

# WISCONSIN & IOWA FARMER, AND NORTHWESTERN CULTIVATOR.

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MARK MILLER.

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## Manure—Its Value to Western Farmers.

Few things more certainly evince the farmer's knowledge of his calling than his management of the manure which either naturally accumulates about his premises, or which he forms by artificial means. The farmer who has a just appreciation of the wants of his different soils for the various crops which he designs to cultivate, or who knows the value of the ingredients contained originally in his farm-yard manure, is careful to see that there is no waste of it about his premises. Nothing, perhaps, strikes an eastern farmer with more surprise, on visiting the west, than the manifest want of a due estimation of the worth of farm yard and stable manure. Hundreds of instances may be found in Wisconsin and Northern Illinois, which have fallen under our own eye, where this kind of fertilizer is suffered to accumulate from year to year undisturbed, "to waste its sweetness on the desert air." We have seen instances where the farmer (?) had moved his cow-yard to some new place, simply to get out of the way of the accumulated manure. In other instances

they have carted it to the rivers and ravines, that it might be carried as far as possible from their domains, as they would, and generally do, a dead dog or cat or other carcass. Now the truth is, this manner of proceeding is too literally and too irreverently, that is to say,—not worshipfully—"casting their bread upon the waters," never to "find" it again, even "after many days" of hard labor. Says the PROGRESSIVE FARMER, "good farming always tends to better;" and on no point is this more strikingly true, than in the care and application of manures. A load of manure well applied, not only produces a greater crop this year, but that extra crop produces more manure next year, and that extra manure produces a greater crop the year after, and so on indefinitely." Now if this be true, and who in his senses can doubt it, the reverse process must be equally true; the crops and the amount of manure, and we may add, the amount of cash, are all rapidly diminishing, till there will not be enough of the home-stead left to pay the taxes. The farmer should not study to avoid labor, but to make labor pay well; and nothing pays better, literally hands over the clean cash, than the labor of saving manure—of increasing instead of diminishing its quantity, and improving its quality. There is nothing makes the farm shine like it, and nothing, either, will bring the shiners like it. We hear a great deal about foreign manures—about guano, Peruvian, Bolivian, African, and Artificial, by Potter, Hunt, Boost and Gregory; about bones and bone-dust, about phosphates of lime, and super-phosphates of lime; about oil-cake and rape-cake; about woolen rags by ragged Wooleys; this is all very

well, but after all, the farmer's great resource must be *at home*. We go for home consumption. *Our farmers must be made to enrich themselves and to keep themselves enriched.* To do this, every man, woman and child, throughout the whole animal establishment, must be put under tribute. The barn-yard, the hog-yard, the sheep-yard, the pig-pen, the out-house, the sink-drains, and the road washings, all must contribute their quota. Upon the best way of doing this we shall have to speak at another time. The thing to be remembered is, suffer no manure to be wasted about your premises. †

For the Wisconsin & Iowa Farmer.

### French and Spanish Merino Sheep.

MR. MILLER:—Some western friend has the kindness to send me your valuable paper, the Wisconsin Farmer, which is well worth the attention of the farming community. As agriculture and stock raising has always been my theme, from earliest youth to the present time, I seek all opportunities to gain information upon that subject. I have been engaged in breeding sheep for about twenty years. I commenced breeding from a flock of pure blooded Spanish Merino ewes, and have improved upon them from the best blood, this side of the Atlantic. In 1847, I purchased of Mr. Taintor of Hartford, Conn., a number of his imported French Merino Sheep, which I found to be superior to any thing that I had ever seen in size, constitution, and weight of fleece. I crossed them with my Spanish Merinos, and found that the cross, thus produced, would be a benefit to the wool-growing community.

Since that time I have dealt quite extensively in French Sheep. I have purchased sheep from every importation that Mr. Taintor has made, excepting one or two, and am engaged in breeding both full and half blooded French, &c. I think my flock, at present, inferior to none in America.

I have proposed to some of your western farmers to attend your State Fair this fall, and exhibit a few full and half blooded French Sheep, and be ready to supply your breeders with a few superior imported stock bucks.

MERRILL BINGHAM.

West Cornwall, Vt., Aug., 1853.

MR. BINGHAM enjoys an enviable reputation as a breeder of ~~fine~~ sheep, and the farmers of the west (especially those who are engaged in the same business,) will be pleased to have an opportunity of seeing some of his choice stock at our next State Fair. [Ed.]

For the Wisconsin & Iowa Farmer.

FRIEND MILLER:—As there has been considerable said in your paper, relative to different breeds of hogs, I will state for the benefit of your numerous readers, that Mr. S. B. Edwards, of this place, who took the 1st premium on his Suffolk pigs at the late State Fair, has recently procured from L. G. Morris, of Westchester Co., N. Y., a pair of improved Suffolks pigs, also a pair of Essex pigs, all of which are from the imported stock of Mr. M. All who are interested in the improvement of the breeds of hogs in this State, will do well to call on Mr. E., and become satisfied that there is such a thing as a beautiful hog, and that there is a great contrast between such, and many of the prairie sharks seen in our State. Mr. E. will always be pleased to show his hogs and their pedigree, to all who may call on him. A

East Troy, Wis., July, 1853.

REMARKS:—Mr. Edwards evidently intends to keep at the head of the heap in the hog line. The pigs he exhibited at the last State Fair, we thought about good enough; but if he can fetch out any thing better at the next Fair, we will say amen. By the way, we don't want to brag, nor to frighten friend Edwards, but it is said, we have got the best SUFFOLK GRUNTER, ever seen in these diggings.

For the Wisconsin &amp; Iowa Farmer

**Deep Plowing and Heavy Seeding**

**EDITOR FARMER:**—One great fault with many of us western farmers is, that of cultivating too much land—or rather scratching over it. I would suggest to those farmers who are accustomed to plow their land in the spring about two or three inches deep—miss half of it into the bargain—sow two bushels of oats to the acre—make a motion to go over it once with the harrow—that they plow in the fall, soon after harvest, at least one acre, just for an experiment, six or eight inches deep, on prairie land (oak opening would not do so well to be ploughed so deep.) In the spring, drag it with a short thick toothed harrow once over, then sow broad-cast, six bushels of common white or black oats to the acre, then harrow them in thoroughly and finish up with a roller heavy enough to crush every clod and leave a smooth surface. The result will be a crop of sixty or seventy bushels of oats to the acre, instead of harvesting twenty-five or thirty. I have come up to either of these numbers myself, and believe it can be beat considerably.

I should be glad to learn, through the Farmer, whether any one has seen a good live fence made with the Hawthorn plant; if so, how it should be done and how to propagate the plant.

If any of your readers should have a cow or any other horned animal lose their appetite in the winter, just give them (for a cow,) 4 eggs, 6 table spoonsful of sulphur, two cups full of soot, one hand full salt, and 4 quarts of bran, well mixed together. This will make them eat heartily. So says a Yankee.

E. D. PHILLIPS.

Mineral Point, Wis., 1853.

**TO PREVENT COWS FROM SHEDDING MILK.**—Collodion (Liquid Cuticle) is a somewhat recent discovery, and has been applied to useful purposes by surgeons, but I am not aware that it has ever been

used to prevent the loss of milk by leakage from the udder of the cow. The mode of applying is as follows:—After milking, take a thin piece of muslin, the size of a three cent piece, wet it in the collodion and apply it quickly to the end of the teat. It dries immediately, and adhering firmly, prevents the escape of milk, from the orifice. It can hardly be removed at the next milking.

On first making use of this means I did not anticipate anything more than temporarily to prevent the evil. After making a few applications it was discontinued, and I was somewhat surprised to find that it had permanently lessened the fault. Upon reflection, the *modus operandi* appeared as follows:—First the collodion contracts the orifice and then prevents the escape of milk; and, second, the bag becoming distended its capacity is permanently enlarged. Try it.

Another useful process of this article may be mentioned. Cows' teats often become tender from chaps and deep fissures in them. They may readily be cured by moistening a piece of muslin in this liquid and applying it smoothly to the parts affected. It adheres so firmly that it will not be loosened even if the calf is allowed to draw the milk. [N. Y. Agricultor.

**TO CURE SHEEP SKIN WITH THE WOOL ON.**—Take one spoonful of alum and two of saltpetre; pulverize and mix well together, then sprinkle the powder on the flesh side of the skin, and lay the two flesh sides together, leaving the wool outside. Then fold up the skins as tight as you can, and hang them in a dry place.—In two or three days, as soon as they are dry, take them down and scrape them with a blunt knife till clean and supple. This completes the process and makes a most excellent saddle cover. Other skins which you desire to cure with the fur on, may be treated in the same way.

We can speak in favor of the above recipe. It does all it promises. Such skins make excellent mats for in-doors.

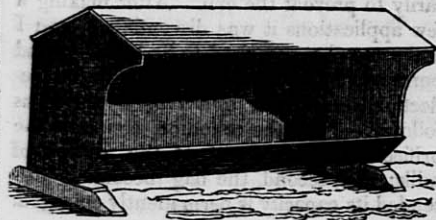
[Farmer's Companion.

**THERE ARE NOW TEN PERSONS** living on farms adjoining each other, on the road from Palmer to Ware, Mass., whose united ages amount to 807 years, and who were born, married, and always lived there. None of the ten were ever married twice.



## Salting Sheep.

Salt, in my judgment, is indispensable to the health of sheep, particularly in the summer—and I know not a flock-master among the hundreds, nay thousands, with whom I am acquainted, who differs with me in this opinion. It is common to give it once a week while the sheep are at grass. It is still better to give them free access to salt at all times, by keeping it in a covered box open on one side, like the following:



A large hollow log, with holes cut along the side for the insertion of the heads of the sheep, will make a respectable substitute. A sheep having free access to salt at all times, will never eat too much, and it will take its supply when and in what quantities Nature demands, instead of eating voraciously at stated periods, as intermediate abstinence will stimulate it to do. [Randall.

**HABITS OF BEES** At a meeting of the London Entomological Society, Mr. Westwood mentioned some curious circumstances which had lately occurred in his apiary.

About ten days ago one of the hives threw off a swarm which settled in the front of the bee house, and stopped the entrance to the next hive, the inhabitants of which at once commenced fighting the invaders. Mr. Westwood then sought for and removed the queen, and having released her she led the swarm to the entrance of another hive, where a second battle began. The queen being again removed—this time to a rose bush, she flew away, and the swarm returned to the hive whence it had come. Yesterday a different hive gave forth a swarm which settled with and joined a swarm from another hive, much fighting ensued, but today all was quiet, whence it might be presumed that one of the queens had been killed. Mr. Waring knew an instance in which four swarms had united, and the hive had to be enlarged, being too small to hold the bees."

## Chess—A Remarkable Instance.

**GENTS. EDITORS:**—In reply to Mr. Markham I would say, that my conclusions are that cattle running upon wheat in a wet time crush and break the roots, which causes a partial abortion or blight and chess is the product. I have pastured wheat at two different times since I settled in this Co., and in one instance had an abundance of chess where I had no other reason to suppose there would be any, the ground being new and seed clean. In the other instance there was but little chess, as I took good care to keep the stock out when the ground was wet.

Early in the spring of 1820, [not in the 16th century] I had occasion to cross one of my father's wheat fields on horseback, (in Northumberland Co., Pa. The soil was a heavy limestone clay, and the frost just out the ground. I threw the rider off the fence, jumped the horse over and mounted him, and supposing that the faster I rode the less damage would be done, put him to full speed. At every jump the horse sunk into the wet soil nearly to the knees. On arriving at the opposite side of the field, I threw the top rail down and jumped into the road.

At harvest the wheat was very heavy and leaned, and had to be cut all in one direction. We had not made but two or three thorough, when some of the hands noticed a "streak of chess" across the field and none in any other place. This reminded me of the stampede I made across it in the spring, and on tracing the streak both ways it laid direct to where I had entered and left the field. The upper rails of the fence being down, and the tracks of the horse still visible and a bunch of chess in every track. Now I would respectfully ask Mr. M., to explain how the chess came there if it did not spring from the wheat roots.

It is well known to observing farmers, that when corn is two or three feet high, if a stalk is cut partly off near the ground with the hoe and left standing, it will produce a perfect husk but no ear of corn.—The husk will be filled with smut, sometimes a cob in the center of the roll of smut, and in a few instances I have found a few grains of corn on the cob. This I think runs parallel with the transmutation of wheat to chess.

[Michigan Farmer.]

[STRAWS.]



### Damp Stables.

When I first came to the farm which I now hold by purchase, I found the stables built under large trees, and near a spring of water, with a northern aspect. My horses were soon in poor condition, with long and rough coats, and almost always lax in their bowels, nor could I get them up by extra food or lighter work; but my cows suffered the most, for they were always sick. Their milk fell off and their butter was poor, and of a bad color and taste, and four of them slipped their calves before their time. When the spring came they left their winter quarters in a worse state than I had ever seen them, and two of them died from scours on going to pasture. On inquiry I found that the tenant who had left had always been what the neighbors termed unfortunate in his horses and cattle, and from that cause more than any other, he had not been able to make both ends meet. The truth flashed upon me in an instant, and in a very little longer time than it has taken me to tell my story, I had commenced pulling down the stable, the unhealthiness of which had been I was convinced, the cause of all the evil and all the loss; and it was no more than two days before there was not left one stone upon another of the whole fabric. I now set to work and erected another on higher ground, removed from water, and clear from the shade of trees, with a south-east aspect, and dry capacious yard; and from that day I have had neither sickness nor sorrow in my out door household. My horses live on less food, are always sleek and in good condition, and my cows are a credit to their keep. Our butter brings 2 cents a pound more in the market, and for the last year our sales are more than doubled from the same number of cows and the same pasturage, and no more premature calves. Instead of watering my cattle as heretofore, at the spring under the trees—the water cold, with a deadly taste and bad color,—I sunk a well, and put in a pump; and at a long trough in the yard for the summer, and another under shelter for the winter, my cattle slake their thirst without setting up their coats, as they use to do after drinking at the hole under the trees. Even when the weather was warm they were accustomed to shake all over, as

if they were in a fit of ague, after drinking their fill of this water; and to this, with the bad aspect of the stables, I attribute all the sickness and misery which I have experienced amongst my cattle and horses.

[Cor. Boston Cultivator.]

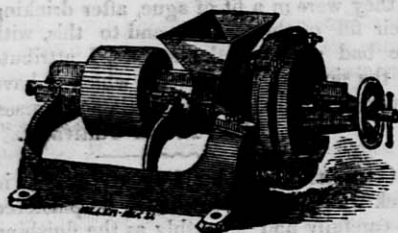
**CHIMNEYS.**—In building chimneys, in brick walls, the inside should be plastered as carefully and smoothly as the finishing coat of a parlor. Masons do not do this; they put on the common lime used by them for jointing, and the interior surface is covered without a proper regard to the functions of the chimney. The reasons for laying on the lime coat of a chimney smooth, are obvious, if we take into consideration that the rough edges of the lime, when dry, serve as points of attraction and adhesion for soot, because they resist the passage of the smoke. A smooth chimney has a better draught, to use a common term, than one with a rough interior; the reason of this is also obvious, because rough surfaces retard the passage of smoke, as well as water or any other substance in motion is retarded by them. In the building of houses, masons are too careless about these things; indeed, the majority of them do not appear to have any knowledge of natural philosophy, yet there is no man living, be he mason, plasterer, or hod-carrier, but stands high as a workman according as he is well informed.

The rules which should be followed in the building of a chimney, is to build it of a uniform diameter from bottom to top, not too wide, and smoothly covered with plaster inside.

[Scientific American.]

**TO PRESERVE FENCE POSTS.**—I saw in your paper, lime recommended to preserve posts. But I think my plan is preferable. I prepare my posts for setting, and then let them season. I then take coal tar and paint them with three coats of the same. I paint the posts from about fourteen inches from where they set in the ground to the bottom, and the end that sets in the ground, also—putting the paint on hot. A gentleman informed me that he had known a fence set in this way, that had stood forty years, and was as permanent then as at first. I think this is much easier and cheaper than lime, and more durable.

[Rural New Yorker.]



### Ross' Conical Grist Mill:

By invitation of the agent, Mr. Sedgbeer, we have recently had the pleasure of an examination of this Mill. We were struck with both the simplicity of its construction and evident durability—being made entirely of stone and iron. But we admired still more, the facility with which it performed the operation of grinding.—In all its essential parts, this Mill is unlike any thing of the kind that has been previously introduced to the public.

This Mill consists simply, of a solid cone runner of French Burr Stone, revolving on a horizontal shaft within a concave, composed of Burr Stone, firmly set within a cast iron shell, the grinding surfaces being with exactness fitted to each other. As an evidence of the rapidity with which it grinds, we will state, that it ground a half bushel of corn and oats in four minutes, and did the work better than we ever saw it done by any other mill. We also saw wheat flour, manufactured by the same mill, equal, so far as we could discern, to that turned out by the best mill in this place. A one horse power is all sufficient to propel one of these mills of the largest size, while the smaller size may be operated by hand.

We believe the cost of one of these Mills may be saved to any farmer, by one year's use, who has fifty hogs to fatten, or who feeds out the same equivalent of grain to any kind of stock. To the emigrant who is going into a new country we regard it as invaluable.

**PROSPECT OF THE HOP CROP.**—We see it stated in several of the New York and Albany papers, that the recent rise in hops is owing to a speculative move. That is correct, if at all, only to a very limited extent. Several large dealers, principally in Madison county, having contracts to deliver hops at certain prices next fall, and becoming convinced that the crop will be a light one, have been obliged to go early in the market, and also to offer very high prices. We have heard of one or two sales of the new crop at 35 cents—and 30 cents cash is freely offered for old hops of a prime quality, though not many can now be bought even at that price.

The falling off in the crop in this section of the State, from that of last year, will be fully one-third. The accounts from England are somewhat contradictory—still it is conceded that the crop will be considerably short of that of last year. The duty last year was about £250,000—that for this year is now estimated at about £50,000.

In 1850 the duty was less than £100,000. More definite information may be expected within a fortnight.

[Farmer's Journal.]

### Live and Dead Weight of Cattle:

Salesmen commonly calculate that the dead weight is one-half of what the animal weighs when alive; but the butcher knows that the produce is greater; it often approaches to three-fifths; and by an extensive stock bailliff of the late Mr. Curwen, it was found that the dead weight amounted to fifty-five per cent of the live. But the amount differs strangely, as may be seen by the following statement of Mr. Ferguson, of Woodhill, Canada West:

	Live Weight		Dead Weight		Tallow
	St.	Lbs.	St.	Lbs.	St. Lbs.
Aberdeenshire ox, 132	11		86	6	16 5
Short horned ox	132	0	90	1	14 0
Strt horn heifer, 130	4		77	9	15 8
Short horn steer, 120	5		63	7	14 12

[British Husbandry, vol. 1. p. 392]

The subject of live and dead weight of cattle being one that deeply interests farmers, we again call attention to the subject, in the hope that it may awaken inquiry, as to the question, what should be the rule of paying the farmer, for beef he may have grown? It costs him as much to grow hide and tallow, as it does muscle or flesh

and we should like to know, why he should not be paid for so doing?

[Ed. Am. Farmer.]

In continuation of this subject, we make the following extracts from Colman's Massachusetts Report:

"In New York, only four quarters are made by the slaughterer, and the hide and tallow are not reckoned in the price, facts which are to be remembered in making comparisons of prices in the different markets."

"The following are some examples of live and dead weight of New England cattle killed at home, and after being driven from Connecticut river to Brighton, the Boston beef market, a distance of 75 or 80 miles."

Example 1.—One ox live weight in market, 2,393 lbs. quarters weighed 418 lbs., 324 lbs., 331 lbs. hide, 150 lbs., tallow 173 lbs., 1,811.

Difference, 582 lbs.

Example 2.—Two oxen of A. S., killed at home, weighed as follows:

Live.	Killed.
1,970 lbs.	1,400 lbs.
1,910 lbs.	1,341 lbs.

About 294 lbs. lost on a hundred of the live weight.

Example 3.—An ox weighing on Connecticut river 2,250 lbs., weighing in market, 1,572 lbs.

Example 4.—An ox weighing as above 2,250 lbs., weighed in market 1,487 lbs.—Loss 768 lbs.

Example 5.—A fat bull, of D. S. killed at home, and weighing alive 1,495 lbs. dead, 1,021. Loss, 544 lbs. [Stock Reg.]

#### Ashes for Manure.

The true value of ashes to the farmer has long been unknown, and even now, is just beginning to be appreciated. The soap boiler's agents have long been allowed to carry away the most valuable fertilizer produced by the farmer, and leave in return poor brooms and worse tea. Many an anti-book farmer has hauled plaster miles to his farm, and paid a high price for the same, when there was no lack of the element in his soil, and he was but "carrying coal to Newcastle," while at the same time he sold his ashes at 10 cents per bushel,

nominal price, his soil being exhausted of potash. It is no wonder that his lands should become "worn out," and himself exceedingly dissatisfied with the seasons and moon.

Every plant contains inorganic elements which are, as all know, indispensable to its growth; the elements are the ashes of the plant. Those resulting from the combination of wood, contain many of the most important constituents of both the grains, grasses and roots. Wheat and corn contain a large proportion of potash, consequently ashes are most valuable manure for those crops. Fifty nine per cent. of the ash of corn is composed of the carbonate of potash (pearlash.) The abundance of this ingredient in wood ashes constitutes their great value as a fertilizer for that important crop, which, as a general rule, is double that of plaster. I have used both, separately and mixed, and find that a compound of two bushels of ashes and one of plaster, gives a better result than either when applied singly. I take a small shovel with which I put about one gill upon each hill; I carry the ashes into the field upon a barrow and use a pail to distribute them from. The best method of application, is to put it on the hills immediately after planting, which precludes the possibility of injuring the young plants, as is sometimes done by applying the mixture after they have come up. Corn to which this mixture has been applied, will ripen several days earlier and give a much greater yield than rows through the same field which are not so treated.

One half of the earthy matter of potatoes is pure potash, from which fact any person can see its value as a fertilizer for this crop. It is from a lack of potash that many farmers lose from 50 to 100 bushels of potatoes per acre every year. If a farmer has in his soil potash enough to form 200 bushels of potatoes per acre, and other constituents sufficient for 300, it is evident that the result will be a loss of 100, which the application of ashes would have prevented. Such cases often occur. Yet, in a ton of potatoes there is but twelve pounds of potash; thus it will be seen that the cost of the ashes necessary for the production of the other 100 bushels would have been but trifling.

[Dollar Newspaper.]



### Effects of feeding Cut and Uncut Hay To Milch Cows.

From a communication made to the Agricultural Society of Worcester county, Massachusetts, by Mr. WILLIAM S. LINCOLN, we make the following extract. We copy from the New England Farmer:

"My milking stock consisted of one cow, which came in on the 29th of October, the two trial cows, and the other, which calved last April, and is expected to calve again the 1st of next April. Some time before commencing this experiment, I was feeding my stock—what would be called poor stock—with hay, with an allowance of roots. I commenced cutting this hay for all my stock, young and old, (sixteen head) occupying me  $1\frac{1}{2}$  hours daily. Almost simultaneous with feeding the cut hay was an increase of milk very perceptible as it was milked in the pail. An inquiry was made by my wife, who in person takes sole charge of the dairy, as to the cause of this increase. An evasive reply was made.—From day to day the milk increased enough for the substitution of six quart for four quart pans, which had been previously used. I think I am within bounds in saying that the increase was over a pint daily, per cow, occasioned, to the best of my knowledge, solely by the use of cut hay."

### Cutting and Grinding Food for Cattle.

There is much question in the minds of of many Farmers in regard to the utility and consequent profit of cutting hay, or grinding grain, or cooking roots for cattle and horses. Some contend that nature designed they should perform the business of reducing their food with their own teeth, and that the mixing the saliva with the food, while doing this, is a very important part of the nutritive process.

Experiments, however, prove that the process of cutting hay and straw, or grinding grain to be fed to cattle and horses, does not preclude the necessity of their chewing such food, and the mixing it with a sufficiency of saliva to ensure healthy digestion, and that there is a manifest advantage in doing it.

We have, from time to time, published the details or the results of such experiments. We have recently met with statements respecting this question, by Mr. A.

Gyde, in the last report from the Patent Office, from which we extract the following:

Two horses in good health, in daily work, and as nearly as possible equal in size and age, were selected for the experiment.—They were each allowed 5 lbs. of oats, 42 lbs. per bushel, and a sufficiency of good hay, of which they consumed about 17 lbs. per day each horse. The only difference in the feeding, consisted in one horse having the oats thoroughly crushed, and the other being allowed the oats uncrushed. On the fourth day of the above mode of feeding the solid excrements of each horse were examined; 100 parts of the dung of the horse fed on crushed oats were found to be deprived of all nutritious matter contained in the food, and to consist of woody fibre, mixed with animal secretions and some salts; while 100 parts of the dung of the horse fed on the uncrushed oats were found to contain one-quarter per cent. of nutritive matter, consisting of starch and gluten, which had not been acted on by the stomach, mixed with the ordinary constituents of the solid excrements of the animal.

The same horses were then fed with cut and uncut food, consisting of hay cut into chaff and hay uncut. At the expiration of the 3rd day the excrements were examined, but no chemical difference in their composition was detected; the food, in both instances, was found to be equally exhausted of nutritive matter.

The shorter period, however, occupied by the horse in filling his stomach, and consequently greater amount of rest obtained, and the means of mixing the food and preventing waste by cutting it into chaff, recommend the cutting.

It seems, therefore, by Mr. Gyde's experiment, that there is a great saving in grain by grinding or crushing it; that, as regards hay, the nutritive parts were all extracted by the stomach, whether cut or uncut, because the animal ground it equally fine in either case, but by cutting it does not take so long a time to grind it, and the horse is also enabled to grind some things when cut that he could not if uncut.

[Maine Farmer.]

### Feeding Swine.

Laconic, sensible and seasonable is the following from the Granite Farmer. It should be well digested by all concerned. The science of pork making is not sufficiently understood:

1. Avoid foul feeding.
2. Do not omit adding salt in moderate quantities to the mess given; you will find it to your account in attending to this.
3. Feed at regular intervals.
4. Cleanse the trough previous to feeding.
5. Do not over-feed—give only as much as will be consumed at the meal.
6. Vary your bill of fare. Variety will create, or, at all events, increase appetite, and it is further most conducive to health; let your variations be guided by the state of the dung-cast; this should be of medium consistence, and of a greyish brown color? if hard, increase the quantity of bran and succulent roots; if too liquid, diminish or dispense with bran, and let the mess be firmer; if you add a portion of corn, that which is injured, and thus rendered unfit for other purposes, will answer well.
7. Feed your stock separately in classes, according to their condition; keep sows in young by themselves; stores by themselves—and bacon hogs and porkers by themselves. It is not advisable to keep your stores too high in flesh, for high feeding is calculated to retard development of form and bulk. It is better to feed pigs intended to be cut up for bacon loosely and not too abundantly until they have attained their full stature, you can bring them into the highest possible condition in an inconceivably short space of time.
8. Do not regret the loss or scarcity of potatoes so far as swine feeding is concerned. Its loss has been the means of stimulating inquiry, and producing experiments, which have resulted in the discovery that many other superior vegetables have hitherto have neglected and foolishly passed aside.
9. Do not neglect to keep your swine clean, dry and warm. These are essentials and not a whit less imperative than feeding, for an inferior description of food will by their aid succeed far better than the highest feeding will without them; and suffer me to reiterate the benefit derivable from

washing your hogs; this will repay your trouble manifold.

10. Watch the markets. Sell when you see a reasonable profit before you.—Many and many a man has swamped himself by giving away to covetousness, and by desiring to realize an unusual amount of gain; recollect how very fluctuating are markets, and that a certain gain is far better than the risk of loss.

**WINTER FLAX.**—The Secretary of the N. Y. S. Ag. Society, has received from a Russian gentleman, by the name of Faltersborf, a sample of the seed of a variety of winter flax. A larger quantity is promised, which is expected to arrive in the fall. The same gentleman also proposes to send some "the seed whose weed furnishes the precise powders for killing insects of all kinds."

The advantages claimed for the winter flax, are set forth as follows:

a. Besides it has the advantage to be sown in the fall, not subject to be sown either too early or too late, as this is often the case with the spring seed, and has always a failure of the crop in its train.

b. That the winter seed shoots sooner, yet before the weeds come out, which latter are kept back by it; it is earlier ripe, and can be brought in before the hands are wanted for other agricultural operations.

c. In order to prevent the shooting in the fall, the seed must be worked in by the plow, as late as possible, and then the seed is not damaged neither by 20 degrees of cold (Reaumur.) In the spring, as soon as the field is dry, it must be lightly harrowed. It shoots with the first rays of the warm sun, and is already in flower when other spring seed is sown, and before the insects can do any harm.

d. This winter seed is glossy, but dark and mixed with black grains, yet all shoot.

It is a great deal more oily than the common seed.

[Boston Cult.]

**CANARY BIRDS AND CANARY SEED.**—The Boston Atlas having mentioned that during last year 56,000 bushels of canary seed were imported, costing \$13,500, a writer in the Journal of Commerce adds the intelligence that 41,000 canary birds are annually imported, costing \$17,390, making a total of nearly \$31,000 for birds and their food.

For the Wisconsin & Iowa Farmer.

### Agricultural Knowledge.

#### IMPORTANCE OF AMPLE MEANS FOR THE GENERAL DIFFUSION OF AGRICULTURAL KNOWLEDGE.

Foremost in the class of producers stands the cultivator of the soil. It is for him to make a country rich or poor—to leave the desert barren, or to make it “bud and blossom as the rose.” The science of agriculture depends mainly upon the process of experiment for its advancement, and were every individual left to himself—to depend on his own experience and discovery, the progress of Agriculture would of necessity remain without the pale of the Sciences; and our country, from one end to the other, present to the traveller, one broad scene of confusion and varied desolation. By the principle of association, however, this calamity is, in a measure, removed, and what is communicated from one to another, aids the information and action of many.

From this advantage of communication between farmers, arose the necessity of *Agricultural Journals*. These Journals should contain all the important practical discoveries in a certain region of country—as a State—and be disseminated to the entire mass of the Agricultural population.

The time has come when Wisconsin can, and will, support such a Journal—one that will meet the wants of the State, and that shall have ability to disseminate knowledge of all kinds useful to the farmer—Agricultural, Mechanical, and Educational.

With two Editors, one for the Agricultural and Mechanical, and one for the Educational, who should be a practical teacher, a Journal might be produced which would be a credit to the State, and which would be liberally sustained. It would also do more to drive that mass of mental corruption in the form of light literature from our country and city homes, than any other agency that can, in my opinion, be devised.

The farmer who raises only 15 or 20 bushels of grain to the acre, can there learn of him who raises from 60 to 80. Might I not ask why is it that some of our farmers always have good crops, while others invariably produce an inferior article? Why can some of our dairymen always get from 12 to 18 cents per pound for butter, while others, even when the market is destitute, cannot obtain over 10 or 12 cents?

Now why will not our successful farmers impart their knowledge, which they hold as such a profound secret, to others, so that all may produce good and sufficient food, and “cause two blades of grass to grow where only one grew before.”

There are numerous reasons why such a Journal, as I have been recommending, should be located at the Capitol of the State. That is the depot for the accumulating treasures of the State Agricultural Society, and the great centre of action for the entire State. It will shortly be in communication with every part of the State and Union, by railroad, and will inevitably and irresistibly become in a very short time, the great center of trade for an immense region of the richest farming and mineral country in the Union. Other reasons might be urged for a removal to the Capital, but I think they will naturally suggest themselves to you and your readers. Trusting that you may speedily remove to Madison, enlarge your paper to a dollar a year—procure a good Educational Editor, and give us just what we want, as you can, I remain yours.

W. COLEMAN.

Oregon, Wis., Aug., 1853.

REMARKS:—We are quite willing to devote a space in the Farmer to Educational matters, whenever those who profess to be the friends of that cause, will help to sustain such a Department. The proposed enlargement, and removal to MADISON, has often been urged, upon us before. As to the expediency of such a step, we have no opinion to express at present.



### Oat Flour.

The following article, by J. Towers, is from the London Farmer's Magazine, and may prove interesting to such of our readers as have lands capable of producing oats, and which refuse wheat. The late experiments in the preparation of Indian Corn, the various kinds of flour made from it by Hecker and others, convince us that the subject is worthy of investigation, as to all known grains; and as oats are easily raised in many parts of our country, it may be well to have the subject of oat flour fairly investigated. [Working Farmer.]

Several weeks ago—just before that critical period when the probability of a successful seeding of wheat might depend upon the weather for a very limited time—a letter was received from Scotland, mentioning the introduction of a new farina, which gave promise of becoming exceedingly valuable for many culinary purposes, particularly among the laboring classes. Our correspondent is an agricultural authority of such eminence, that merely to name him would prove a recommendation. Another note, per date 15th April, was sent as an answer to some inquiries, from which the following extract is given verbatim:—"The oat flour is really a good article, and for a pudding much superior to arrow-root, sago, and all such farinas. It has now been proved by chemistry that the oat is more nourishing to the human frame than the wheat; and this accounts for the brawny fellows to be found among the plowmen of Scotland; whose chief articles of food are oatmeal and milk."

When I resided in Berkshire, an attempt was made to obtain fine oat meal; but it failed because the millers were ignorant concerning the processes of kiln-drying, &c., employed in the north for the preparation of genuine oatmeal. One of them, however, on the Thames, ground some oats as a trial, and separated the flour from the husk or bran. It was white and glutinous as that of wheat, of a pleasant flavor, but perfectly different from that of Scotch meal. Still it was evident, that, had the quantity been sufficient, and the sample better dressed, fermented bread might have been made from it.

While pondering upon a subject worthy of communication, my correspondent arrived here, and thus some particular infor-

mation was obtained which may be acceptable on several accounts. Being favored by two packages of the Scotch flour, we have already proved its excellence. The sample has been found beautiful—pure in flour, and pasty when wetted. Fermented bread could doubtless be prepared by means of sweet yeast—or better, I think, (till hot weather set in) by the good and fresh German or Dutch yeast, now frequently sold and used by pastry cooks and bakers. But the present price of the new flour is too high for bread and so will remain until the manufacture be greatly extended.

It is perhaps to be regretted that Mr. Smith should have patented his flour.—The price has thereby been increased, and an obstacle to the preparation of bread-loaves created. At present it is sold in shilling-packets, weighing with the wrappers 2 lbs 3 oz. The label reads thus:—"This new preparation of what has long constituted the characteristic food of Scotland, is calculated more than ever to develop the healthful and nutritious qualities of our favorite cereal, and to give increased value to its production. Chemistry has proved that the farina of the oat supplies more nourishment of the muscles, bone, and blood of man, than any other known vegetable." The oat flour may be used as gruel, and also in the preparation of arrow-root, pudding of the lightest and finest quality, pancakes, manna, tapioca, &c.

The parcels were received here on Thursday, May 12th, and on the following day a pudding, according to the given directions, was made with *two table spoonsful* of the flour. It was sufficient for five persons—thus proving the fact of "a small quantity being requisite for the purpose."

I am given to understand that the oat is to a certain extent kiln dried, then husked, and ground into flour. The process is yet in its infancy; but however worthy and excellent as a *placebui*, it will never attain a prominent position till produced in quantity sufficient (and a price) to become fermented bread, as a substitute for wheat in loaves, at a time of deficiency or failure of crops.

Manure is to the soil, what bread is to the human system; its life, nutriment and strength.

# HORTICULTURE.

## Meeting of N. W. Fruit Growers.

**FRIEND MILLER:**—The Fair of your State Agricultural Society is appointed for the same time as the Chicago Meeting of our Northwestern Fruit Growers Association. This is unfortunate. Still I must request you to keep your readers advised of our time—October 4th to 7th, in Chicago. Perhaps some of your fruit men will wish to attend our Meeting, or at least send samples of fruit. We count on a large attendance, and a great show of orchard products from the East as well as the West.

Reports are expected from members and others, and interesting discussions, embracing all the hardy fruits not heretofore acted on, will occupy much of our time and attention; and yet other questions of interest to the fraternity are expected to come up, during the ensuing sessions; and as we hope to secure the services of a regular Reporter, to aid the Secretary, in preserving a record of our sayings and doings, it may be that our proceedings, when printed, will be found a valuable addition to our scanty western pomological publications. And to make our works of general interest the whole Northwest must be represented, and I would suggest, that those who cannot attend the meeting may send fruits and papers relating thereto—care of Dr. J. A. Kennicott, 96, Lake St., Chicago; or to the Prairie Farmer office; and one dollar as a member's fee, which will secure a pro-rata share of the published proceedings.

**JOHN. A. KENNICOTT.** President.

**A GOOD SUGGESTION.**—E. S. L. RICHARDSON of Kendall, Ill., in a P. S. to a letter to us, says "My hobbies are fruits and flowers, and perhaps when at leisure I will send you some notes on ornamental trees. Nur-

serymen in your region could do good service to the public by collecting and proving all their new seedling fruit, or such as may be claimed to be seedling, which are to be got within their reach. No doubt, western seedlings will yet be found which will be better adapted to the west, than most of the eastern or foreign fruits; more especially Pears, Plums and Cherries. Nurserymen in the west could also do much good by sending you samples of such fruit as they have fruited and found good, and giving, also the different names under which they are known, so you could figure and describe them, and give their various names."

## Destructive Insects.

A Correspondent of the Boston Transcript, M. H. Simpson, of Saxonville, writes to that paper that he has discovered a new worm upon the apple, cherry, and plum trees, eating the leaves and fruit. It is very destructive to the tender shoots as well as the fruit, and the writer says that if all the worms go through their transformations, the next generation will be in such swarms as to destroy the trees. If the trees be shaken, the worms spin a fine fibre towards the ground, and remain suspended by it, ascending again, afterwards to commence anew their ravages. They are described as having three longitudinal stripes on the back; the center is fainter than the other two; and the head is buff colored and heart shaped. These destructive insects are spreading through Massachusetts. Already they have had two generations this season. As a means of destroying them, Mr. Simpson recommends the syringing of the trees with whale oil soap when the worm is first hatched.

## PLUM GRAFTS BEARING THE FIRST YEAR.

—A co. respondent, R. J. A., sends us an account of plum grafts bearing full grown plums, the same season, they were set, and asks an explanation of the phenomena.—There is nothing very remarkable about it—the scions set had blossom buds upon them, and growing thriffully, produced fruit. [Ex.



### Pear-shaped Quince.

Mr. Downings says "the pear-shaped quince is larger and of finer texture than the apple-shaped. It is rather tough when stewed or cooked, the flesh is less lively in color, and it is therefore much less esteemed than the apple-shaped variety. The fruit is of medium size, oblong, tapering to the stalk, and shaped much like a pear. The skin is yellow. The leaves are oblong ovate. It ripens about a fortnight later, and may be preserved in a raw state considerably longer."

Quinces make a much better preserve by being kept sometime before using. If kept a few weeks in a damp cellar before preserving, they will become more tender and delicious.

### Look to the Grape Vines.

Besides the fall or winter pruning of grape vines, they require a careful attention during summer. It is well to go

among them every few days, and with a sharp blade, clip off any excess of new runners, that the strength of the vine may be thrown into those parts, where it is desired to ripen off fruit, or to harden a selected runner for the next years bearing.— It is well, a little later in the season, to head off the reserved runners, entirely, by clipping the bud at the end, so as to harden the wood, to preserve it from the effects of frost, the coming winter. This practice, of course, refers to vines trained upon a wall, or trellis.

Vines intended for *layering*, may be taken down at this season and covered with earth, either in a series of pots or in the ground. Choose for this purpose a vine of the present year's growth, detach it carefully from the wall or trellis, and fasten it down with wooden forks, covering the joints intended for cuttings with several inches of mellow soil, these joints will soon take root, and furnish good cuttings for propagation. [Selected.]



## CHERRY FESTIVAL, AT CLEVELAND, O.

—We have a letter from J. A. Kennicott, M. D., who attended the exhibition of Cherries, in June, and it was one of the finest displays of cherries ever had in this country. About 40 distinct sorts of seedling cherries were exhibited, many of them said to be every way superior to the best of the old varieties. The Judges examined the cherries by Nos., without any designation as to varieties. The award of merit was unanimous in favor of what proved to be Dr. Kirtland's seedlings: "Delicate," and "Mammoth," were among the choice ones selected. A full report will be given, and an opportunity afforded, doubtless, to obtain some of these valuable seedlings of Dr. Kirtland, who is entitled to great credit for his perseverance in securing this valuable selection of fruit for our country.

[Journal N. Y. S. A. Society.]

## Apple Scions—Bad Seed!

MR. JOHNSTONE:—I am now going to detail an experiment which may perhaps be new:

About three years ago, I sent to Old Connecticut for some apple scions from a favorite old tree that grew in my father's orchard. I directed my friend either to wax the ends and wrap them in paper, or seal them air tight in a two ounce vial. The latter plan was adopted. Owing to a mistake in directing to the wrong Post Office, I did not get until about three weeks after they were due. I thought they would not grow, and concluded not to take them out of the office. They were put away as dead letters, but being over looked, were not sent to Washington, and finally the Postmaster took them out and set them, and all but one lived and grew finely. They must have cut them from the tree as much as seven weeks before they were set.

There is an evil under the sun, viz: sowing garden seeds that *prove* to be worthless; is there no remedy? Suppose you go back to the merchant who sold you the seed, he tells you he bought them for good seed, and don't consider himself in anywise blameable, but *somebody* is to blame. Good seed under favorable circumstances, will grow. Now I would suggest as remedy, that every one who finds *too late*, that he has to do without his parsnips or onions or his ruta bagas for this year, should pub-

lish the facts as to who raised the seed, and of whom he bought them.

If you think this course would be just and prove beneficial, please so publish this.

I bought some *Dutch parsnip* seed of Mr. D——; at Paw Paw, marked "Riskey's seed warranted," I prepared my bed in the best manner, I knew how; sowed the seed, and not one plant came up.

S. A. BABBITT.

[Michigan Farmer.]

## PROFITABLE AND SKILFUL CULTURE.—

The late S. W. Cole, stated that Moses Jones, of Brookline, Mass., set 112 apple trees, two rods apart, and peach trees between them both ways. These trees received the best cultivation and attention, and bore the eighth year, 528 barrels of apples, that is two barrels as an average, to each tree. A "few years" from the setting of the trees, he says, the peach trees bore \$400 worth of fruit in one year. During this period, the vegetables on the ground, nearly paid for the manure and labor. Many of the apple trees produced four or five barrels the tenth year. We have known results equal to this on a smaller scale, where the best cultivation was given.

[Albany Cultivator.]

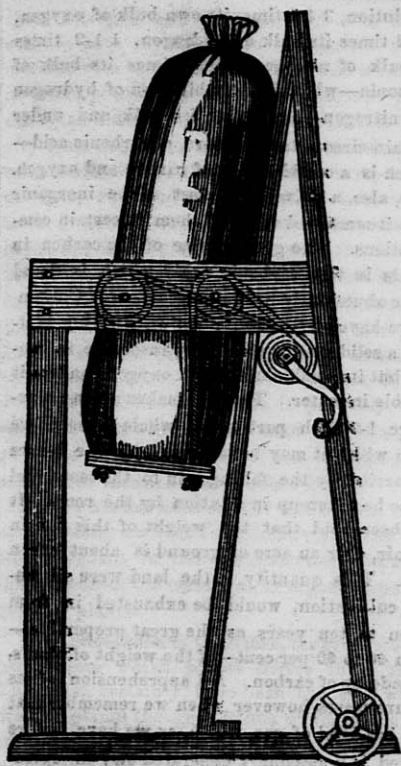
## SAGE ROOTS—How to preserve them.—

Cut off the tops close to the ground in April. Treated in this manner annually, the plants are continually renewed, and become perennial. Seeding is prevented, and an abundant supply of leaves is produced. So says one who has pursued the practice successfully for fifteen years.

[Wayne Sentinel.]

TREES KILLED BY POTASH.—Medicine in excess becomes poisonous. The New England Farmer mentions the case of an orchard of one hundred sixty thrifty Baldwins, that were washed with a solution of a pound of potash in a gallon of water.—The owner found in two days that he had killed the whole of his beautiful trees.—Soap or ashes in water are strong enough. Guano is an excellent thing for trees, and salt is sometimes good, but it is one of the easiest things in the world to kill trees with them in excess.

Crush the caterpillar in the egg, and you will save much time and injury.



**Sack Elevator.**

This simple apparatus effects an important saving of human labor in warehouses and other situations, where heavy sacks are to be raised from the ground, and conveyed away on men's shoulders. It is in the lifting operation that the carrier's power is so rapidly consumed. A man will carry a heavier weight on his back than he can lift up to it from the ground, hence it is necessary to place a heavy bag on an elevation to lift it for carrying; this apparatus obviates the necessity of requiring extraneous help, to lift a heavy bag, or having it lifted and placed first on an elevation nearly as high as the breast, to place it properly on the back so as to carry it well the required distance. The engraving represents a side elevation. It consists merely of a timber frame, open at the front to admit the sack, which is placed against the inclined frame, and upon the lift board, suspended by four ropes from its four corners. These ropes pass over fixed pulleys, in the upper

cross-bar of the frame, and are thence passed round corresponding pulleys on a short horizontal shaft at the back of the frame. When a sack is to be raised, the board rests on the floor, and the sack being set upon it, the attendant turns the winch-handle on the back pulley shaft, and thus winds up the four supporting cords, and raises the sack to the required height, when it is held in the desired position, by a movable stop-pin.

[Scientific American.]

Toland Prairie, Wis., July, 1853.

**EDITOR FARMER:**—Will you please inform me, either by letter or through the columns of your Journal, where there is a Manual Labor School, offering the advantages of a liberal education; and what are the terms of admission, &c.

A. YOUNG FARMER.

We cannot give the desired information. Will some one do it who can? [Ed.]

#### WHEAT FOR THE ENGLISH MARKET.

An English paper has the following relative to where the grain is produced to support that country:

It is proved by the returns of the foreign corn trade, in the last few years, that a change is taking place in the principal sources of the supply of food. The U. S. and the Baltic, are no longer, by any means, our largest producers. Their yearly surplus falls short of our yearly wants, and it is from the fertile districts and fine rivers of Eastern Europe that we now draw our greatest and inexhaustible supply. In 1841, when the total imports of wheat into this kingdom was 2,240,000 quarters, only 230,000 quarters or about one-tenth, came from Russia, Turkey or the Mediterranean. In 1852 the total import of wheat (exclusive of flour) was about 3,200,000 quarters of which 1,700,000 quarters came from the ports of those countries, and taking the whole import of corn at 3,756,000 quarters, the supply from the East was 1,930,000 quarters.

#### AGRICULTURAL SCHOOLS IN VIRGINIA.

—Several enterprising planters in Loudon county, Virginia, have agreed to establish a model farm and agricultural school in that county. The land has been purchased and the building will be erected during the summer. Hurrah for old Virginy!

Written for the Wisconsin and Iowa Farmer.

### Chemistry of Plants. No. 3.

UPON WHAT DO PLANTS LIVE—FROM WHENCE COME THEIR MATERIALS—WHAT IS THE EFFECT OF PLANTS UPON THE SOIL ON WHICH THEY GROW, AND THE AIR IN WHICH THEY LIVE.

BY PROF. S. P. LATHROP, M. D.

Having become acquainted, in the last number, with the several constituents of plants, the next subject for us to consider is, their source:

#### WHENCE DO PLANTS OBTAIN THEIR CONSTITUENTS.

This is an important question to farmers and a correct view of the subject is essential to correct practice in agriculture. The answer to the question above is, there are two great sources of the constituents of plants, and one important medium by which they are taken up by the plant. These sources are the air and the earth, and the medium water. It may be said, then, we have abundance of these every where. Very true. But it must be remembered that the peculiar constituents described, are not equally distributed through the earth and the air, being abundant in some portions of each and almost entirely wanting in others.

There are natural agencies at work, such as winds and waves, tides and currents, whose tendency is to equalize these elements. Man's agency, as a cultivator of the soil, is, to assist and direct, and co-operate with nature in this work.

The organs of plants, which take up the constituents from the air and soil, are the leaves and the thread-like rootlets attached to the main roots. The plant's nourishment must, therefore, be wholly in the gaseous or liquid form, for the leaves can imbibe air or vapor only, while the tissue of the rootlets is especially adapted to absorb liquids, and is incapable of taking in solid matter, however minutely divided. It must be in a state of perfectly limpid solution. Water, the almost universal solvent, becomes, therefore, the necessary medium of the plant's food. This must be ever present as a liquid. It consists of oxygen and hydrogen—the first two of the organic elements—(see Table II.) and, therefore, may and doubtless does, furnish these two essential ingredients of the vegetable structure. Yet pure water cannot furnish what it does not contain. Water, however, will dissolve and hold

in solution, 3 1-2 times its own bulk of oxygen, 1 1-2 times its bulk of hydrogen, 1 1-2 times its bulk of nitrogen, many times its bulk of ammonia—which is a combination of hydrogen and nitrogen—and 1 time its bulk, and under certain circumstances, more, of carbonic acid—which is a combination of carbon and oxygen. It is, also, a solvent of most of the inorganic constituents, and of all of them in certain combinations. The great source of the carbon in plants is the carbonic acid, which is found quite abundantly in the atmosphere. Carbon, as we have seen, (see carbon in No. II.) is itself a solid, and is absolutely insoluble in water, but its combination with oxygen renders it soluble in water. This gas makes up on an average, 1-2000th part of the whole atmosphere from which it may be absorbed by the leaves or carried by the falling rain to the roots, and there be taken up in solution by the roots. It has been said that the weight of this gas in the air, over an acre of ground is about seven tons. This quantity, if the land were all under cultivation, would be exhausted in from seven to ten years, as the great proportion—from 40 to 60 per cent—of the weight of plants, is made up of carbon. All apprehension of its failure ceases, however, when we remember that this is a kind of gas, which, as we have before hinted, is unceasingly generated and in extraordinary quantities by those chemical processes most universally diffused in nature, viz; the respiration of men and animals, the combustion of wood, coal, &c, and the putrefaction of animal and vegetable matter. It also streams forth from crevices of rocks in many regions of the earth. The atmosphere is also the source of some of the nitrogen—79 percent. of it consisting of this gas, and this being soluble to some extent in water, every rain drop that falls through the air, carries to the ground and to the roots of plants a minute quantity which they imbibe with the water. This accounts for the free nitrogen which is always present in plants. This, however, is but a very small portion. The greater part is received from the soil generally. But it is always in some form combined chemically with other bodies—generally oxygen or nitrogen—forming nitric acid and ammonia. This explains the great efficacy of these substances as manures. Both are soluble in water and can therefore enter the roots of plants without difficulty. When vegetable or animal matters decay, ammonia is formed from



their nitrogen, and carbonic acid from their carbon; both of these two substances then combine with each other forming what is called *carbonate of ammonia*. This is a volatile salt, and when formed, escapes as a vapor into the air, from which it is carried in solution by rains and snows to the earth, and there, with the water, absorbed by the plant. If these vegetable or animal substances are made to decay in the soil where plants are growing, the ammoniacal salt may be absorbed by their roots immediately after its formation. In such instances the soil would be the source of the nitrogen. In what manner the assimilation of ammonia takes place in the vegetable kingdom, is, indeed, not yet known, but it is probably the ammonia from which plants take the nitrogen requisite for the formation of the nitrogenized substances, mentioned in Table I No. 2.

From what has been said, it will be seen that *carbonic acid, water and ammonia*,—all more or less abundant in the atmosphere—contain in their elements the essential, or organic constituents of plants.

The atmosphere, is, therefore, the great storehouse from which plants derive their food. This must, certainly, have been the case with the first plants that grew, when no vegetable or animal substances, in decomposition, which now goes under the name of *humus*, existed in the soil. It is no less so now of large tribes of plants growing on the newly formed volcanic islands. The great portion of the vegetable kingdom, particularly of uncultivated or native plants, is just so much matter which the power of vegetable organization has seized from the atmosphere, and condensed into the form of meadows and forests.

It must not be concluded, however, from what has been said, that the soil serves only as a foothold for plants, and that all vegetables obtain their whole nourishment directly from the atmosphere. The races of plants that will grow at the entire expense of the air, are Lichens, Mosses, Ferns and certain succulent tribes of Flowering plants. None of the vegetables most useful as food to man or beast are able to thrive without the inorganic materials which are found mostly alone in the soil.—These are furnished to the soil by the slow decomposition of the rocks and earths that compose it. They are dissolved, in very minute proportions, in the water which percolates the soil, and with this water are taken up into

the roots of plants. However minute the quantity may be in any given quantity of water, the plant concentrates and accumulates it by the constant exhalation of the water from the leaves, which act as filters, till these inorganic constituents often form a pretty large per centage of the solid matter of the vegetable. As might be expected, the leaves contain much the largest portion in proportion to their weight.

These organic constituents, however, usually form so small a per centage of plants—from one to fifteen per cent.—that the earlier physiologists supposed their presence was wholly *accidental* and formed no *necessary* part in their organization. It was found, however, that this inorganic part of the same kind of plant was always of the same kind of material, whatever was the character of the soil upon which it grew. This evidently would not have been the case, were its presence wholly *accidental* and not governed by some fixed laws. It was also found that the composition of the ashes of different plants, grown upon the same soil, varied much in the number and character of their inorganic constituents. I was still further found that each kind of plant, in selecting for itself, nearly a constant weight of this matter, while it might choose the same kind or kinds of earthy material, that some other plants do to make up their composition, yet it was always in quantities peculiar to itself.

From the above facts it was inferred that the inorganic constituents are *necessary* elements of plants. This view was corroborated by the further observed fact, that plants will not thrive and come to maturity—properly perfecting their seed, straw &c.,—in a soil destitute of the kinds of matter usually found to be present in their ashes.

How greatly these inorganic constituents differ, not only in different plants, but even in the different parts of one and the same plant, and also how greatly they vary at different seasons of the year in quantity and quality, may be learned, to some extent, from the following table, in which these elements are compared as they exist in certain vegetable ashes.

TABLE III.

In dried state.	Yielded.	Of which were soluble.
100 lbs grains		
of wheat,	2 to 3	lbs. ashes 1-2
" " wheat straw,	4 to 5	" " 1-9
" " potatoe tubers,	8 to 9	" " 4-5
" " potatoe tops	12 to 15	" " 1-20

" oak wood	2 to 4	" "	1-3
" oak bark	5 to 6	" "	1-12
" oak leaves in spring	5	" "	1-2
" " autumn	5½	" "	1-6
" walnut wood in the spring	10	" "	1-2
" " in the autumn	3	" "	1-5
" walnut bark in the spring	9	" "	1-2
" " in the autumn	6½	" "	1-12
" walnut leaves in the spring	7 & 4	" "	1-4

These facts are the bodies of the true principles, which should guide every agriculturist in the management of his soils. Says Prof. Jas. F. W. Johnston, "It is difficult to conceive the extent to which the admission of the essential nature and constant quantity of the inorganic matter contained in plants must necessarily modify our notions and regulate our practice in every branch of agriculture. It establishes a clear relation between the kind and quality of the crop and the nature and chemical composition of the soil in which it grows. It demonstrates what soils ought to contain, and, therefore, how they are to be improved. It explains the effect of some manure in permanently fertilizing and of some crops in permanently impoverishing the soil. It illustrates the action of mineral substances upon the plant and shows it may be, and *very* is, in a certain measure, fed by the dead earth. Over nearly all the operations of agriculture it throws a new and unexpected light."

These bodies, as will be seen by reference to Table I., are of two kinds—*bases* and *acids*, and the chemist understands by the former, those bodies, which, if soluble, have an alkaline taste, that is, like wood-ashes, burnt lime &c.; and by the latter, those which in the state of solution have a sour taste. Potash and soda are also called *alkalies*; and lime and magnesia are called *alkaline earths*. Whenever these *bases* come in a chemical connection with any of these acids, they unite and form substances called *salts*, which exhibit, to no very great extent, the properties of either of their constituents. It is in this condition of a salt that we find these inorganic substances in plants.

These salts may be arranged in a table according to their solubility, which gives a good basis for determining their presence in the ashes of any plant.

TABLE IV.

I. *Those soluble in water*—the alkaline salts, or the salts of potash and soda.

II. *Those soluble in dilute Muriatic acid*—the alkaline earthy salts, or the salts of lime and magnesia together, with the salts of the oxide of iron.

III. *Those insoluble in water or acids*—the silicates, or those formed by the union of silica with other bases.

Whether any one or the other of the above class of salts predominates in the ashes of a plant may be easily ascertained by treating its ashes first with water, and seeing how much of the amount is dissolved, which will, of course, indicate the amount of potash and soda there is present; and, secondly, with dilute muriatic acid, which will indicate the amount of lime and magnesia there is present. The remaining portion belongs to the third class, or the silicates.

EFFECTS OF DEEP PLOWING.—The farmer and Mechanic, published at Lewiston Falls, Maine, say:—"A gentleman in Canton took us out the other day on two acres of land, which he had cultivated for a few years, and which he makes very productive. He told us that it was so wet when he commenced upon it that he could do but little with it; but some three or four years ago he put in a large plow, and turned it over to the depth of nearly one foot, following with the subsoil plow to the depth of nearly one foot more. Since then he has had no trouble with the wet or drouth. Everything he puts upon it flourishes finely. This process will pay on much of our land, whether the undermining will or not."

THE WAY TO PULL TURNIPS.—The Yankee grasps the root by the top and pulls it with his hand, and then cuts off the top with his knife. The Englishman has a better way. He sharpens his hoe, and passing along, cuts, with a single stroke the tops of the turnip; then with the same implement, strikes under it, so as to cut off roots, and brings it out of the earth. In cutting off the tops he guides his hoe so as to throw them into a sort of row, in one place, and digging he guides it so as to throw the roots together in another row. He will dig the roots about four times as fast as one Yankee with his pulling and knife.

## RECIPES.

**CEMENT FOR ROOFS.**—Having had several inquiries made to us lately for some good material to put on leaky shingle roofs, such as a cement, we should state that red lead paint, oil and melted resin, into which is stirred a considerable quantity of dry sharp sand if put on thickly with a brush, then dusted with sand, ought to form an excellent cement for that purpose.

We have not tried it on old shingle roofs, but have done so to stop leaks in a tin roof, and have found it to more than answer our expectations. Good white lead mixed with oil and dry sharp sand, will answer as well, but the former composition is cheaper. It is a non-combustible as well as a water-repelling cement.

[Exchange.]

**VALUABLE APPLICATION.**—For wounds received from old nails, or cuts occasioned by broken glass, peach tree leaves, well steeped and applied to the wound, will give immediate relief. By thickening the liquid from which the leaves have been taken with meal or bran, a good poultice is obtained, which will keep moist for hours. In case the leaves cannot be obtained, a tea made of young twigs of the peach-tree, and thickened will do as well.

**BLACKBERRY WINE.**—A correspondent of the Southern Cultivator, gives the following recipes for making Blackberry Wine and Blackberry Cordial:

**MR. EDITOR.**—It may not be known to many of our young subscribers that they possess in the blackberry grown so unwillingly by them in their fields, the means, at once, of making an excellent wine and a valuable medicine for home use. To make a wine equal in value to Port, take ripe blackberries or dewberries and press them, let the juice stand thirty-six hours to ferment skim off whatever rises to the top, then, to every gallon of the juice, add a quart of water and three pounds of sugar, (brown sugar will do) let this stand in open vessels for twenty-four hours, skim and strain it, then barrel it till March, when it should be carefully racked off and bottled.

Blackberry cordial is made by adding one pound of white sugar to three pounds of

ripe blackberries, allowing them to stand twelve hours, then pressing out the juice, straining it, adding one-third part spirit, and putting a teaspoonful of finely powdered allspice in every quart of the cordial, it is at once fit for use.

This wine and cordial are very valuable medicines in the treatment of weakness of the stomach and bowels, and are especially valuable in the summer complaint of children.

**CURE FOR "SORACHES IN HORSES.** Wash clean with warm castile soap suds, then anoint with this mixture, well rubbed together:—Equal quantities of fresh lard, gunpowder and spirits of turpentine.

**SYRUP FOR PRESERVES.**—An excellent syrup is made in the following manner: Take 8 pounds of bright, clear New Orleans molasses or sugar house syrup, and mix with it 3 pounds pure water, and 1 pound of coarsely broken clean charcoal. Stir and boil the mixture 15 or 20 minutes and strain while hot through flannel. Wipe the kettle clean, and boil again with the white of an egg, till the syrup would form a candy in cooling, then strain again and put in the fruit and cook as usual. Preserves made in this way have a peculiar pleasant flavor, and keep better than when made with sugar.

**CURE FOR THE SUMMER COMPLAINT.**—This syrup is said to be a specific for the summer complaint. In 1832 it was successful in more than one case of cholera. To 2 quarts of the juice of blackberry, add 1 ounce loaf sugar,  $\frac{1}{2}$  oz. nutmeg and  $\frac{1}{2}$  oz. of allspice. Boil all together for a short time, then strain it and when cold add a pint of 4th proof brandy.

Take from a tea-spoonful to a wine-glass full according to the age of the patient, until relieved. It will spoil practice but save life.

**CURRENT WINE.**—Let your currants be ripe, mesh them with your hands and to every quart of the pulp add three pints of water. Mix them well together, and let them stand till they have done fermenting, then strain them through a hair sieve, and to every gallon put four pounds moist sugar. When the sugar is perfectly melted, put the liquor in a cask with a little dissolved isinglass. To every ten gallons, add one pint of brandy; barrel it up, and let it remain one year, then bottle it up.



## EDITOR'S TABLE.

**WATERTOWN CHRONICLE FOR SALE.**—Mr. Hadley, the founder and proprietor of this establishment, now offers it for sale, on account of declining health. We regret the retirement of friend Hadley. He has labored assiduously to build up his establishment, and has been eminently successful. Here is a rare chance for a printer, possessing a small capital. We know of none better. It is a paying establishment, and located in one of the most prominent and prosperous inland towns in the State.

**MINER'S DOMESTIC POULTRY BOOK.**—This is a new work of 256 pages, by T. B. MINER, Geo. W. FISHER, Publisher, Rochester, N. Y.; to whom we are indebted for a copy. This work is intrinsically valuable to every breeder of poultry, from the fact of its being a compilation of practical experience, which the author has collected from his own and that of other practical breeders. It is the quintessence of all its predecessors, while it possesses very much that is new and valuable. It contains no extraneous matter—each contributor imparting what he has to say as clearly and concisely as possible. We have examined the work thoroughly—for we are one of the fowl men of the day—and have no hesitation in pronouncing it a most useful treatise upon the rearing of poultry.

**NORTH AMERICAN REVIEW.**—The first three Nos. of a publication with the above title have been received. The work is edited by G. W. Binckley, and published monthly, at Cincinnati, by Abbott and Bentley, at \$2 per annum. Its articles are well written, and manifest much ability and shrewdness on the part of the editor. Its object is "to examine the leading questions in Politics, Religion, Literature and Commerce." It does this without fear, but not always without a *Silver-greyish* squint. It is peculiarly severe on the "Uncle Tom Mania." The articles on Literature and Commerce, which we have read, are good. While the Review exhibits to a good degree the conservative spirit, it is evidently slightly radical. While it is plain in its dress and words, it is neat and dignified in its appearance. We shall look for its coming from month to month, with more than a common interest.

The population of Philadelphia has increased thirty per cent. during the last two years.

**THE SCIENTIFIC AMERICAN.**—This useful work commences volume IX on the 17th, of September. See Prospectus.

**APPLETON'S MECHANIC'S MAGAZINE,** for August is on hand. Every mechanic should take this work, and we are sure every one would if self interest was consulted.

**MERITED.**—The Albany Atlas contains a long and well merited notice of the Agricultural Implement and Machinery Establishment of Messrs. WHEELER, MELICK & Co., Albany. Messrs. W. M. & Co., do a very extensive business, and their Machines are gaining a wide spread reputation. They employ over 100 men, and turn out a large amount of work annually.

**GREEN CO. AG. SOCIETY.**—The citizens of Green Co. have formed a County Agricultural Society. The following are the names of officers elected:

E. T. Gardner, President.

Wm. McDowell,

Thos. Fenton.

Jacob Teneyck,

Wm. C. Green,

John Broughton,

Hugh McKibbin, Vice Presidents.

J. V. Richardson, Recording Secretary.

J. A. Bingham, Corresponding Secretary,

James Bintliff, Treasurer.

**FINE WOOL.**—Geo. O. Tiffany Esq., of Milwaukee, who is one of the farmers, has sent us a fine specimen of wool sheared from one of his sheep, accompanied with the following challenge: "If any friend or acquaintance of yours, can show as good a sample of wool under the microscope, I will give him my sheep and a copy of the *Farmer* during his natural life time."

We reckon our chances here, for a life subscriber, extremely problematical. [Ed.]

**THE CANEER WORM.**—The papers from all sections of New England speak of the terrible ravages of this unwelcome visitor. As far as our observation goes, the apple trees are dispoiled of their foliage, and the fruit almost entirely destroyed. The worm seems to have disappeared—whether permanently, or to renew its attacks another season, cannot now be known. We trust our farming friends will omit no efforts to learn its habits and its character, so as to discover a remedy for its devastations.

[Conteook Transcript]

**PROSPECT OF THE HOG CROP.**—To most of our readers the prospect of the crop of hogs at the West is a matter of much interest, as upon that may depend the number fattened by small farmers in N. Y., and in other grain growing and stock raising States. In a recent issue of the Cincinnati price current, we find the following information with regard to the prospects at and near St. Louis, which is supposed to be reliable.

[Rural New Yorker.]

"The farmers are prepared for low prices for hogs this coming season. The crop will be larger than was ever known through Illinois, Iowa, and Missouri. I have heard of no contracts having been made as yet. Packers are of opinion the market will open here at less than \$4. The corn crop is good, and I am told by parties from different sections that hogs will be much cheaper than last year."

O. H. KELLEY, Secretary Benton County Agricultural Society, Minnesota, writes to B. P. Johnson, Sec. N. Y. S. Ag. Society:

"I notice some of the recipients of seeds from your Society, do not meet with success in raising the Wild Rice of Minnesota. The probable reason is, that you obtain it from the Indians, ready prepared for cooking, i. e., parched and hulled. When first gathered it has a hull, similar to the oat, or rather bearded wheat; it is then put into a frying pan and stirred over a slow fire, as we roast coffee, until dry enough, when they, (the Indians,) rub it in their hands, and blow the hulls away. I will try to gather some fresh seed for your Society in the fall, and at the same time give you an account of it. I see no reason why it can not be cultivated in the ponds in your parts, as at high water, during freshets, it is often washed out of the lakes, into the creeks and small rivers, where it takes root. It certainly needs no cultivation, more than to plant it."

**CARROTS FOR DYSPEPTICS.**—Young carrots are among the most wholesome of all vegetables and greatly assist digestion. French cooks, in many of their stewed dishes, introduce finely chopped vegetables, young carrots being the most important. Chemists have determined the carrot to possess a digestive stimulus which exists in a peculiar acid found in the vegetable.

The Farmers in Iowa say it is almost impossible to sleep at night on account of the racket made by the rapid growth of the corn. So says an Exchange.

**EXTRAORDINARY HEIFERS.**—The Journal of the New York State Agricultural Society for August, makes mention of two extraordinary Heifers, belonging to a Mr. Finlay of Saratoga. The heifers are 14 months old, nearly the size of ordinary cows, a cross of the Short horn and Dutch breeds. One of the heifers has quite a bag, and is giving milk: she has been kept upon the farm since she was dropped, and has had no access to a male. This is a very remarkable case, the like of which has seldom we believe, been noticed.

Boston is emphatically a railroad city. No less than one hundred and fifty-two trains leave there daily, viz:—17 by the Old Colony, 18 by the Providence, 25 by the Worcester, 26 by the Fitchburgh, 15 by the Lowell, 30 by the Boston and Maine, and 11 by the Eastern.

It is said that over three hundred thousand bushels of grain were destroyed by the fire in Oswego.

**HOGS.**—The Louisville Journal publishes a table of the number of hogs in eighty-eight counties of that State, over six months old, showing an aggregate excess on the number last year of 192,000 head. There is thirteen counties yet to hear from; the total increase in the State will therefore be about 215,000 head.

In Union College, Agricultural Chemistry will form an important department next winter, apartments being provided for it in a new building 80 by 50 feet, which also contains the finest apparatus room in this country.

**SULPHATE OF ZINC.**—TO FARMERS.—A correspondent of the New England Farmer, who was formerly a practitioner of Medicine makes some very interesting and useful remarks about the application of the sulphate of zinc in solution, as a wash for horses, cattle, sheep &c. He asserts that it is excellent for sore teats in milch cows, and mentions a few cases where its application was at once effectual and permanent. For washing all kinds of wounds and sores, we believe that the sulphate of zinc will be found in vantage by those who use it, superior to any solution with which we are acquainted. We have been acquainted for a number of years with its useful properties for inflammation of the eyes, for which a very weak solution should be used; also for washing all kinds of sores. So says the Scientific American, and other authority affirms what is here stated.

**NEW ADVERTISEMENTS.**—We call the attention of our readers to the advertisements of the MOUNT HOPE NURSERY, Rochester N. Y.—Messrs. Elwanger & Barry, proprietors; Catalogue of Agricultural Books—C. M. Saxton, Publisher, N. Y.; Ross' Conical Grist Mill—Joseph Sedgebeer, Agent, Geneva, Ashtabula Co., Ohio; L. Moses' Cabinet Shop, Janesville.

**MOUNT HOPE NURSERIES.**—We have received from Messrs. Elwanger and Barry their descriptive Catalogue of fruits for 1853—a very interesting and useful pamphlet of 28 pages. It contains a description of every kind of fruit, and of every variety of each, cultivated at the Mount Hope Nurseries, besides many useful hints to the cultivator. It may be seen at our office.

**NEW MUSIC STORE.**—We inadvertently omitted in the August No. to notice this new accession to the wants of our City. Messrs. Pease & Co. are prepared to supply any and all things in their line of trade, just as cheap and as good, and, perhaps, a little more so, than any other establishment in the West. See their advertisement.

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**VOLUME IX** of the **SCIENTIFIC AMERICAN** commences on the 17th of September. It is chiefly devoted to the advancement of the interests of *Mechanics, Inventors, Manufacturers and Farmers*, by the diffusion of useful knowledge upon those important branches. It is edited by men practically skilled in the arts and sciences and is widely regarded as a sound and able journal. Nearly all the **VALUABLE PATENTS**, which issue weekly from the Patent Office, are illustrated with Engravings, and the **CLAIMS** of all the **PATENTS** are published in its columns; thus making the paper a perfect **SCIENTIFIC and MECHANICAL ENCYCLOPEDIA** for future as well as present reference. The **SCIENTIFIC AMERICAN** is very extensively circulated—its circulation of the last Volume exceeding 18,000 copies per week. It is in form for binding; each Volume contains several hundred Engravings, and over *Four Hundred Pages* of Reading Matter, with an Index. The *practical recipes* alone are worth to any family much more than the subscription price.

The Publishers offer the following valuable prizes for the largest list of subscribers sent in by the 1st of January next:—\$100 will be given for the largest list; \$75 for the second; \$50 for the third; \$45 for the fourth; \$40 for the fifth; \$35 for the sixth; \$30 for the seventh; \$25 for the eighth; \$20 for the ninth; \$15 for the tenth; \$10 for the eleventh; and \$5 for the 12th. The cash will be paid to the order of the successful competitor, immediately after January 1st, 1854.

**TERMS:**—One copy one year, \$2; one copy six months, \$1; five copies six months, \$4; ten copies six months, \$8; ten copies 12 months \$15; fifteen copies twelve months, \$22; twenty copies twelve months, \$28 in advance.

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Letters should be directed to **MUNN & Co**, Fulton street, New York.

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