	0	7½	a	0	8
MISCELLANEOUS.										
Lard, per lb	0	8	a	0	9	0	8	a	0	9
Eggs, per dozen	0	8	a	0	9	0	8	a	0	9
Halibut, per lb	0	0	a	0	0	0	0	a	0	0
Haddock, per lb	0	3	a	0	0	0	0	a	0	0
Apples, per barrel	25	0	a	30	0	15	0	a	20	0
Oranges, per box	20	0	a	22	6	0	0	a	0	0
Hides, per 100 lbs	0	0	a	0	0	0	0	a	0	0
Tallow, per lb	0	4½	a	0	5	0	0	a	0	0
BREAD.										
Brown Loaf	0	11	a	0	0	0	9	a	1	0
White Loaf	0	0	a	0	0	0	9	a	0	0