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THE COLONIAL FARMER,

DEVOTED TO THE AGRICULTURAL INTERESTS OF NOVA-SCOTIA, NEW-BRUNSWICK
AND PRINCE EDWARD'S ISLAND.

VOL. 2.

HALIFAX, N. S., MARCH 16, 1843.

NO. 18.



THE COLONIAL FARMER.

HALIFAX, N. S., MARCH 16, 1843.

REMOVING TO NEW COUNTRIES.

When times are dull many feel disposed to remove to some new country which is represented as a kind of earthly paradise, but far greater part that do remove bitterly repent it; although some succeed. Ho whose spirits always rise at the view of hardships and privations, who rather courts than fears them, always believing he can overcome them, is the proper person to settle in a new country, but they who live among those who get a comfortable living by industry and still feel discontented with their situation, better remain where they are; if they move they will regret it. About eighty years ago when the neutral French were repulsed, their lands were offered to settlers from New England. Among others a party came to Cobiquid from the valley of the Connecticut, which was at that time a plentiful country, where industrious people procured a good living. Not necessity there, but discontent or the expectation of sudden wealth had caused them to remove. Their feelings, after they had been two years in the new country may be gathered from the following *adieu* rhymes composed by the wife of one of them at that time.

Some years ago you all, remember very well,
Of the fine stories we, all heard gentlemen tell,
Twas about the pleasant land, they said they did see,
The land that is called, Nova-seo-si-ee.
So they still did talk, from year on to year,
Till at last to their story, we gave a listening ear;
And thought it for the best, for to come away,
Thinking that must be true, which so many men did say.
We choose out a Committee, and then we sent them down,
To spy out the lands, and to lay us out a town.
Who when returned, such pleasant things said they did behold,
That the whole to us never, never could be told.
O how, foolish people, can you be content
To live here on hire, and pay such a rent,
When you might have a pleasant farm, as ever was known.
And lands for your children, which shall all be their own.
We told them we were poor, and could not get there,
About that they said, we need take no care,
There was nothing on earth, that we owned should be lost,
For we were to come, all upon the Kings cost.
Then we began to think, that we would take our flight,
And our native country then, we began for to slight,
And said that we would go, to that happy land,
Where the milk and honey flowed, on every hand.
And then our King he sent in a sail,
To carry us away with the next pleasant gale,
Many people did grieve, because that we did come,
And said, Ah poor souls; you are all going from home,

But when we were sailing, upon the rolling main,
We had no thoughts at all, of returning again.
But longing for to get where, our sorrows would be few,
Upon the pleasant shores where the milk and honey grow,
But when we arrived we were very much surpris'd,
To see the Spruces stand, so thick before our eyes.
And then we did look upon our Committee,
And asked them where it was, our pleasant farms might be;
And did begin to think, that their judgment was but small,
And some were pleas'd to say, that they thought they'd none at all.
We did begin to think, we were in a solemn case,
And every soul did wish he'd never seen the place,
Who ever thought it would, e'er have been said,
That any in this place, e'er died for want of bread.
But there were some poor souls, who were starv'd to death,*
And very many more, who could hardly keep their breath.
Since we have been here we have seen the day,
That scarcely could our children, either go or play,
It sunk our hearts down, as heavily as lead,
To see such sights as that, all for the want of bread.
Our summer's very cold, our crops are very small,
And some in this place, have rais'd none at all,
I cannot devise, how we shall contrive,
In this world any longer, for to keep alive,
I'm sorry we have, these stories to tell,
It makes think on, the Children of Israel,
And brings our native land, still into our mind,
When we think on the pleasant farms, that we left behind,
Our banks are more than full, they overflow with grief,
There's no where in this world, that we can find relief,
But we all live in hope, to see that pleasant day,
When all our tears and sorrows, shall be wiped away.

* This is a little amplified; there was a cripple in the charge of a very poor family, of whom it was suspected that he died for want; no other person was "starv'd to death." These people had a great number of cattle, which they brought with them "on the King's cost." They found much more than enough of hay growing, but the great cause of complaint was, that the plough land which the French had left would not yield more than two-thirds the quantity of wheat which they wanted, and they were obliged to eat potatoes which they had never done before, and of them they had a very bad kind. When we consider all the advantages which they possessed over settlers in a new country we shall be convinced that such feeble-minded beings are not qualified for settling an uninhabited forest or prairie. A short account of the fortunes of the family of the poetess, will give the exemplification of the career of a grumbler. Her husband removed his family to Horton, hired a farm, and remained there three years, then returned to his own, cut down some of the "spruces," and dyked more marsh; raised plenty of wheat, wool and flax, became convinced a man could never get rich by farming; set up a store; continued trading till he had traded away all his property, when his family broke up and were scattered in different directions.

The longevity of these early settlers is remarkable; the above facts are taken from the memory of a person in her 88th year who has a sister two years and a half older than herself, both enjoying good health, and the use of their faculties; not however to ascribe more to our climate than it deserves, we should mention that they came from a country where at that time very little use was made of spirituous liquors, which certainly by enfeebling the body shortens its duration, and this acquired weakness is manifestly transmitted to children.

MURRAIN,—BLACKLEG OR QUARTER EVIL,—BLAIN.

These diseases have a strong resemblance to each other, and may be accounted varieties of one disease; they are all contagious in a greater or lesser degree, the Murrain being a terrible Epidemic, at times spreading from country to country, and sweeping off the greater part of the Cattle. We have been informed by an eye witness that about the time of the battle of Austerlitz when great numbers of women and children were dying with hunger in the track of Bonaparte's "Glorious Wars," a pestilence broke out which swept off indiscriminately both men and cattle, making it very difficult to procure provisions for the army. For the three past years there has been a great loss of cattle, in England and Ireland by the Murrain.

These diseases at times prove suddenly fatal, but Youatt states that the Murrain is often preceded by a cough for a week or more—then follows heaving at the flanks, the dung black—tenderness along the back and particularly over the loins—the cough increases, with a brown or bloody discharge from the nose and mouth—blood passes with the dung—the beast staggers, and boils and swellings appear. If these go through the process of suppuration like common boils the animal may recover, otherwise death is certain. When disease comes on thus gradually there is time to try the effect of medicines, but they have almost always failed to do any good; bleeding followed by purging are recommended but we have no accounts that they have ever succeeded. We would recommend the trial of a strong decoction of the (*Lichen pulmonarius*) Maple Lungwort. Some cattle would readily eat it if moistened. It can be procured in large quantities in thick woods, chiefly growing on the White maple and Dogwood. The (*Lichen Caninus*) Ash colored ground Liverwort has done much service in the putrid sore throat, a malady greatly resembling these diseases of cattle, but it is not easy to procure any considerable quantity, and the Lungwort is always a sufficient substitute for it in curing coughs, only requiring a larger quantity, as it is somewhat less astringent.

The Quarter Evil appears to be the disease which has appeared here,—and here as well as in England, it appears to commence in some cases with mortification, causing death in a few hours, while in others there is a fever of several days continuance, and in some instances there is but little appearance of mortification, but in all cases the disease appears to be communicated by infection, not only to other horned cattle, but in numerous instances to horses and swine, there are persons who for many years have annually lost cattle by it, while most of their neighbors have escaped it. It certainly is highly probable that the infection had remained from the preceding year and prudence would dictate that great pains ought to be used to clean the stable where a beast has been affected with a distemper of this kind, and after cleaning it should be well fumigated with brimstone, aqua fortis, or chloride of lime. Many doubt if the disease is produced by infection because the greater part of the cattle exposed to it escape, but it should be remembered that there are various degrees of contagion, a very few escape the small pox when exposed to it; a greater number the measles and putrid sore throat; and far the greater part of those who are exposed to the slow fever miss taking it, except when it is much worse than usual. Yet all these diseases are infectious. At certain seasons of the year particular kinds of infection appear to be more easily taken than at others. We have known more than one instance in which a person was affected with the slow fever in a house where it had never been before; and for several succeeding

years it appeared in the same house in Autumn, although in some cases a different family had moved into it. The quarter evil here most frequently attacks young stock, and milk cows that are very highly fed. In England it has been found useful, when the disease appears, to remove all the cattle from low or rich pastures to dry hills where the feed is but short; and in some places in the States where the disease is frequent, it is believed that the practice of giving salt mixed with a little ash to the cattle is a sure preventative.

In these diseases when violent putrefaction appears to commence before death; in addition to the sudden mortifications, puffy swellings frequently appear, in which a crackling sound may be heard, indicating a decomposition of some part of the fluids. Caution should always be used in handling sores on these animals, or in skinning parts that are mortified; and as a fatal infection has been communicated to men who had slight scratches on their hands, it would be most prudent to bury animals that die of these diseases immediately without skinning them. It is supposed that the Murrain does not attack cattle who have once had it. Several cases were inoculated, had the disease and recovered; they were then put with a drove of infected cattle but did not again take the infection.

STRANGLES.

This disease does not generally attack all horses here as it does in Europe, but when it has appeared it has been more than commonly severe. It is a swelling near the centre of the channel under the jaw, which suppurates and breaks, discharges a quantity of matter, and quickly heals. A cough attended with "drawing" orropy matter from the mouth attends this complaint. Like the mumps, this disease never attacks the second time, and the greater part of the dangerous cases, are produced by attempts to scab the swelling, and prevent it from breaking.

In most cases it will not be necessary to do more than frequently wet the swelling with ointment of Marsh mallows, or goose grease, and to give the horse his drink by holding up a bucket to his nose while he swallows with difficulty; and also some mashes of scalded Bran: but should the swelling very soon produce difficulty in swallowing, a Blister should be laid on it; and in some rare cases that threaten suffocation it may be proper to burn it with a torch so as to produce the effect of a blister immediately; but the blistering ointment will soon take effect if the hair is clipped closely or shaved off, the skin then wetted with sharp vinegar, and the ointment thoroughly rubbed in. The ointment should be made by melting together one part of rosin and four of lard, to which one part (by weight) of powdered Spanish Flies should be added when it has cooled.

THE IVES, OR VIVES.

This is a swelling of the kernels under ears, affecting the swelling as much as the Strangles, and attended with cough, and often with fever, it generally wears off gradually without breaking. The horses head may be covered with a warm hood, and the swelling rubbed with oil, but no attempt should be made to scab it. Watergruel, and scalded bran may be given when the horse is willing to eat.

Sometimes when persons unacquainted with the disease, have succeeded in repelling the Strangles or the Ives, a different part of the body is attacked, and the swelling will form on the breast, the foot, or some other part, making an ulcer that discharges a great quantity of watery matter but will not heal, the horse continuing to lose flesh till he is completely exhausted. In a

few instances these irregular ulcers have come spontaneously, and, very rarely, while the Strangles are spreading a horse may be seen wasting away losing his flesh and strength without any visible cause.

In these cases some will be saved by giving every other day half an ounce of Antimony mixed with a quarter of an ounce of finely powdered Gum Guaiacum, and upon the alternate days a large spoonfull of flour of sulphur, and once a week, a spoonfull of salt.

LAMENESS.

In galloping a mare down a very stoney hill she was suddenly completely lamed in one hind leg, and continued so for three months, by which time the flesh had shrivelled away upon that hip and thigh; no part had ever swelled, nor could the Farriers ever decide where the lameness was seated. Many applications of different kinds had been used without effect. It had been decided to shoot her when one of the family proposed one more experiment. He commenced giving her daily a large spoonfull of Fir Balsam. In a week she began to throw a little weight upon the lame foot, and in the course of another week was nearly free from lameness, though still weak; but the flesh returned rapidly to the perished limb, and she soon became as useful as ever she had been.

Another mare with a simular lameness which had continued for about a month was cured by compelling her to draw poles with a drag. She could not be made to go more than half a mile in an hour, and was worked the first day for two hours; her working hours were daily increased, and the lameness continuing to abate, she was perfectly cured in a fortnight.

SALT MANURES.

We make so much use of salt to preserve meat, fish, butter, &c. that it is commonly supposed to act always as an antiseptic, or in other words to prevent putrefaction. If this were always the case, salt could never act as a manure by decomposing organic substances; but Sir John Pringles experiments have proved that while a large quantity of salt prevents putrefaction, a small quantity will accelerate it, nor is this the case with common salt only; a great proportion of caustic potash will dissolve animal substances, a smaller proportion will preserve them, and a much smaller will hasten their putrefaction. Salt in the proportion of one bushel to the acre was used long ago in the valley of Connecticut as a manure for flax, the practice was probably introduced by the first settlers of the low Dutch origin. If flax suffers with drought the hse or flax bears a small proportion to the woody part of the stem, but a small proportion of salt enables many plants to resist the effects of drought. If a large quantity of salt is applied to land one great crop will be produced, and the land will be rendered barren for several years. We have also seen land which had a considerable quantity of freshly cut rockweed ploughed in in August, but no crop sowed; for three following years it gave an inferior crop to that which grew on the adjoining land. It is difficult to make grass seeds or other small seeds vegetate on land that has been over salted, but large quantities of salt do not appear to injure the land if applied as late as November. It is usual when marshes are dyked to let them lie two or three years for the salt to be washed down, it being supposed that raising a crop in the salt soil will permanently injure the land. We should be happy to receive information on this subject, from those that have had experience on our newly dyked marshes. Rockweed and kelp when used for manure should either be applied in small quantities, or at intervals of several years, alternately with other manure as

lime is commonly used. Although the ground is always damp in the season that the salt manure is applied, yet on the following season there appears an unnatural dryness upon the surface. On the shores where too much rockweed has been applied without allowing the rains to wash out any of the salt, there are many gravelly fields which will still give crops of potatoes and oats but cannot be made to produce grass. Where Rockweed or kelp can be procured in great quantities, it should be thrown upon the shore in thin heaps in the fall to expose it to the winters rain, it may then be used in larger quantities without introducing too much salt into the soil. Some upland soils will produce great crops of grass, if top dressed with sea mud, or a mixture of sand and mud, but caution should be used as to the quantity, which should not be more than a fourth part of what would be required of stable manure, and it should not be repeated on the same land immediately but alternately with other manures. The same precautions are necessary in the use of night soil, which should always be applied sparingly. When manures are used which are apt to produce a rank vegetation, a portion of lime will improve the quality of some, and a portion of ashes that of nearly all crops, but they should be applied without mixing them with the other manure; for if either lime or ashes are mixed with the dung of animals or with decaying kelp or rockweed, they will immediately render volatile a portion of ammonia which will fly off and be lost. Better turnips have been raised by ploughing in a little rock weed, and then sprinkling leached ashes over the surface than could have been raised by using either kind of manure separately.

EARLY TURNIPS AND RADISHES.

If turnips and radishes are sowed before the frost is all out of the ground they will be up so early that the turnip flea will not injure them. If it should be wished to sow a small patch at any time between the 20th of May and the last of June, of course at the season in which they will be most exposed to the Flea; let them be sowed in drills, and covered by simply walking on the drills, stepping only the length of your foot; this will mark the situation of the drills, then cover the whole surface with any kind of seaweed, spreading it not quite so thick over the drills as elsewhere; this will prove a sufficient protection from the ground Flea, and will lessen the injury to the roots by the maggot fly. Where seaweed cannot be procured, rotten hay from the top of a stack, or straw, will answer for covering—a part of the ground should be indistinctly visible on the drills.

We shall be obliged to defer the publication of the Lectures from Gay's River for a time, as we had already commenced the publication of a communication from Pictou upon the same subject, a subject which we cannot venture to obtrude too fast upon our readers, because it is at present less generally understood than (we hope) it will be hereafter; but the intelligent farmer must certainly be benefited by understanding the principles of his work so far as they have been discovered, as much as the manufacturer has been. In the art of dying the expence and labor has been greatly reduced by the discoveries of the Chemist Barthollet (one of natures great men) and others.

DARTMOUTH AGRICULTURAL SOCIETY.

At the half yearly Meeting of the Dartmouth Agricultural Society held on Saturday the 11th inst. the following Resolutions were passed:—

1. That in giving premiums for male specimens of Live Stock, it shall be sufficient if the person offering any animal has had it in

his possession six months, and will give bonds to keep it possession twelve months afterwards.

2. That Boars be an exception to the above rule, and it will be sufficient to have them in possession for six months before the competition.

3. That all specimens of the female stock shall be bred and raised by a member of the Society.

4. That when only one specimen of any kind of stock or produce is offered in competition, the person so offering it shall be entitled to the premium, although the article be of inferior quality.

5. That no member be allowed to compete for any premium offered by the Society, who has not paid his subscription before the first day of July next:—and in future years, no person shall be entitled to compete for any premium who has not paid his subscription before the first day of April.

The following list of Premiums for the present year was then adopted:

For the best bull.....	£2	10	0
For the best ram from 6 months to 3 years old.....	1	0	0
For the best heifer from 2 to 3 years old.....	2	0	0
For the best heifer from 1 to 2 years old.....	1	0	0
For the best breeding ewe under 4 years old.....	1	0	0
For the best boar from 6 months to 3 years old.....	1	0	0
For the best ewe lamb this year's growth.....	0	15	0
For the best breeding sow.....	1	10	0
For the best ram lamb of this year's growth.....	0	10	0

NOTE.—The following articles are to be raised by members of the Society and competed for by them only, and they are to be exhibited in the same manner as last year.

For the best 5 bushels of wheat.....	1	10	0
For the second best 5 bushels ditto.....	1	0	0
For the third best 5 bushels ditto.....	0	15	0
(The Society to be bound to take the best and second best samples at 10s. per bushel.).....	5	0	0
For the best 5 bushels oats.....	1	0	0
For the second best 5 bushels ditto.....	0	15	0
(The Society bound to take the 10 bush. oats at 4s.).....	2	0	0
For the fattest and heaviest dead hog.....	1	0	0
For the fattest and heaviest live hog.....	1	0	0
For the best half acre of potatoes.....	2	0	0
For the second best half acre of potatoes.....	1	0	0
For the best quarter acre of Swedish turnips.....	2	0	0
For the second best quarter acre of Swedish turnips.....	1	0	0

NOTE.—The following articles are to be manufactured by any person within the district:—

For the best 8 yards coloured homespun cloth (all wool) not less than $\frac{1}{2}$ wide.....	1	0	0
For the best 8 yards ditto (cotton and wool) not less than $\frac{1}{2}$ wide.....	0	15	0
For not less than 30 lb of cheese, in 3 cheeses.....	0	15	0
(The Society to take cheese at 9d. per lb.).....	1	2	6
For the best 20 lb butter, a premium of 6d. $\frac{1}{2}$ lb.....	0	10	0
(The Society to take the butter at 1s 3d.).....	1	5	0
For Premiums at the Ploughing Match.....	7	15	0

£44 12 6

Resolved.—That the Ploughing Match for the present year, be regulated by the Committee; and that the same Prizes be given as were given last year.

First Premium.....	£2	10	0
Second do.	2	0	0
Third do.	1	10	0
Fourth do.	1	0	0
Fifth do.	0	15	0

£7 15 0

A. JAMES, Secretary.

Dartmouth, March 3, 1843.

APPETITE.—A relish bestowed upon the poorer classes that they may like what they eat; while it is seldom enjoyed by the rich because they eat what they like.

For the Colonial Farmer.

ELEMENTS OF AGRICULTURAL CHEMISTRY AND GEOLOGY.

[Continued from Number 16.]

COMPOUNDS OF THE ORGANIC ELEMENTS.

In our last paper, we noticed the four simple substances which constitute the Organic parts of plants, and concluded with naming several compounds of these which are found in nature, and may furnish food to vegetation. These compounds of the organic elements may now be considered in detail.

1. *Atmospheric Air.*—The air which we breathe, and which every where invests the surface of our earth, consists of an intimate mixture of two of the simple bodies before described, oxygen and nitrogen, in proportion of 23 parts by weight of the former to 77 of the latter. From the account before given of oxygen, it is evident that its effects on the blood of animals, and on decay and combustion, are by far too stimulating and active to permit the continuance of the present order of nature, if it alone constituted the atmosphere; while on the other hand no animal could breathe, or plant grow, if surrounded by unmixed nitrogen. Our atmosphere has therefore been wisely composed of a mixture of these two substances, in such proportion that all necessary processes, whether chemical or vital, may derive from it neither more or less support and stimulus than that which they really require.

As the air consists of oxygen and nitrogen, two of the constituents of plants, and as it surrounds on every side their stems and leaves, and even penetrates deeply into the earth around their roots, we might naturally suppose that it affords part of their nourishment. Experiment however, appears to show that plants derive little food *directly* from the air, though it certainly acts an important part in producing and carrying to them, other nutritious substances. To its influence in this way, we shall hereafter have occasion so frequently to refer, that at present it need not be further noticed.

2. *Water.*—Is a substance indispensable to vegetation, and which ministers to it in various ways:—

1st, *Water* serves as food to plants. In all growing plants water is contained in an unaltered state, and its presence in this state is absolutely necessary to their growth. But water is a compound of oxygen and hydrogen, so that, if vegetables are able to decompose it, they will thereby obtain two of their constituted elements. That they can do so, has been shown by cultivating plants in close vessels, with their roots immersed in water, when it has been found that the plants so treated, acquired an increase of weight which could only be accounted for by supposing, that they had employed part of the water in the formation of wood, and other parts of their own structures. It is even possible that water may thus be rendered solid in the interior of plants, without any actual separation of its elements, for wood, starch, sugar and gum substances which enter largely into the structures of plants, contain oxygen and hydrogen exactly in the proportion in which they exist in water, so that we may consider starch and sugar as consisting of water and charcoal alone; a view which will cease to appear extraordinary, when we consider the great changes of appearance and properties, which always accompany chemical combination. From these and other considerations, which will appear as we proceed, it seems probable that water affords to plants the greater part of the hydrogen which they possess, and probably also a portion of their oxygen.

* T. De Saussure.

2nd. Water acts as the vehicle by which other nutritious substances are conveyed to plants. It is well known that a vast number of substances may be dissolved in water; the water therefore which is constantly entering the roots of plants, brings with it a portion of every soluble ingredient of the soil. When exposed to the air, water absorbs from it carbonic acid, ammonia and other gases, beneficial to vegetation. Hence the rains and surface waters always contain these substances, and carry them along with them when they enter into the roots. Even snow brings down from the atmosphere, several nutritious substances, so that the common opinion that it assists in fertilizing the land, on which it falls and is dissolved, is not unfounded.*

3rd. Certain substances, often present in soils, have strong affinities for water, or tend powerfully to unite with it. Thus if upon quicklime a proper proportion of water be poured, the lime still remains dry, but expands and becomes warm, while, at the same time, it increases in weight to the amount of one third. The reason of this is that the water has combined with the lime, and become dry and solid. In like manner, common gypsum contains 21 per cent of water in a solid state, and both these substances may, in certain circumstances, yield up this water for the use of plants. Common clay also retains water with a firm hold, and even in the driest weather, may retain enough to keep plants green and flourishing when soils deficient in clay are completely withered.

Although water is thus essential to the growth of plants, its presence in too great quantity, is in various ways injurious to those which are usually cultivated. One of these is that when the soil is soaked with water, air is prevented from entering it, and we afterwards see that this is of some consequence. Another is that too much moisture imparts what is very properly named coldness to a soil. If a dish of water be exposed to the air, it gradually evaporates or dries up, and that it may thus pass into the state of invisible vapour, the water must obtain a large supply of heat, hence arises the chilling influence of wet clothes, when applied to the body. The same effect is produced by the superfluous water of a wet soil; nearly all the heat which such a soil receives from the sun, is spent in evaporating the water, and if this be not removed by draining, or enabled to soak downward, by the addition of some less retentive substance to the soil, the crops on such a field, will always be liable to be chilled and stunted in spring, to a degree which even the heat of summer may be insufficient to repair.

The evaporation of water however, like every other practical process, is of the highest utility. To it we owe the refreshing and fertilizing rain, and the kind covering of snow which protects our fields from the intensity of the frosts in winter. Its reaction on plants are so important and so beautifully adapted to the purposes which they serve, that no apology will be necessary for devoting a little time to their consideration.

It was before stated that heat is necessary for the evaporation of water, and when this heat is again removed from the invisible vapour thus produced, it is again reduced to the state of water. Thus, if in summer a pitcher of cold water be placed upon a table for a short time the outside of the vessel becomes moist or covered with globules of water. This shows that the air always contains a vapour of water, and that this vapour, when it touches a cold body, is reduced to the fluid state. These simple facts will enable us to understand the general causes of *Dew* and *Rain*,

* For some admirable remarks on this use of water, see *Agricola* manufactures.

In clear weather, the earth's surface and the air in contact with it, are warmed by the rays of the sun. But every warm body has a tendency to radiate or send forth its heat, until it becomes as cold as the surrounding objects. After sunset therefore, the earth's surface rapidly cools, until, at length, it becomes so cold that the vapour of the air in contact with it, becomes condensed in the form of dew, or if the cold be more intense, in that of hoar frost. But different substances, when allowed to cool, lose their heat with different degrees of rapidity; and of course, those which cool most quickly and thoroughly, must collect the greater quantity of water from the air. This property also forms the basis of an arrangement beneficial to vegetation; for grass and other herbage, radiate their heat more rapidly than most other bodies; and hence, "in the cool of a summer's evening, the grass plot is wet when the gravel walk is dry; and the thirsty pasture and every green leaf, are drinking in the descending moisture, while the naked land and the barren highway are unconscious of its fall."

When the sky is covered with clouds, these restore to the ground the heat which it loses by radiation; and when the air is agitated by warm winds, its vapour is prevented from being sufficiently cooled for condensation, hence in cloudy and windy nights, there is no dew.*

Other causes may condense vapour at various heights in the air. Moist and warm air ascending from the earth's surface, and entering cooler regions, will begin to relinquish the moisture which it contains; and a cloud will be formed which may either descend in rain, or be wafted to some distant locality. The more usual explanation of the formation of clouds, is founded on the fact, that if two equal portions of air differently heated, and both containing as much vapour as they can retain, are mixed, the temperature of the mixture will be the mean of that of the two portions of air; but this intermediate temperature will not be sufficient to maintain, in the state of vapour, all the water of both portions, and consequently water must be deposited. When therefore in our atmosphere, a current of warm air becomes intermixed with one that is colder, a quantity of fog, mist or cloud is produced, proportional to the excess of the watery vapour contained in both currents, above the quantity which they can retain, when mixed. Lastly, Electricity, whose agency is so common in the atmosphere, acts, in ways not yet well understood, in accumulating clouds, and precipitating their contents to the earth in the form of rain, or, more rarely, as destructive showers of hail.

3 *Carbonic Oxide and Carbonic Acid*—are both compounds of carbon and oxygen, the former in the proportion of 6 carbon to 8 oxygen, and the latter in the proportion of 6 carbon to 16 oxygen. Carbonic oxide, when it occurs in nature, usually accompanies carbonic acid, but is less abundant; and as its operation on plants

* The early frosts of autumn depend on causes similar to those of dew. In autumn plants are cooled to a temperature below the freezing point, by the radiation which takes place during a clear night; in such cases a very slight covering, even a thin cloth, may impede radiation, and save a plant; and exposure to a slight current of air or even facing a cloudy spot of the sky, may save particular parts of a field.

† This is an example of another chemical law; viz. that when bodies combine in more than one proportion, these proportions are multiples of one another. Thus carb. acid contains twice as much oxygen as carb. oxide. On this is founded a useful method of expressing the composition of bodies. 6 carbon is considered as equivalent to 8 oxygen, and both are made equal to 1; so that carb. oxide may be written C 1, O 1, and carb. acid, C 1 O 2, or more shortly Co and Co 2. This system may be extended to all combinations, and its accuracy depends on the law of multiple proportions before stated.

must be similar we may at present confine ourselves to the latter substance. Carbonic acid is a gas, a little more than one half heavier than common air; it speedily suffocates animals, when obliged to inhale it, and it extinguishes flame. Like the other substances known to Chemists as *Acids*, it reddens vegetable blue colours, has a sour taste, and is capable of combining with earths such as lime, and with *alkalies* such as potash and soda.

Two of the modes in which carbonic acid is produced in nature, were mentioned under the head carbon; but it may be formed in many other ways. It exists in large quantity in limestone and other rocks, and is given out by volcanoes, and brought to the surface by springs; it is also sometimes disengaged from fissures &c. in mines, and accumulates in deep cellars, wells, &c., forming the "choke damp" which occasionally proves fatal to persons incautiously entering such places. When wool, straw or similar substances, are exposed to air and moisture, a kind of slow combustion, which we call decay, commences; part of their carbon and hydrogen combine with the oxygen of the air, and form carbonic acid, and water, until at length nothing remains but a coaly mass capable of little further change.

In consequence of these processes, it is evident that carbonic acid must be constantly produced and added to the atmosphere; and, if this proceeded unchecked, it would at length accumulate in so great quantity, that animal life would be destroyed. But it is found that the quantity of carbonic acid in the air, does not exceed the one thousandth part of its weight, and is not increasing. It is also known that water is capable of dissolving more than its own bulk of carbonic acid, and consequently that rain and surface water are always impregnated with it; and it is found, by experiment, that plants, supplied with the air and water containing this gas, apply its carbon to the production of wood and other vegetable products. It thus appears that the carbonic acid produced by burning, breathing, decay and other processes, and which would otherwise contaminate the atmosphere, is by the wise arrangement of a beneficent Providence, made a source of supplying the most valuable substances which the earth affords to man.

4. *Carbureted Hydrogen*,—as its name imports, is a combination of carbon and hydrogen (C H 2). It is a colourless gas, less than one half as heavy as common air; it is incapable of supporting respiration or combustion, but when flame is applied to it, burns with a yellowish light, or if mixed with air or oxygen, violently explodes. It is abundantly disengaged from beds of bituminous coal, and is the cause of the frequent destructive explosions in coal mines. It is given off from swamps and stagnant puddles, and generally from all places where vegetable matter is putrefying in fresh water. While organic matters become putrid in sea water, they decompose the sulphates of soda and magnesia (Glauber and Epsom salts), always present in such water, and *Sulphureted Hydrogen* is produced; this gas is the cause of the offensive smell of the mud of creeks and estuaries.

Both these substances may assist in nourishing the rank vegetation of swamps, but in the small quantity in which they exist in the air, or in the soil of cultivated fields, their influence on crops can be but trifling.

(To be continued.)

CURE FOR WARTS IN HORSES AND CATTLE.—A valued friend, of great experience in horses and cattle, and who has imported and bred many of the best in the United States, says that a strong wash made of pearlsh and water, applied thrice a day, will remove tumors and warts.—*Canada British American Cultivator.*

From the Farmer's Gazette.

COMPARATIVE ADVANTAGES BETWEEN CONNECTICUT AND WESTERN FARMING.

Mr. Editor.—We frequently hear men of intelligence and judgment express a wish for emigrating to the far West to better their condition, by purchasing a wide domain of cheap land to enable them to live at ease, and at their demise to leave a large, and they propose, a princely inheritance to their children, imagining from various exaggerated reports of interested individuals, and of travelled inexperience or ignorance, that such lands are like the promised inheritance of old, "flowing with milk and honey," having been a seven years' resident in the West, and seen a good portion of the country and people, you will pardon me the vanity of supposing that I am able to give a word of advice to those who are dissatisfied with the poor, thin and arid soils of these our Eastern states.

The first cause of dissatisfaction is the unproductive state of the worn out old lands, worn out by injudicious and improvident culture; then we hear of the great fertility of the western paradise where lands can be had for an old song, producing without labor or manure, incredible crops of Corn, Grain and Grass, on which to feed innumerable herds of Cattle, Sheep and Swine; also wild game, such as Deer, Turkeys, Grouse, Pheasants, Quails, &c. &c. without the trouble of catching; now this is in part true, but yet remains doubtful in my mind whether it would not be much wiser to try to improve, by all proper means, the limited possessions we possess, than fly to the lands of fertile promise in the wilderness. I will premise that our domicile is at or near the village of our birth, education and manhood, surrounded by our kindred and friends, with all the early associations and endearments of youth and christian communion; our next advantage is the proximity to markets; and last though not the least, of seminaries for the diffusion of intellectual, moral and religious instruction of rising generation. After coolly weighing these several advantages, and you still are determined to sell your patrimony, then go to the West, and be prepared to experience a change, not for the better but infinitely to the contrary; if you select wild lands in an unpeopled wilderness, far from the busy haunts of men, as business cheap, experience teaches that for years you must buffet with the roughs of the country, scanty and poor fare, loss of health, relatives and friends. And even when you have realized a residence to live in you may no longer require one, a premature grave being your only inheritance, and may even expect to see those very children for whom you have toiled with so much anxious care, swept off before you by the malaria of the country; but should you succeed in outliving those evils, and your home become healthy, with an increase of society and social enjoyment, then comes the calculation of advantages of this great change. You have cleared, at much labor, a few acres of your many hundreds, which prove productive even surpassing your most sanguine expectations, and you have a surplus of produce for sale, the next thing is where is your market? I answer, it is with the nearest store-keeper, who will pay you a price in cash, but in such articles as you do not want and even of doubtful character. To show you that this is not an imaginary go with me to Columbus, a city the seat of Government in Ohio, and there offer your surplus corn for sale, the price 12 1/2 cts. per bushel, store pay 1 that is, whiskey, (that bane of society) at 12 1/2 cts. per gallon, or cotton goods of inferior quality, double their value,—no Tea, Coffee, Sugar, or articles of necessity,—then the articles of produce, such as Pork, at \$1 to \$1 1/2 per hundred pounds; Wheat 37 1/2 to 40 cts. per bushel, Clover \$3 per bushel, Fowls 6 1/2 cts., Ducks the same, Turkeys, 15 to 20 cts., butter 6 1/2 cts. per lb., and other produce in proportion. Now these are city prices, when the roads to market are good, but in a wild part of the country the roads are equally wild, and stores proportionably few, and bad markets.

Thus you will see that the best lands, yielding 70 to 80 bushels of Corn to the acre, are not so good, and will not yield equal produce with our poor worn out soils of Connecticut, producing 25 to 30 bushels. And were these poor lands improved by laying out upon them the cost of reclaiming the western wilds, I have no doubt they might be made to yield from 50 to 80 bushels to the acre with quadruple prices and ready market. Again should you require assistance to clear the lands, put in and harvest your crop, you will with great difficulty procure help at a higher rate of wages than paid in this State, as almost every man who is able and willing to work prefers doing so on his own account where he

to cheap; and those who are too improvident to save their wages to purchase land, will occasionally work a day or two, generally to earn as much as will procure intoxication for the rest of the week: this can be done at a small expense to the pocket, whatever it may be to the individual either in morals health or character.

Thus you will see little to be gained by a change from a social state of society to a state of savage wildness, where we may exclaim with the poet—

"But the sound of a church-going bell,
These valleys and rocks never heard;
Never sighed at the sound of a knell,
Or smiled when a Sabbath appeared."

To conclude we will draw a comparison between the profit of a acre of Corn in the two States of Ohio and Connecticut.

Connecticut.—Cost of one acre fair quality of land \$50.

Plowing planting and seed	\$3.50
Manure \$6, hoeing, &c. \$3,	9 00
Harvesting,	4 00
Interest on value,	3 00
	<hr/>
Yield 50 bush. at 60 cts. is	\$30.00
Fodder, about	5,00
	<hr/>
Profit,	\$15.50

Ohio.—Cost of 1 acre wild land, \$1.25
Clearing, fencing, &c., 35 09

\$30.25

Plowing, Planting, &c.,	\$3.50
Cultivating with shovel, plow, &c.,	2.00
Harvesting, husked in the field,	2.00
Interest on value,	2 18
	<hr/>
Yield 60 bushels at 15 cts.,	\$12.00
Fodder of no value,	00.00
	<hr/>
Profit in Store pay,	\$2 32

Leaving a balance in favor of home—sweet home.

A man with a large family may eat and drink at small cost, as the articles of produce are cheap; and if we could dispense with the usual comforts of life the backwoodsman might do tolerably well—but if you want Tea, Coffee, Sugar, Spices and Clothing, you will find the prices high, and the quality low enough.

With much esteem I remain

Your friend,

T. W.

Hamden 10th January, 1843.

From the New England Farmer.

LINSEED OIL FOR FATTENING CATTLE,

MR. PUTMAN—Dear Sir—I observed in your paper of the 11th some extracts from a Scotch work on farming, among others, an article on *linseed oil* as a fattening food for cattle—giving it the preference to other articles. I have since referred to some of my own memoranda of farming in 1816. In Monk's Agricultural Dictionary, it states that 5 galls. of linseed oil (raw) will fat a cow sooner than five pounds sterling in any other way. Having at that period been greatly taken in in the purchase of an expensive, large-sized cow, I dried her up at pasture, and early in the autumn determined she should be fatted on oil. I ordered 1 pint to be well mixed in half a bushel of wheat bran, to be for one day's food, with such hay as she would eat. She refused absolutely to eat until the *third day* after which she came to and became fond of it, and in one week we could perceive she was gaining daily. After using 5 gallons I purchased 2 more. I then for a fortnight gave her indian meal in lieu of oil. I then offered her to the butchers in my vicinity: they all examined and declared her uncommonly well fatted, but as she had been fatted on they were afraid the meat would not be good. Finally one butcher gave me \$9 per 100 lbs.; (she weighed 798 lbs.) I never finer looking meat, and the purchaser several times afterwards when his customers often spoke of the superiority of that beef knowing it had been oil fed.

One or two years after that I fatted a yoke of oxen. One I fed on oil, the other on meal and vegetables. They were very fat, and I fully thought the oil fed one did not cost half as much to fatten as the one on meal and vegetables. I sold them to an English butcher to carry to Halifax, from whence for one or two years afterwards, I heard of the superiority of the meat of those animals. The purchaser told me that in England they fed much on oil cake, and said he should, before slaughtering the oil fed one, for a week or ten days, bleed once or twice, as customary here with calves.

I have not fatted any beef animal since, or I should have adopted the oil plan. I have frequently spoken of it but have never heard of its being tried since. The oil appeared to frighten the folks for which I am confident there is no cause.

Very truly, yours,

J. PRINCE.

Jamaica Plain, 30th January, 1843.

CULTIVATION OF THE CRANBERRY.

We have had several inquiries in relation to the cultivation of this fruit, the demand for which is rapidly increasing in our markets. Few things are more easily grown than the cranberry, and the cultivation is very simple. Nothing more seems necessary than bog or peat earth; if the bogs are sandy, so much the better, but too much wet is fatal to the hopes of an abundant crop. On the sandy coasts of Massachusetts, where wet bogs or meadows abound, the cultivation of the cranberry is increasing, and pieces of ground hitherto of no value, now yield handsome incomes. It is found they grow well on these sandy bogs after draining, and the following is stated to be the method pursued by Mr. Hall, of Barnstable, who has for some time produced them in large quantities:

"If the bogs are covered with brush, it is removed, but it is not necessary to remove the rushes, as the strong roots of the cranberry soon overpower them. It would be well, if previous to planting, the ground could be plowed; but Capt. Hall usually spreads on beach sand, and digs holes four feet assunder each way, the same as for corn; the holes are, however, deeper. Into these holes sods of cranberry roots are planted, and in the space of three years the whole ground is covered."

Mr. Kenrick remarks, that "although a moist soil is best suited to the plant, yet, with a suitable mixture of bog earth, it will flourish, producing abundant crops, even in dry soil."

Loudon asserts that Sir J. Banks, who obtained this plant from America, raised in 1831, on a square of 18 feet each way, three and a half bushels, equal to 460 bushels per acre. Any man who has a bog swamp, may raise cranberries, by draining it so that the surface at least shall be dry, either inverting the surface, if hard enough, with a plow, or covering it with sand, and planting as above directed. When well set, the yield of an acre will not be much if any, short of 200 bushels.—*Albany Cult.*

ON WINTER MANAGEMENT OF SHEEP.

MR. COLMAN—I think, so far as I have observed, with regard to the management of sheep during the winter season by many farmers, that there is room for some little improvement as to the manner in which they are protected from storms, and also the manner in which they are fed. Perhaps I cannot better give my views of the treatment of sheep in winter, than by sending you a short statement of my own practice upon this subject for a number of years past. My custom has been to provide comfortable shelter for them, where they can be well protected from storms, separating the lambs and weaker sheep from the older and stronger ones, and putting them into a yard by themselves, provided with feeding troughs, in which they are fed half a gill of corn or peas per sheep daily, and with hay once a day, but no more than they will eat up clean; and then they are fed on straw through the day. The old sheep are fed one gill of corn or peas each, daily, without any hay, giving what straw they can eat. I have generally commenced feeding grain by the middle of December, and continued to feed until about the first of April. I am satisfied by comparing my sheep with other flocks of about equal number, in the spring, that it is not only better for the sheep than to winter on hay without grain, but much cheaper. It will be perceived that the amount of grain consumed by each sheep, if fed one hundred and twenty days, would be less than half a bushel; the cost of which would be all that the farmer would feel, and in fact, all the expense there is, save the time of feeding; for straw when brought into the shape

of manure by sheep, I consider worth more than in any other state, as there is no other animal that makes it so fine and evenly with animal manure, to be applied to land in a long and unincumbered state.

Salt should be given regularly once a week, which conduces much to the health of sheep. I seldom lose a sheep from my flock during the winter, which I attribute to good sheltering and regular feeding. If some farmers should not like to be at the trouble of feeding threshed grain to their sheep, I would recommend feeding peas in the vine, as I have seen it practised with good success.

It would appear that there is very little diversity of opinion in most parts of the country, with regard to sheltering sheep in winter, as they are seldom provided with any, except that they can find by shifting from one part to another of a stack pen, placed upon the most bleak and windy place on a farm, or changing their quarters from one side to another of a barn without either shed or hovel attached to it, to protect them from the peltings of a storm as pitiless as their owner. The merciful man will be merciful unto his beasts.—*Correspondent of the New Geneva Farmer.*

DIGNITY AND INDEPENDENCE OF A FARMER'S LIFE.

We make the following extracts from Dr. Knapp's address delivered before the Union (Ill.) Agricultural Society.

And how can the scientific agriculturist fail of being a devout philosopher! He is intimately associated with Providence in the work of production. Day unto day he is a co-operator with the productive agency of Nature, and while his hand lays hold of the plough, his mind soars aloft to the contemplation of the attributes of Deity. He remembers the covenant bow, and relies in the promise that "seed time and harvest shall not fail." And there is a sense of permanence—a feeling of stability and independence,—which the man of acres is conscious of, above other men, as he stands upon his own ground, plants his staff firmly in the soil, and knows that his domain reaches to the firmament above him and to the centre of the earth beneath. His feelings and affections are preserved fresh and uncontaminated, from his intimate associations with Nature.—the verdant grass, the waving grain, the cooling shade and the running waters have a life with them—flocks and herds, dependant on his care and conscious of his kindness, are bound to his heart by a sort of household sympathy;—and it is his own fault, not the fault of his vocation, if he incline to be a vegetable or an animal because his intercourse is with such. It is his high prerogative to elevate every thing about him, not to be reduced to the measure of an inferior grade. Instead of becoming himself a clod, he may reanimate nature with new life, by imparting of his spirit to quicken her own. The present age is bringing to light in the agricultural ranks many such intellectual and high moral specimens of human nature, who are contributing both by precept and example, to raise agriculture to its proper rank of a scientific pursuit.—men of taste and talents, who retiring from the more crowding cares of other pursuits, and particularly the vexatious plagues of political life, find useful employments, sufficient wealth and delightful enjoyment in agricultural concerns.

And here let me observe, that I have taken notice that a considerable portion of the theme of most agricultural addresses consists in deploring and lamenting the want of rank and respectability in the agricultural profession. For one, I never can admit the premises. I can never subscribe to the doctrine that the distribution of wealth is more respectable than its production—that the business of buying and selling a product is more exalted or more intellectual than the creation of that product. I never can agree that the doctor, who exchanges his immaterial product for your five dollars, when he visits you, feels your pulse, looks at your tongue, procribes an emetic and cures you of surfeit; or the lawyer who exchanges also an immaterial product in the shape of legal advice or a whit more respectable than the farmer of like intelligence, who rears the fine horse the doctor rides, and the fat-tailed bullock the lawyer feeds up. Intellectually, the farming profession seems to me to have the advantage in rank; education, manners, and general intelligence being equal. Less of temptation, less of vice, less of advantage-taking, less of the tricks of the world attached to the profession. And if we cannot find virtue and moral purity here, where in the ranks of mankind shall we look for it?

If, then, farmers, as a class, are unable to hold rank in the circles of society, it is not owing to the want of respectability in their calling, but to the want of a high order of intelligence and polished manners. Education and good manners will carry any man to the same station of respectability, where he may more and more at ease, and the fact of his being an agriculturist will but confirm my opinion, to gain him a precedence there. There is a pure knowledge, a concealed power in the cultivated mind, that elicits universal homage wherever found; and there is a charm in conversing, that leads captive the human heart, and were these qualities generally found among agriculturists, is it not plain that agriculture would stand at the very pinnacle of respectability.

Blaikie's Portable Threshing Machine.

Worked with two, three, or four horses at pleasure.

THE SUBSCRIBER begs to intimate to the Agricultural community throughout Nova Scotia, and the adjoining Colonies, that he is prepared to receive orders for making *Threshing Machines*, either portable or stationary. He believes that he is justified in stating that his machines are equal in speed, if superior to any now in use in the Colonies, or in the United States. With two horses, his machine will thresh 25 bushels of wheat per hour, and a fourth more for every additional horse, when the grain is in fair working condition. With two horses it will thresh bushels of oats per hour, and a fourth more for every additional horse. The horses move in a circle of 25 feet in diameter, at the rate of 2½ to 3 miles per hour, and can work during the full day without fatigue. The portable machines can be removed from one barn to another with ease,—are easily erected and put in operation, and are rarely subject to get out of order. From the price at which they are made, and the rapid sale they have already received, wherever they have been tried, he has reason to believe that they only require to be known to come into extensive use.

Letters addressed (post paid or free) to the manufacturer, or the editor of the *Mechanic & Farmer*, will receive every attention. THOMAS BLAIKIE

Green Hill, West River, February 1.

CERTIFICATES.

This is to certify that in December, 1841, I purchased of Mr. Thomas Blaikie's *Stationary Threshing Machine*, and since that time by the great saving of time and labour resulting from the use of it, it has amply repaid me for the use of it. I therefore confidently recommend these machines to every farmer who may require such an article; and will venture to assure every person that if they purchase one they will never have reason to regret it, as an unprofitable investment of capital.

GEORGE McDONALD

West River, January, 1843.

Having worked for some time with one of Mr Blaikie's *Threshing Machines*, with moving horse power, would recommend a superior article, and are certain, that no farmer could make a better investment than to supply himself with a machine of this kind.

SAMUEL FRASER
JOHN FRASER.

New Glasgow, January 3, 1843.

I have had Messrs. Frasers *Threshing Machine*, made by Thomas Blaikie, threshing for me two or three days, and found to surpass my expectations. It done the work well, and thrice clean; and I would recommend it as a very superior article, as regards saving of labour and grain.

B. L. KIRKPATRICK

New Glasgow, January 3, 1843.

Having witnessed the *Threshing Apparatus*, made by Mr. Thomas Blaikie, in full operation, I give it as my decided opinion that it far exceeds, in usefulness, and saving of labour, any other of a similar nature which has come under my observation, and it is preferable to any other kind used in the Province.

JAMES CARMICHAEL

New Glasgow, January 3, 1843.

"THE COLONIAL FARMER,"

TITUS SMITH, EDITOR; R. NUGENT, PROPRIETOR,
Is published semi monthly at the Novascotian Office, Halifax.

TERMS—One copy, 5s., Six copies, 25s., Twelve copies, 45s., Twenty five copies, 100s. per annum—in all cases in advance.