VOL. XVIII. [JUNE.] No. 6.

PUBLISHED MONTHLY. RUFFIN & AUGUST, PROPRIETORS.

FRANK: G. RUFFIN, EDITOR.

THE SOUTHERN PLANTER.

DEVOTED TO

AGRICULTURE, HORTICULTURE,

AND THE

HOUSEHOLD ARTS.

PRINTED AT RICHMOND, VA.,
BY MACFARLANE & FERGUSSON.
1858.

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THE SOUTHERN PLANTER

Is published monthly, in sixty-four octavo pages, upon the following

TERMS:

TWO DOLLARS AND FIFTY CENTS per annum, unless paid in *advance*.

Advance payments as follows:

One copy, one year, - - -	$2
Six copies, do - - -	10
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THE SOUTHERN PLANTER.

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK. G. RUFFIN, Editor. F. G. RUFFIN & N. AUGUST, Prop'rs

VOL. XVIII. RICHMOND, VA., JUNE, 1858. NO. 6.

For the Planter.

Ornithological Sketches—No. V.

April 27th, 1858.

My Dear Sir.—Having a little more leisure than usual to-day, I will resume our correspondence. All of our summer birds have arrived except the Baltimore oriole, and all are in fine plight and brilliant plumage. I wish that you could be here to witness their happiness, and drink in the music of their song. They carry me back to the days when I was young and happy too, and my own sweet-heart used to strike her guitar, and accompany it with a simple little air, two verses of which I will venture to give you, replete with harmony and truth:

"The mock-bird now is singing,
Come let us rove, my love;
The primrose gay is springing,
And Flora decks the grove.

This is a joyous season,—
Now woos the turtle-dove;
Around us all creation,
Is filled with joy and love."

Poor little birds! they had a hard time of it on Sunday, the 25th, during the snow storm. The Baltimore orioles alone were wise enough to hang back. We are never safe from snow till they get here. I see a great many white-throated finches piping about, and they also are very weather-wise, never leaving until the warm weather fairly sets in. The prognostication of the weather, from the actions of birds, engaged the attention of the old Roman farmers; and doubtless the study is worthy of ours. We can anticipate, by close observation of the departure of the birds that sojourn with us in the winter, and the arrival of those who spend their winters in Southern latitudes, in a great

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Note.—We accidentally deferred, until our friend's last Ornithological Sketch was in type, to correct his etymology in respect to the old proverb of "a hawk from a handsaw." It is not a hawk from an *anser*, which is rather too "high larnt" from the sancho who originated the saying. But it is, as our friend will be pleased to learn, for it will suit his taste exactly—"a Hawk from a Hernshaw," "Heronshaw," or Hernshaw being the bird, that in the old time, when Hawsing was the pastime of knight and lady, was the "quarry" or game that the hawk was used to take.—*Hamlet, Act 2, Scene 2.* Ed. So. Pl.

degree, what will be the character of the spring. And we can thus settle the question asked in the Planter as to the best time to plant corn. This is a matter of great importance to those whose lands are cold and stiff. On my farm, which is of this character, I find it best not to plant till the orioles come and finches leave. The Pamunkey Indians used to say, "when the white oak leaf is as big as a squirrel's ear, plant corn quick." The swifts or chimney swallows by many are supposed to indicate the passing off of wintry weather. I saw two of these twittering around my chimneys last Thursday, the 22d. But "one swallow does not make a summer," says the old proverb; nor are several any proof that the winter is gone and past. For their power of flight is so great, that a day or two can take them away back beyond the reach of frost.

But how do birds know when it is safe for them to come? Has a kind Providence given these beautiful little objects of his care a prescience necessary to their existence, and which he has withheld from man because it is not necessary? Or are they arrested in their march Northwards by the cold spell commencing in the South before it does in the North? These are questions as yet undecided.

By a comparison of my journal with the announcement below from the "South" of to-day, we can see that Doctor Franklin's theory of storms commencing in the South, may be extended to cold weather also:

"HEAVY FROST AT THE SOUTH."

"AUGUSTA, Ga., April 21.—There were heavy frosts last night in the middle and upper portions of this State. Also in the region of Mobile, fears are entertained of injury having been done to the crops."

By an inspection of my journal, which gives the height of the thermometer at sunrise, 2 o'clock and 9 P. M., you will see that on the morning of the 21st, when frost fell in Alabama and Georgia, the temperature here was 58° at sunrise, 70° at 2, 66° at 9 P. M. Wind S. W., clear. Note on this day: "I saw for first time crested fly-catchers, cat birds, red-eye vireo, and two swifts."

I suppose that all the birds South of the cold current of air that was dejected in Alabama, and which caused the frost, were arrested in their progress; whilst those North of it came on the wings of the warm South-west wind which was driven forward by the cold upper current from the N. E. falling down behind it, and becoming for a time the lower current still progressing towards the equator, and forcing the South-west current as it met it to rise above it. As the lower South-west current was cut off from its supply behind, being forced upward, the upper N. E. current would continually fall to the ground step by step on its heels in its progress to the North-east. So that the North-east wind that brought frost in Alabama on the night of the 20th April having receded in this manner, brought us the snow storm of the 25th. This was preceded by the North-west wind of Saturday the 24th, which would have given us a killing frost that night but for it clouding up and raining just before day and finally snowing. Possibly in the latitude of New York the warm South-west wind was blowing on the 25th, whilst the North-east wind was pelting us here with snow. Even as the cold wind was giving them frost in Alabama on the 21st, whilst the South-west wind was giving us pleasant weather here. When birds are delayed beyond their usual times of arrival, we may infer that they have met with cold weather, and that this cold weather will reach us by a retrograde movement from South to North. We will continue our extract from the journal:

"1858, 22d April.—Thermometer 62, 76, 62, S. W., clear. House wrens, towhe buntings, and Bartiam's vireo came to-day —23d—60, 76, 46, S. W., clear. At 3 wind cloud from S. W. accompanied by slight rain. Thermometer fell 22° in two hours. The wind changed to N. E. with cold rain at sunset. Saw this morning orchard orioles, and scarlet tonagers. White-throated finches as numerous as at any time during the winter."

Here I suppose the derangement and change in the current of air in Alabama on the night of the 20th first struck us.

"24th—Thermometer 44, 66, 40. North clear.

"25th—36, 34, 36, N. E. Rain in the morning; snowed fast from 9 till 2, P. M. Rain in the evening; cleared off at night; heavy frost before day.

"26th—34, 46, 36, N. E.; cloudy slight rain before sunrise which melted

the frost and ice, which was one-eighth inch thick, and I hope has thus prevented injury to the fruit. Bee martins, humming birds, orchard orioles, swallows, all gone. Plenty of cat birds, sandy mockings, wrens, goldfinches, white-throated finches, and mockings singing.

"27th—35, 56, 42, N. W.; cloudy in morning; clear evening. Saw several brown swallows and two cross bills."

The common cross bill, Loxia curveiostra, builds from Pennsylvania very far North, It is a pretty and very gentle bird. To-day I saw two females feeding on the seeds of the elm. They then lit on a willow oak, noar where I was turning up some rocks that had been placed around rose bushes, in order that a few cage birds which I had turned loose in the yard might pick up the insects concealed underneath. The tame birds would follow me from rock to rock, and Mrs. F. came out to remonstrate with me for disturbing her rocks, which she had carefully arranged. But in a little while she became interested in the movements of the birds, when she saw how much delighted a little cat bird was with the crickets. A cardinal grass beak, named Dr. Burrows, was as well pleased to craunch the hard shell black bugs as a D. D. would a hard shelled Baptist! And two wood thrushes, named Jack and Billy, were busily seizing the spiders, and an insect called by the negroes "old sows;" whilst a favourite mocking, named Dr. Jeter, was delicately mincing the wood lice and ants. This appearing fine sport doubtless to the cross bills, one of them flew and alighted upon a rock which I had just turned over, immediately between Mrs. F. and myself. We were standing so near to the rock that we could have joined hands over it. Little Richard Hugh, the cat bird, who jumped upon the rock so soon as I had turned it over, gave the intruder a very knowing look or two, and with a wag of his tail surrenderd his place to him. We stood stock still. After eating a minute or so the cross bill rejoined her companion, and flew to the elm trees.

I had thought to have descried the grunlets when I set down to-day. But I feel inclined just now to say a word or so in behalf of my friends, the cat birds. You may have observed that a man who is fond of children, always falls into *baby-talk* when he speaks of the dear little prattlers. Just so it is with the ornithologist. From Pennout down to Audubon, they all invariably slide into *bird-talk*. And this *bird-talk* is replete with hyperbole and superlatives. The bird which they are just then describing is either the *sweetest* songster of the grove, with the *richest* plumage or *most* engaging manners. Or if it be the turkey buzzard or the crow, of all birds they are the *most* useful to man, and should be universally protected as public benefactors! By this indiscriminate praise naturalists have overshot the mark, and the common sense of the people is outraged, so that they believe but little of what they say. I hope to observe the golden mean, and to say that of each bird what he deserves, and nothing more. It is true that I have as yet spoken little except in praise; but should I live to get to the history of the turkey buzzards and crows,

"I will a tale unfold,"

that will prove that such robbing, murdering miscreants are unfit to live in King William, however useful the former may be as scavengers in the streets of Charleston and other filthy cities; or the latter may be supposed to be in picking up cut-worms around the corn hills.

The cat bird is certainly amongst the unthinking, the most unpopular of all our birds, and he is persecuted with the most unrelenting ferocity. His nest, whenever discovered by negroes and children, never escapes destruction. The gardener shoots him, and the farmer gives his young to his children to play with. When I once remonstrated with one,—"Pshaw! it is nothing but a cat bird," he replied. I last summer endeavoured to ascertain from different persons the cause of this dislike. The first said, "he has such an ugly name." A second, "he has such a horrid voice, never singing at all, and hollowing *quoe* and *quet* all the time." A third, "he is so saucy." A fourth, "he is so ugly." A fifth, "he sucks up all the other bird's eggs, and eats their young!" A sixth, "he draws snakes!" A seventh, "he eats up all the cherries and strawberries." An eighth, "Oh I don't know exactly,—I hate him."

And now for our reply.

1. It is no fault of the poor bird if man has given him an ugly name. In this *we* have sinned against *him*. Doubtless if he could communicate his name by which he calls himself, it would be as soft and gentle as a zephyr. But if the common people have called him ugly names, naturalists have given him one as beautiful as it is appropriate—*Orpheus Carolinensis*—or Carolina Orpheus. He belongs to the noble family of the thrushes, and is of the same genus with the mocking bird or pollyglotter, and Orpheus rufus, that prince of song commonly belittled by the name of sandy mocking. I tell you, sir, not the nightingale himself could support such names as we daily give to our grandest songsters, and stand his ground in public estimation. There is much in a name! Do you think that Washington, had he borne the name of Sheepshanks, would ever have been "first in war, first in peace, and first in the hearts of his countrymen?" Henceforth away with the name of cat bird; let it degrade the mouth alone that uses it. Our Philomel shall be, in plain English, the Carolina Orpheus.

2. Instead of having no other notes than *quoes* and *quets*, every lover of nature knows that he sings melodies as soft and plaintive as Orpheus himself could have played in his search for his lost Eurydice. And then again he swells out into louder, bolder, and more harmonious songs than either the orpheus polyglotte or rufus can attain. It is true that when angry, or quarreling, or surprised, his notes are harsh, guttural, and grating to the ear. And in this respect he shows his good sense by speaking the language of nature. You would not have our orpheus when angry to "roor you as gently as a sucking dove?" As well complain of the wild scream of the eagle. He uses his gutturals for his enemies,—a usurping bird, a marauding cat, a cruel boy, or sneeking snake. He soon learns his friends from his foes; and one that he knows to be a lover of himself and family, he will permit to approach his nest and handle his young without any abuse. He will sing in a few feet of such an one, and seem to be pleased at his listening to his song.

3. His fearlessness and fondness for the society of man his enemies call saucyness.

4. So far from being an ugly, I think it a very pretty bird, with a graceful form, and possessing great activity.

5. Whence the charge of egg-sucking and robbing other birds of their young originated I know not, unless from the habit the old ones have of carrying off the eggshells from their own nests when their young have hatched. They seem to be proud of this, and carry the eggshells from bush to bush before they drop them as a trophy of their success. Our orpheus is a very fond parent, and very tender-hearted towards the young of other birds; and will make as much ado, if they are molested by cats, snakes, or men, as if they were their own. I knew them to feed a young robin that was put in a cage and set near their own nest.

6. It is possible that, in common with other birds, they do draw snakes to the shrubbery near a dwelling for the purpose of eating their young. But the orpheus detests snakes, and ever keeps up a close lookout upon their movements, and will be sure to give information of their whereabouts to the man of the house, if he has observation enough to learn their language. I have killed many a black snake, garter snake, and viper, crawling about my premises that I never would have known of had these birds not told me. It is astonishing how soon they learn what the man is about that helps them to kill a snake once. Whilst I was at dinner last summer the cat birds gave the alarm of snake. I sent a little servant girl to keep the marauder in check. She returned and said the birds were quarreling with one another. I knew better so I jumped up and took a large pair of garden shears in my hand. There were four or five old birds in a terrible state of excitement, fluttering in and out of a cedar hedge near the stable. They did not move at all out of my way, for they knew I was their ally that had turned the scale of victory in their favour in many a contest before. Great was their joy and exultation at my approach, as they gathered around a large black snake coiled up on one of their nests. I reached out my long-handed shears, and took his snakeship firmly by the middle, between the steel blades, drew him out, and cut him asunder. He had swallowed two of the young birds, all that were in the nest

The old ones approached his quivering body,—nor did they cease to thump and pick it as long as it showed any signs of life.

I have frequently heard that snakes had the power of charming birds, and have read many marvellous accounts thereof in Burnoby's travels in Virginia, written more than a hundred years ago, and in other publications, down to the present day. Indeed I had witnessed the facts myself, and had heard sensible and well informed men, speak of it as a settled thing, which they had often seen. Very few persons in Virginia doubt it at all. I do not believe a word of it. The first incident that caused me to doubt it, occurred a dozen years ago. In the same cedar hedge that runs around my yard, I discovered a pair of cat birds very singularly affected. They were fluttering around a spot on the top of the hedge which was closely trimmed, making the most plaintive and wailing cries,—approaching it with one wing raised and the head and body thrown back under cover of the upraised wing. I crept up close to them, and saw a long, keen black snake, about the size of my middle finger, with a white throat. Here, I thought, is a case of charming. The snake was partially coiled, with his head raised and his gaze fixed intently on the birds; and they seemed to be drawn to him by an irresistible spell. The birds were near enough for him to have seized and swallowed either of them; and nothing, I thought, but his diminutive size prevented his doing so. I felt vexed that so young a rogue should be showing his tricks upon objects too large for him to profit by them; so I struck him a sharp blow with a fishing rod I had in my hand, but with little injury, for he glided off into the thick hedge, and soon lost him. The cat birds soon found him, however, and went through the same process of being charmed. With their help as often as lost I succeeded in finding, and at length killed him, and cut off his head. I threw him down by the hedge, and started on my way, but on looking back, was surprised to find that the headless snake had still the power of charming the birds, and they were fluttering around him with the same distressed cries as at first. Well now, thought I, these birds are under the magnetic influence of the snake, they as yet are unable to throw it off, and were forced to come to him. They begun to approach him nearer and nearer, and struck him with their wings, and pulled at him with their beaks, and finally got upon him and tugged away in dead earnest. This looks very much like fighting, said I to myself, and it may be the birds were only coming to the snake for the purpose of fighting him at first. I soon had another opportunity of killing another snake and carrying him near a nest of cat birds, that were not at all under his magnetic influence, for they had never seen him before that I knew of. I threw him down, and the dead snake charmed the birds as effectually as the living one. From repeated observations, I am convinced that snakes have no power of this kind, and the birds are only trying to thrash them off from their nests. That they are often caught in these attempts I do not doubt, though I never witnessed such a fact.

7. That our orpheus is fond of cherries, mulberries, blackberries, raspberries, and strawberries, I am free to admit. But the lover of nature had better plant out a few extra cherry trees, and cultivate a little patch of strawberries, and then he will have enough for himself and the birds too. They will richly repay him by the worms, slugs, grasshoppers, and other injurious insects, which they destroy in great numbers. And their sweet songs are worth more than all the berries they will consume.

I have discovered that he is guilty of a more serious crime, which I have never heard him charged with; and the very mention of which I am apprehensive will array against him a host of enemies. Yet I will neither falsify nor suppress the truth of history. He is very fond of eating bees. Generally the dead ones that fall on the stand or ground near the hives. But occasionally he will kill a bee if pressed by hunger. Still I rather look upon his visits as advantageous, on the whole, to the bees. He clears away all the dead ones that might engender disease, and picks up every moth around the hives, besides hunting them all over the grass yards and lawns. By light you will see him busy around the bee stands, and if he can get dead bees and moths enough, he never ventures on the living ones;

and then it is generally the old ones whose wings are worn too much to fly. But when he does venture, he kills them very adroitly, and picks them to pieces before swallowing. He kills the red wasp and hornet in the same manner. I think I may safely say that I have more bees and honey than any other farmer in this county, and more cat birds, too, for I never kill them. Nor do I often kill the bee martin, who certainly is a great destroyer of bees. This proves that birds and bees may be raised in the same yard in great abundance.*

The Carolina Orpheus travels at night in his migrations from the South. On the evening of the 20th, I looked out anxiously for my favourites, but could not see one. The next morning on going out into the porch, I heard his sweet, delicate song, so low and soft that it seemed like what in my childhood I imagined the music of the sons of the morning to have been when they sang together. He possesses a power like that of the ventriloquist's, and seems to be far off when he is close at hand. There he set in twenty feet of me, whilst a little further were perched five or six other males, answering each other in the same delicious strain. The next day their notes were loud and strong, and they were full of life and activity. At times you would see them all collected on the same bush, as if holding a consultation, —one beginning a sweet piping note, and the rest joining in in regular order, each swelling and puffing himself up, and displaying the bright chestnut under their tails, and cutting all kinds of grotesque antics. They seldom fight each other, and seem to be fond of each other's society.

The orpheus is a sweet, gentle bird, with a kind affectionate heart, and wins upon the esteem and love of those intimately acquainted with him. He does not sing much in a cage during the first winter, yet he bears confinement well, and becomes very much attached to the person who feeds him. My little favourite, Richard Hugh, will follow me about like a young chicken with its mother when I turn over the rocks for him; he leaps up to my hand to take an insect out and seems to be very happy in cold weather if he can sit on the round of my chair and warm himself. During the winter he often was alone in my study, and was very fond of stretching himself on the hearth, rumpling up his feathers as chickens do when they sun themselves. He is very cleanly in his habits, and bathes himself regularly every day. He is rather a favourite with the other birds, never fighting them,—but is a sort of a wag, and likes to frighten these young mockings by chasing them up and down and around their cage, though he never touched them when he caught them. He is very adroit in getting his share of good good things, such as insects, apples, dried peaches, raisins, &c., and will always take a good mouthful to himself of those things from the mouths of the other birds before they can swallow them. He is of a very inquisitive turn, and is fond of getting on the bottom shelf of my book case, where I keep pamphlets and newspapers, and rustling amongst them, and pulling them to pieces. Everything strange there he would quote and quae over, and I really become fonder of these notes than any other, from their reminding me of summer. Richard Hugh and Dr. Burrows spend their time very amicably in the same cage. He sometimes ruffles the Doctor's temper a little by snatching a grasshopper or cricket from his mouth. He was much put out by the return of the birds of his own species this spring. They seemed determined to court his acquaintance, but he would always retreat to his cage, not liking their appearance.

The Carolina Orpheus retires from the U. S., with a few exceptions, in October, and breed from N. C. to Mass. Its nest is quite large, and placed in a weeping syringa rose bush or cedar. It lays five or six smooth, glossy, greenish blue eggs in May, and invariably brings forth two broods in a season.

F.

To F. G. Ruffin, Esq.

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* We have lately seen it stated that the bee martin catches only drones, the craw having been frequently searched in vain for working bees. Ed. So. Pl.

From the Massachusetts Ploughman.

The Robin---Its Food and Habits.

The robin was violently assailed last autumn through the columns of the *Daily Evening Transcript*, by "Horticulturist," who would not be satisfied with any thing short of the entire extermination of the beautiful and pleasant songster, because, forsooth, he picked cherries and other garden fruits, and as was alleged, avoiding insects in consequence of his being a Grahamite, and thus, from necessity, eschewing all animal diet, being strictly frugivorous, subsisting almost entirely upon garden fruits.

Red-breast was defended from this exterminating assault, by an advocate who, while he admitted that the sweet singer, the farmers' and gardeners' pleasant companion, picked some fruit, claimed also that he is a destroyer of insects whose destruction tended to promote and greatly increase the fruit crops, maintaining, moreover, that without this aid on the part of the birds, there would be no cherries.

At the January meeting of the Massachusetts Horticultural Society, an interesting discussion was had on the robin, its food and habits, and its relation to Horticulture. The law prohibiting its destruction was severely condemned by fruit growers, who regarded the bird as "a perfect nuisance," and were about to draw up a petition, asking for its immediate repeal.

The other side of the question also found able advocates, says the *Transcript*, from which we have this extract, with Professor Jenks's letter, till finally, after a long discussion, the result was the appointment of a committee with full power to investigate the matter thoroughly during every season of the year 1858, to ascertain the habits of the bird as fully as possible; to find out the nature of its food during each month, by examination of the crops of specimens killed at all seasons, and of different hours of the same day; and to report from time time at regular meetings of the society.

In accordance with the duty imposed upon them, the committee have made their report for the months of January, February and March, and as the question respecting the utility of the bird has been long mooted, and is of general interest, I forward the report to you for publication. It will be observed that thus far the investigation has resulted very much in favor of the robin; but from this we must not draw too hasty a conclusion, for during but one month thus far have robins been found, and the report of the next three months may be proportionably as great against the bird.

In this investigation the committee would solicit the aid of any interested in the settlement of this vexed question; and certified facts on the subject, or specimens with communications stating the locality, and time when killed, would be thankfully received by any member of the committee.

ONE OF THE COMMITTEE.

Boston, April 26th, 1859.

MIDDLEBORO', MASS., April 23, '58.

MR. PRESIDENT:—It will be remembered, that at the January meeting of your Society, it was proposed to make the food of the robin (*Turdus migratorious*) a subject of special investigation throughout the year, to the end that we might arrive at some positive conclusion in reference to its utility to the horticulturist.

As chairman of the committee appointed upon the investigation, I herewith submit a report of progress with the following results:

First.—No robins were seen in this region, not even in our extensive cedar swamps, during the months of January and February—they being thoroughly explored by my direction every few days. Early in March, however, numbers made their appearance, but until the second week in April only the *male* birds.

Second.—I found the crops of those killed in the morning either entirely empty or but partially distended with food *well macerated*, while those killed in the latter part of the day were as uniformly well filled with food freshly taken.

Third.—From the almost daily examination of their crops from the early part of March to the present date, I have obtained and preserved in alcohol, *ten* varieties of food, consisting of larvæ, coleopterous insects (beetles,) orthopterous (grasshoppers,) and araneidaus (spiders.) But nine-tenths of the aggregate mass of food thus collected, consists of *one* kind of larvæ, which belongs to the curculio family; but, as yet, I am unable to determine the species. I have frequently taken a hundred from a single crop, and, in one in-

stance, I found one hundred and sixty-two, all in a fresh unmacerated condition. Casually, when this larvæ is found, it is the only food in the crop.

Fourth.—To the present date, I have not discovered the first particle of vegetable matter in the crop of a single bird.

Presenting the above, Mr. President, as the result of our investigations during one sixth of the year, it is

Respectfully submitted,
J. W. V. JENKS, Chairman.

To JOSIAH STICKNEY, ESQ.,
Pres. Mass. Horticultural Society.

This is certainly a good beginning,—and more favorable to the robin than was claimed by his advocates, Helicon and others. He did not claim what Professor Jenks has demonstrated, and confirmed by exhibiting to us the contents of the crop, containing "the larvæ of the curculio family," one of the most destructive tribes of insects known to fruit-growers, as all will admit. It is no matter, therefore, what the next three months develope. Enough has already been demonstrated to teach all to spare the robin.

Protect the birds, we would say to every farmer and gardener. You may save your fruit from being destroyed by them in various ways, short of exterminating the birds.

One very simple method is to tether a cat,—more than one if need be,—among your strawberries, fruit, shrubs, &c. This has proved successful, as stated by English gardeners who have tried it, and recommend it. Birds are afraid of cats, and will not perch near where old grimalkin is stationed. RURICOLA.

CURE FOR DYSENTERY.—Take Indian corn, roasted and ground in the manner of coffee, (or coarse meal browned) and boil in sufficient quantity of water to produce a strong liquid like coffee, and drink a teacupful (warm) two or three times a day.—One day's practice, it is said, will ordinarily effect a cure.

THE weed known as "smart weed" which may be found in abundance along ditches, roads, lanes and barn-yards, is an effectual and certain destroyer of the bed-bug. A strong decoction is made of the herb, and the places infested with the insects thoroughly washed with it.

No good housewife will fail to avail herself of the practical hints contained in this valuable article.—EDS.

Preparations for Winter.

BY HETTIE HAYFIELD.

As we pick up our pen, "on useful thoughts intent," the vision of the fair young housewife, in her afternoon leisure rises vividly before us. She sits in the green twilight of a bower, over which the clustering grape and flowering honeysuckle have woven a canopy; in this, as in all her home surroundings, she has happily blended the useful and the beautiful. And now as she watches the unsparing reaper as its skeleton hand gathers every blade she exults in the advance of philanthropic science, or, perhaps, muses on the inevitable hour when relentless death shall sweep over the teeming fields of human life. From such scenes as this, this greenest of summer, from such purifying thoughts as these, it seems cruel to recall her to the wearisome drudgery of life, yet if she heed not, too, the busy bee, and toiling ant, who store, beside her, for winter wants, we fear the hour will come when her presidency over the home circle may be voted weary, stale and unprofitable. For "flesh is flesh," and Fanny Fern never edged a keener satire against man than when she declared his stomach the portal to his heart.

Our limits are too brief to furnish many particular receipts; we will have to content ourselves with generalities rather.

The different divisions of housekeeping are nearly all tributary to the winter storeroom. We hope the young housewife laid her foundations for success long ago, by putting in a first rate garden, proper attention to the orchard, and that her dairy and poultry yard are in high thrift. If so, the poultry yard is filled with chirping broods of every desirable variety that need but care to be fatted by thanksgiving, and day by day adds some to her stock of winter eggs, which may be preserved, by being put in small jars on the little end. In our experience they will keep months with no further care, but longer if dipped in a thick solution of gum arabic, drained and dried. We used to-day, some put up April 1st. Commonly they are kept by covering them with water, saturated with lime, and having dissolved in it likewise, one pint of salt to

one gallon of water. Lime, salt or strong ashes will partially cook eggs sometimes if packed in them.

DAIRY.

May is considered the charmed month for packing butter, but we think any grass season, with a dairy of right temperature, good. We think cheese making best followed however in summer, as there is usually time enough in cool fall weather to lay up a stock of winter butter, and less risks to be run by the inexperienced.

VEGETABLES.

Beside the great variety of vegetables raised purposely for winter use, there are many now commonly preserved which are used only to grace the summer banquet.

Lima beans dried in the pod when it begins to grow yellow, are nice. Lima beans and green beans, in a green state, may be packed in alternate layers with salt, and, after soaking, be cooked as in summer time.

Corn deprived of all but the inner husks can be kept in strong brine and looks very natural. It may be cut after slightly scalding and strongly salted and put up in close cans. It may also be dried after scalding.

Okra and pumpkins may be sliced thin and dried for winter use.

Tomatoes may be stewed done, drained and spread in cakes an inch thick and dried. They may be kept in brine or cut off with a stem and kept, not touching, on shelf, in a cool place, for a long time. ossessing the variety of fine vegetables as e do for every season, we cannot append note of admiration to the above recipe. omatoes prepared as for table, corn ditto, d green peas and asparagus slightly baked d put up in tight cans, as fresh fruits are, have eaten, and esteem the *two first* eap luxuries.

Fruits dried, potted, preserved, &c., &c., stitute the burden of the housekeeper's e, and in the shape of preserves, pickles, ., &c., we think, have by far too promit a place in our bills of fare. But the servation of fresh fruits, we consider an ance in sanitary economy.

o begin properly, have a supply of bot- or cans capable of being sealed air t. A boiler in which the empty cans be set surrounded with water, which t be boiling briskly, while they are befilled with fruit. A preserving kettle in which to scald the fruit and another to heat the syrup in. For bottles, have corks that fit very tight, even after dipping in boiling water. Have a wide mouthed funnel to pass the fruit through, and a perforated ladle to drain it with. A vessel of melted sealing wax and some bits of ice or cold water convenient. Take sound, fresh fruit and prepare it precisely as for table use. Prepare a kettle of syrup of the fruit, if possible. When you are sure the syrup is boiling, and the fruit is boiling hot through and through, begin your operations. Fill your cans, while in the boiling water, with fruit; fill up every crevice with boiling syrup; close the can immediately, fill the grooves with wax, lay on the wax a piece of ice or some cold water to cool it instantly; smooth it down firmly with a knife, and if you use tin cans, set them at once in cold water. *To seal up instantly in air tight cans, sound fresh fruit or vegetables, while boiling hot, is the whole mystery of potting.* Two parts bees-wax and one of rosin makes a good sealing wax. Plaster of paris mixed with water (small quantities at a time) makes a good seal for pickles. Old time cans, made when soldering was practiced, can be made very convenient, by having a ring two inches deep and one inch larger in circumference than the opening put on them. A cork fits into the ring as well as in a bottle and makes the can quite as convenient. If your fruit keeps well it will shrink from the mouth of the bottle and the cans will show no signs of swelling, and will sometimes become concaved, slightly. A cool, dry place is of first importance for keeping potted fruits, preserves &c.

PRESERVING.

A wide porcelain lined kettle is best, if metal is used; the fruit must never cool in it. A perforated skimmer to drain the fruit out with, and large dishes on which to cool it. Preserves keep best in small vessels, and should be kept air tight. Seal them when you put them up, and when opened, if not used at once, tie them over with oil cloth, leather, or thick paper, wet with the white of an egg.

The best of sugar is required for preserving, and for superior preserves *that* will require *clarifying*. 1 lb. of sugar to 1 lb. of fruit is the usual allowance, but acid fruits or jellies require one and a half pounds.

Citron is made of the melon of that name, water melon rinds, or cantelopes. Peal and cut it to your fancy. Soak it a night in salt water; boil it one hour in alum water, putting layers of grape leaves between, if you wish to green it, changing them several times. Lay it in cold water for two hours. Then boil it until transparent, in a fine, clear syrup, season it with any essence you prefer.

Quinces should be stemmed, the flower bud cut out, and boiled until easily pricked with a fork. Then pealed, and cored or quartered, and set away for some hours with the sugar strewed amongst them. Some water will probably have to be used in making syrup for them. Boil them until clear and cover with a syrup nearly as stiff as jelly.

Apples, peaches, pears and plums are made in the same way, using no water if you have syrup enough from the fruit. Small fruits do not need the prepatory hardening. They should be stemmed, stoned, &c., and boiled until done. Preserve a few at a time if you wish to preserve their shape. If scarce of fruit you may strew them with sugar some hours before you cook them, and they will spare a good quantity of juice for jelly and yet retain enough to be preserved in.

Jams and marmalades are made of fruits mashed to a pulp and stewed with equal quantities of sugar until very thick.

JELLIES

Are made of the juices of fruits procured by boiling and pressure. The liquid must be strained through flannel strainers until transparent. To each pint of juice allow 1 lb. of best sugar, and stir in the beaten white of an egg for each pint of liquid. Boil and skim until you find it jellies well. Long boiling or exposure to the air darkens jelly. If scarce of fruit, you may only boil the juice to a thick syrup, and bottle it. When required for use, dissolve a half ounce of clear ising glass in one pint of syrup, and it will scarcely be distinguishable from pure fruit jelly. It must not be tough by excess of gelatine.

Conserves.—The article we have met in the best houses of our State, do not come under the definition of this word in the best authorities. We have seen pears, quinces, tomatoes and citron preserved and dried in the sun and then kept in layers of dry sugar. These fill a basket as nicely as prunes or figs. Marmalades may be made dry and consistent enough to be sliced and cut into fancy shapes for the same use. Citron is prepared in this way for fruit cake.

Brandy Fruits—Are made by pouring over them a rich syrup of sugar, agreeably flavored with the above anti-temperance exhilerant.

DRINKS.

Shrubs are made of the juices of acid fruit, currants, raspberries, lemons, &c. Prepare precisely as for jelly, only boiling to a syrup. Bottle and when diluted with water, if not sour enough, use a little tartaric acid.

Cordials—are the pure juices of fruits, prepared as for shrub, and flavored strongly with white brandy and sometimes alcohol. Blackberry cordial is highly spiced.

Wines—are the juices of grapes or other berries which after fermentation are bottled—sometimes sugar is added. Any careful housekeeper may make better drinks than are generally marked with the best brands. But it is expensive and troublesome; and morality considered, better dispensed with.

Vinegar.—The best is made of cider, weakened and set in a warm place until it sours. We add one valuable, because easy and cheap receipt.

Boil one gallon of shelled corn in 12 gallons of rain water until reduced two-thirds. Drain off the liquid, mix in it 2 lbs. of molasses or sugar, 1 gallon of good cider vinegar, and 1 pint of hop yeast, rolled up in pieces of thick, white paper. In bottles kept in the sun this will be fit for use in six weeks.

PICKLES.

Keep kegs or jars ready to receive your pickles as gathered. Those of no peculiar flavor can be put together, such as cucumbers, melons, &c. Put in pickles and layers of salt and pour over just enough water to keep them well covered. The brine should be strong. A coarse cloth and weight pressing down the pickles all the time. From time to time, when you wish to use them, soak them in clear water until free from salt, then green them with grape leaves and alum water. Scald them

in moderate vinegar for ten minutes, and tie them up closely in jars. After a few days, drain off this vinegar and pour over them strong spiced vinegar. boiling hot.

Mangoes—Are of young musk-melons, large peppers, tomatoes, &c. They are freed from the seeds and after the first scalding in vinegar filled with scraped horse raddish, seeds of coriander and mustard, chopped pickles, &c. The piece cut out is then nicely fitted in, and they are proceeded with as other pickles.

Cold Pickles.—Vinegar may be seasoned agreeably, with salt, spices, &c., and cucumbers, nasturtions, peaches, and many other fruits are nicer for being pickled without scalding. These pickles require time for perfection.

Yellow Pickle—Is made of white cabbage or cucumbers, or of blanched vegetables. The bleaching is done by keeping the vegetables in the salt, slightly covered with salt. Before the spiced vinegar is poured on them it is colored highly with teumeric.

Sweet Pickles—Are made of almost any fruit. Peaches are freed from fur, not pealed, for this use. Pears, pealed, plums pricked with a fork and cherries placed between their own leaves. Over the fruit a rich syrup of vinegar and delicate spices is poured boiling.

CATSUPS.

These are made of walnut, tomato or mushroon juice, procured by mashing, salting slightly, and (after standing some hours,) pressing severely. The juice is boiled to the consistency of cream, skimmed clean and flavored as pickles.

Cucumbers grated up, peaches mashed to a pulp, or tomatoes chopped fine and then pressed dry make a delicious catsup. Season the dry pulp with vinegar and spices. Peaches prepared thus and seasoned with vinegar and sugar are very nice.

Flavored Vinegar—May be made by steeping the seed of any desired flavor until it is impregnated. Celery vinegar is nice for chicken salad.

If cabbage or celery are scarce in the fall, you may chop them fine, pack in jars and keep under strong vinegar. They answer well for hot slaw or chicken salad.

DRIED FRUIT, CIDER, &C.

Fruits are dried either in the sun or on kilns. The last is quickest and easiest, but needs care to prevent burning. Spread paper over your kiln, peal your fruit, slice it thin, and it will dry fair and well flavored. Small fruits should be sprinkled thickly with sugar when just moist enough to melt it. When dry, packed in jars with layers of dry sugar between, it is as nice as potted fruit for pies.

Cider making belongs to the lord of the manor. While it is going on, filter some through charcoal for winter use. Likewise convey some to your kettles direct from the press, boil it down to syrup; then peal some of your sweetest apples and stew them in it to apple butter. Season it with spices if you like. Wild grapes may be preserved in this syrup. Nice jelly can be made by clearing, skimming and preserving, by boiling down cider without sugar.—*Valley Farmer.*

Renovating Articles of Wearing Apparel.

The art of removing stains from clothes produced by acids, grease, mud, coffee, wine, etc., is denominated scouring. To carry the process to perfection requires not only vast experience, but some practical knowledge of chemistry. Our observations upon this subject must therefore be only received as applicable to the ordinary cases of stained fabric; because so much modification of the process is required to be subservient to the various colors and materials worked upon that nothing but practice can teach. The commonest marks are grease spots, and to scour them out of silk or satin the best materials to employ are ox gall or turpentine.

If gall be used, it should be quite fresh, unless it is purified, of which we will speak hereafter. If turpentine be employed, it should be distilled, and perfectly free from rosin. The preparation called "scouring drops" is pure turpentine, perfumed with essence of lemon. Either of these substances may be applied with a piece of sponge, or with a remnant of the same material that is being cleaned. When the grease spot is large, the greater part may be removed, in the first instance, by the application of blotting paper and a hot iron. If the stain upon silk or satin is produced by an acid, such as fruits, and that upon black or dark colors, the best re-agent is liquid ammonia (strong hartshorn) rubbed in till it disappears.

For plain and figured silks, or delicate colors, we cannot give a general applicant, and therefore leave them to be operated upon by the professed *degraisseurs*. To obliterate grease spots on white silk, we may proceed as directed for colored silks; but fruit, ink, and glove marks require a different treatment. These marks are generally removed by damping the part with oxalic acid dissolved in water; about the eighth part of an ounce in a wine-glassful of water is strong enough. The common salts of lemon in water also answers well.

Coffee stains, mud splashes, etc., will mostly give way to the use of soap and water. Curd soap should be applied for this purpose. For grease spots upon cloth and all kinds of woollen goods, soap and water may be used without fear, provided it is well washed out afterwards. Fuller's earth, or powdered French chalk, made into a paste with water, and laid upon the part, is, however, the best applicant, to be brushed out when dry. Paint marks are removed with turpentine, the smell of which may be quickly dissipated by hanging the article upon a line in the air.

The clarified bile, or gall, as it is termed, of the ox, is invaluable to painters in water-colors; it not only increases the brilliancy and durability of the colors, but makes them spread better upon paper, and especially ivory. When purified it is also much used by scourers for renovating the delicate coloured silks and satins. In its natural state it contains greenish coloring matter, and is then only applicable for restoring the brightness of dark materials. It is discolored thus: Take one pint of gall; boil and skim it; then divide into two parts; to one half pint add half an ounce of salt, to the other add half an ounce of powdered alum; each part is to be heated till the additions are dissolved; then pour into separate bottles, and allow them to stand and clear (in a quiet place) for a month or eight weeks, even longer if not bright. The clear portions of both are then to be poured gently off the sediments and mixed together; the coloring matter coagulates and falls, from which the transparent gall is finally separated by filtering through bloting paper.

Scientific American.

Pickles.—Miss Leslie, in her Complete Cookery, prefaces her recipes for pickles with some remarks, from which we make a few extracts suitable for the season. Never, she says, on any consideration use brass, copper, or bell metal kettles for pickling; the verdigris produced in them by the vinegar being of a most poisonous nature. Kettles lined with porcelain are the best, but if you cannot procure them, block tin may be substituted. Iron is apt to discolor any acid that is boiled in it.

Vinegar for pickles should always be of the best cider kind. In putting away pickles use stone or glass jars. The lead which is an ingredient in the glazing of common earthen ware, is rendered very pernicious by the action of the vinegar. Have a large wooden spoon and a fork, for the express purpose of taking pickles out of the jar, when you want them for the table. See that, while in the jar, they are always completely covered with vinegar. If you discern in them any symptoms of not keeping well, do them over again in fresh vinegar and spice.

The jars should be stopped with large flat corks, fitting closely, and having a leather or a round peice of oil-cloth tied over the cork.

It is a good rule to have two-thirds of the jar filled with pickles, and one-third with vinegar.

Alum is very useful in extracting the salt taste from pickles, and in making them firm and crisp. A very small quantity is sufficient. Too much will spoil them.

In greening pickles keep them very closely covered, so that none of the steam may escape; as its retention promotes their greenness and prevents the flavor from evaporating.

Vinegar and spice for pickles should he boiled but a few minutes. Too much boiling takes away the strength.

How to make Vinegar.—To one quart of molasses add three gallons of warm rain water. Stir well, and set the mixture near the stove in an open vessel, and it will soon form "mother," the most of which should be removed, when the vinegar is sharp enough. The "mother" may be added to other vessels of the mixture, and the vinegar will be made in a very short time.

Wm. McPherson.

Prairie Farmer.

Produce of Butter.

One of the April numbers of an English Agricultural journal contains the following table, containing information valuable and interesting to the dairyman.

"The relation of the food given, to the quantity and qualtity of the milk produced, is brought out very well in the following table, extracted from a paper in a recent No. of the Journal of the Albert Institution."

No. of experiment.	No. of Cows.	Date of commencing with experiment.	Date of finishing experiment.	Kind of Feedings which Cattle Received.	Produce. Gallons of milk.	Quarts of cream.	Pounds of butter.	No. of quarts of milk to produce a qrt. of cream.	No. of quarts of milk to produce a lb. of butter.	No. of quarts of cream to produce a lb. of butter.
1	5	May 21,	May 27,	Clover and rye grass with a few hours grazing,	89⅜	30¼	30	11.7	11.9	1.1
2	7	June 22,	June 28,	Winter vetches and grazing as above,	122¼	41	39¾	11.95	12.32	1.2
3	6	July 21,	July 27,	Clover and rye grass, second cuttings,	96¼	27	26	14.29	14.7	1.2
4	6	Aug. 19,	Aug. 25,	Cabbages and grazing,	87	31	26¾	11.22	13.38	1.19
5	6	Sept. 23,	Sept. 29,	Clover, third cuttings,	74	28	23	10.57	12.86	1.21
6	6	Oct. 19,	Oct. 25,	Mangel Wurzel leaves and dry hay,	50½	23	15½	8.78	13.3	1.48
7	6	Nov. 22,	Nov. 28,	Mangel Wurzel leaves and dry hay,	40¾	20	15	8.15	10.86	1.33
8	6	Dec. 13,	Dec. 19,	White turnips and barley Straw,	33¾	19½	14¼	6.92	9.47	1.36

Observations—It took an average of 10½ quarts of milk to produce a quart of cream; an average of 12 qts. of milk to produce 1 lb. of butter, and an average 1 1-5 qts. of cream to produce 1 lb. of butter. The average yeild of butter from each cow was 154 lbs., the average price per lb., 9¾d. The milk vessels were earthenware, (glazed;) the milk was left setting for thirty-six hours in summer, and forty-eight hours in winter; the cream was churned once a week."

Country Gentleman.

Cheap Butter-Cooler.—A writer in the Scientfic American says: "Procure a large, new flower-pot of a sufficient size to cover the butter-plate, and also a saucer large enough for the flower-pot to rest in upside down; place a trivet or meat stand (such as is sent to the oven when a joint is baked) in the saucer, and put on this trivet the plate of butter; now fill the saucer with water, and turn the flower-pot over the butter, so that its bottom edge will be below the water. The hole in the flower-pot must be fitted with a cork; the butter will then be in what we may call an air-tight chamber. Let the whole of the outside of the flower-pot be then thoroughly drenched with water, and place it in as cool a spot as you can. If this be done over night, the butter will be as 'firm as a rock' at breakfast time; or, if placed there in the morning, the butter will be quite hard for use at tea hour. The reason of this is, that when water evaporates, it produces cold; the porous pot draws up the water, which in warm weather quickly evaporates from the sides, and thus cools it, and as no warm air can now get at the butter, it becomes firm and cool in the hottest day.

Scratches or Cracked Heels.

Mr. John Muir having written a letter to Prof. Copeman of the Boston Veterinary Institute, asking his advice upon the subject of treating Cossack for cracked heels, and stating his general condition, received a reply through the August number of the Veterinary Journal, which contains so much good sense and information that every man who knows anything about a horse will at once pronounce it correct. We copy it for the information of those who are filled with the ideas which the Professor combats:

Mr. Muir writes,—

"Cossack has been troubled with *cracked heels* more or less for the last year, and has what is usually termed *scratches*. I bought him in Detroit in April, and before I had brought him home, and had fed him much, I had him bled twice by a veterinary surgeon He told me his blood was corrupt and bad. I have given him nothing but a few Epsom salts occasionally in his feed, and have applied an ointment to his heels with good success, but fast work seems to have a tendency to open the cracks again. There is no fever apparently in his legs, and no appearance of *grease whatever* about his heels. He has gentle walking exercise

daily, and now almost all the cracks are well. I presume his system yet wants cleaning. * * * His season will close soon, and I have thought of giving him a run to pasture for a month, or would you keep him up and soil him? Now, Mr. C., I want to get his heels sound, and keep them so. Can anything be applied that will make the skin tough."

To this Prof. Coleman replies:

Utica, June 29th, 1857.

JOHN MUIR, ESQ., Dear Sir:—I have the honor to acknowledge the receipt of yours of the 22d inst. Your full description of the past and present condition of Cossack, relieved me of all difficulty respecting the *nature* of his ailment." The horse's general health is good, still he is troubled, as you say, by a simple local affliction, "cracked heels." In reviewing tkis *local* disease, as a result of *general disease*, you have fallen into a very common error. The extent and evil of this absurd "humoral theory" is plainly seen in the folly of the Detroit veterinary surgeon. He must have studied the veterinary art as it was practiced during the "dark ages." To take a common sense view of the matter, "cracked heels" and "chapped hands" are *similar* affections; to produce either we have only to wet the skin several times a day and leave the parts to *dry* by *evaporation;* this rapidly lowers the temperature of the skin, leaving it in an irritable, unhealthy condition; if this be frequently repeated we sooner or later get "cracked skin," or what in horses is termed "scratches." Here permit me to ask what would any sensible man think of the genius of an M. D., who, in such a simple case, should gravely inform him that "his blood was corrupt and bad," and he must be put through a thorough course of bleeding, physic, &c. We know the "simple public" never ask any questions when *giving* or *taking* physic. Still we think *any sensible man* would at least make an odd face, and either laugh at the doctor's stupidity or sneer at his impudence. Our advice is, first, knowing the cause avoid it as far as possible; keep your horse at all times in good working condition, carefully proportion his feed to his work, and always bear in mind the fact, that a "fat, indolent" animal is *predisposed* to disease, both local and general, even more so than a very poor one.

Whenever a disposition in the limbs to "stock" is observed, handrub them well at least twice a day; let the work be regular but moderate, always avoiding fast work. Should the heels be washed or wet from work, always rub dry or bandage with flannel, as soon as the horse is put in his stall. When the heels are thoroughly dry, carefully examine, and if any part is very red or cracked apply glycerine with a soft piece of cotton, or better, a camel's hair pencil, night and morning. If the case is of *long standing*, the edges of cracks thick, discharge gluey, apply a strong solution of sulphate of zinc, viz: zinc 1 part, rain water 4 parts; but *observe never* in "scratches" use this or any other caustic *oftener* than here advised. This caution is given because daily experience long since convinced me that much of the *apparent* difficulty in healing scratches is due to the two frequent interference of the attendant. It is a very easy matter to destroy the living tissues as fast as nature forms them. Avoid ointments and greasy preparations of every kind; all *oils* iritate the skin of the horse.

You ask, "can anything be applied that will make the skin tough?" This is like asking "can man improve the works of his Creator?" In no tissue of the living body is there more exquisite wisdom displayed than in the skin. This beautiful *envelope* in the horse is protected *externally* by one of the *toughest* of all the elastic substances known, (hair;) under this we find a membrane, tough, strong, yet pliable as India rubber, (epidermis;) the entire surface of the *true skin* may be said to be made up of millions of air-cushions, (hair follicles,) each being embedded in and surrounded by oil globules, and to complete the wonderful organism, every part is held together and supported by the most exquisite "spring mattress" ever seen by man, (elastic cellular tissues.) Can man improve work like this? No, no.

Now if your horse is in "good condition," I should not turn him to pasture; a few weeks run at grass would only make him "soft and washey," requiring four or six months good care to bring him into his present condition, saying nothing of the ill effects of "fly stamping," "musquito stinging," &c., &c.

Yours, &c.,

A. S. COPEMAN.

Michigan Farmer.

Feeding Hogs.

EDITORS OF THE VALLEY FARMER —I perceive that my short and imperfect article in your November number, on the comparative economy of fattening hogs by turning them in the field, on corn, and grinding and cooking the corn for them, has had the good effect of drawing from you a very able reply in your issue for December. Your arguments and figures are certainly very plausible, but you must excuse me for not being convinced by them. Your calculations are all based on the experiments instituted by Mr. Samuel H. Clay, of Kentucky, which I am inclined to believe would have produced very different results had they been differently conducted. (*a*) Mr. Clay says that his hogs on dry corn gained only "five pounds ten ounces," in one instance, and "six pounds ten ounces" in the other, to the bushel; he must have fed them very sparingly. Mr. Watkins a very intelligent farmer of this county, put up two common hogs, weighing less than 200 pounds gross, and fed them dry corn *with his own hands*, and they made an average gain of eleven pounds and a quarter to the bushel. This is but little below the average yield attained by Mr Clay in his trial with cooked corn or mush. In making your estimates by which you make it appear that there is a "saving of $11 25 in feeding one hundred bushels of corn" cooked into mush, against an equal quantity fed dry, you only take into consideration the cost of the labor of one hand at $1 25 per day, which is alone required to steam and feed the mush to the hogs. You leave out entirely the cost of gathering the corn which is worth 5 cents per bushel, shelling and carrying to the mill 5 cents more, and the grinding which we cannot get done for less than 10 cents. Add this necessary and additional expense of 20 cents per bushel, to the hundred bushels of meal, and you have $20 00 *in expenses*, to be offset by $11 25 *in savings*. (*b*) This is not all the expense necessarily incurred in feeding mush to hogs, you must be prepared with floored pens, steamer, vats, troughs, &c., which you estimate to cost "$1,000." On this outlay there must be an interest of at least 20 per cent calculated, because the fixtures exposed to the destructive propensities of hogs will not last more than five years. I think the summing up of the difference between turning hogs in on the corn in the field, against feeding them cooked meal, would be about this: Every bushel of corn fed in the field worth 25 cents will make ten pounds of pork, worth at 4 cents per pound 40 cents; (*c*) profit on the corn 15 cents per bushel. Every bushel of corn, worth 25 cents, when ground and made into mush costs 46 cents, which will make 14 pounds of pork, worth at 4 cents per pound, 56 cents; profit on the corn 10 cts. per bushel. The cooked meal account must also be charged 20 per cent on $1,000, the cost of fixtures, while the turning on the field plan, must be credited by 10 per cent of the value of the corn which will be returned to the land in the form of manure. You ask triumphantly, "is it not cheaper to cook 100 bushels of corn, than it is to raise 50 bushels?" I answer yes, to cook it in the ears, but if in the form of meal, I say emphatically, no. (*e*) We can cultivate an acre of land that will yield 50 bushels for $9 00, and cannot gather, shell, haul, grind and cook 100 bushels for less than $20 00.

The limits of this paper will not allow me to enter into a discussion of the comparative anatomy and physiological difference between swine and human beings, but it is sufficiently striking to arrest the attention of the most casual observer. The most economical method of fattening hogs is what I have been trying to ascertain for a number of years; it is a business in which I have been engaged ever since I became a farmer, and if after *fair* experiments I am convinced that your plan is cheapest and best, I shall certainly embrace it. My object is to arrive at facts, which we can accomplish in no other way than by free interchange of opinions, and well conducted experiments.

Very respectfully your obedient servant,

B. A. RIVES.

Ray County, Mo., Dec. 1857.

REMARKS:—We are glad to find that what we have said upon the importance of a better preparation of food for stock is attracting the attention of farmers, and if we can provoke a number of them to go into well conducted and thorough experiments in feeding hogs and cattle, we are of the opinion that it would be the means of converting them to our views on the subject.—We will take the occasion to reply to a few

points in Mr. Rives' communication in which we think we shall show that he has somewhat missed his calculation.

(*a*) One word in regard to Mr Clay and his hogs. We visited Mr. Clay's place once or twice during the progress of the experiment.—That the whole trial was faithfully conducted, no one that is acquainted with Mr. Clay, will for a moment doubt; his object was cheifly to satisfy himself of the value of cooking the food. That the same results would follow in every instance, we have some doubt. Mr. Clay's stock of hogs were of superior quality and such as are seldom met with, for besides being one of the best and most careful breeders in the country, he has taken unusual pains to improve his stock, and in this effort he has been remarkably successful.

(*b*) Our correspondent seems entirely to overlook the terms upon which we based our calculations. We assumed that to be successful in this method of feeding, perfect and well arranged fixtures must be provided. With the exception of what corn the hogs can eat from the stalks in the field from the time it is old enough until the close of the season, it will require to be gathered, and the cost will be no greater in one instance than in the other. The shelling and carrying to mill, for which our correspondent charges 15 cents per bushel, is another item which we do not admit in our account, for, with one of the ordinary crushers like the *Little Giant*, the shelling and grinding is accomplished at one job and this may easily be done by the same man who cooks and feeds the hogs, and at most, an additional hand is not required but a portion of the time, if at all, so that we are not willing to admit the validity of our friend's charge of $20.

(*c*) Nor are we willing to admit that one bushel of corn consumed in the field by the hogs will make ten pounds of pork during the entire period of fattening. This may be true for a short time when they are first turned in, while the weather is warm and the grain soft, but quite different will be the result, which we know from personal experience, after the corn has become hard and the weather cold. Hogs can be much better protected from the cold when fed upon the plan we have proposed than when suffered to range the cornfield exposed to the chilling winds and the mud.

(*d*) Ten per cent for wear and tear will cover all cost for steamer and other fixtures, if made substantial and taken care of as they should be.

(*e*) Our correspondent admits what we assume that 100 bushels of corn can be cooked in the ear cheaper than 50 bushels can be grown, and we are equally sure, with the addition of the extra hand, we have charged in the case of cooking the corn in this form, that the same labor will grind and cook it with only the additional cost of a mill, say $40 00.

To settle the point satisfactorily to all parties, we hope Mr. Rives and others may be induced to test the question by careful experiment, entering upon the work entirely unprejudiced and give the world the result. To do this no costly fixtures need be procured, but the cooking may be done in the simplest manner; this will test the advantages, if any, of cooking, and the cost and capacity of more extensive and complete works may be regarded as a simple matter of calculation clearly ascertained.

Valley Farmer.

Utility of Birds and Snakes.

These are among the most useful of the farmer's aids, in securing his crops from insect depredations; and yet manifest as this is to every observing man, they are frequently pursued and hunted from the premises as if they were his worst enemies. The martin, the swallow and the wren, which may almost be considered among the domestics of the farm; and the sparrow, the robin, the blue bird, the woodpecker, bob-a-link, the thrush, the oriole, and nearly all the songsters of the field accomplish more for the destruction of noxious flies, worms and insects, which are the real enemies of the farmer, than all the nostrums ever invented. And hence the folly of that absurd custom of scare-crows in the growing cornfields and orchards, to which I have alluded. The chickens and ducks do the farmer more benefit than injury in the garden and pleasure grounds, if kept out of the way while the young plants are coming up. A troup of young turkeys in the field, will destroy their weight in grass-hoppers every three days, during their prevalence in summer or autumn. A pair of sparrows, while feeding their young consume over three thousand catterpillars a week. One

hundred crows devour a ton and a half of grubs and insects in one season. Even the hawk and the owl, the objects of general aversion, rid the fields and woods of innumerable squirrels, moles and field mice. The last are frequently great depredators upon the crops, after having exhausted the stores of worms and insects which they invariably devour, and to this extent these little quadrupeds themselves are benfactors. The smaller species of the hawk and owl, when pressed by hunger, will resort to grubs, beetles, crickets and grass-hoppers, in the absence of larger game. That loathesome monster, the bat, in its hobgoblin flight destroys his bulk of flies in a single night. Slight injury may occasionally be done to the grain and fruit by the smaller birds, and when thus intrusive, some temporary precaution will suffice to prevent much loss. But whenever loss may thus occur, the balance of benefit to the farmer from their presence, is generally in their favor; and instead of driving them from his grounds he should encourage their social visits by kind and gentle treatment, and by providing trees and pleasant shrubery for their accommodation.

The *Toad*, apparently dull, squat, and of the soil's hue, whatever that may be; he sits quiet and meditative, yet watchful in the thick shade of some overgrown cabbage; and as the careless insects buzz by, or the grub or beetle crawl lazily along, unheedful of danger, he loads his alder-manic carcass with the savory repast.—Sixteen fresh beetles, a pile equal to his fasting bulk, have been found in the stomach of a single toad.

The *striped snake* is a harmless object about the farm premises, and like the toad, he is a great gormandizer of worms and insects. The sole drawback to his merits, arises from his frequently feasting on the toad and frog.—*American Farm Book.*

Hæmaturia in Cattle.

Hæmaturia signifies *voiding of blood with the urine.* In cattle raising districts, this disease, or rather the symptons of one, is generally known by the term, "red water," although a very marked difference exists between *hæmaturia* and a mere discoloration, or reddened appearance of the urine; for in the former case blood globules are invariably present, and their presence can be determined by procuring a sample of the urine; after letting it stand for a short time, the blood coagulæ may be detected by the naked eye, at the bottom of the vessel in which the urine is caught.

CAUSES OF HÆMATURIA; ITS CHARACTER AND SYMPTOMS.

The voiding of blood with the urine is generally supposed to be occasioned by some violence, such as local injury in the lumber region, calculi within the ureters or the bladder; from local hemorrhage, occasioned by congestion, or inflammation of some portion of the urinary organs. Congestion is apt to occur in overfed animals, and perhaps is an effort of nature to phlebotomise the subject and reduce the amount of circulating fluid, and thus lessen the liability to accumulate adipose tissue. If such be the case, (the patient being in a state of plethora,) no immediate danger is to be apprehended; especially is this the case when the hemorrhage is merely passive, unaccompanied by symptoms of pain either at the time, or between the periods of urinating. A case of this character might very properly be termed *congestive hæmaturia*, and may be treated on the same principles which prevail in the practice of intelligent physicians in the management of other local congestions. Nephrites (inflammation of the kidneys) may occasion hæmaturia, and is almost always accompanied by sure and unmistakeable symptoms, viz: those of pain and irritation, either in the act, or else, before or after urinating. It may be difficult to determine what is the exciting cause of this inflammatory condition; it may be purely idiopathic, or may arise from the irritation consequent on the passage of urinary calculi, through the parts involved, and notwithstanding there are certain diagnostic symptoms attending both varieties, still, the medical attendant (who has just seen the case for the first time,) may find it hazardous to venture an opinion on its exact pathology; yet, he shall not be at fault in treating the case as a local, inflammatory affection. If it can be shown that the animal has been dosed with strong diuretics, and no hemorrhage had existed prior to their administration, but is now quite profuse, we may safely conclude that the hemorrhage is occasioned by the local stimulus. It may, therefore, be laid down as a

general rule, that all cases of hæmaturia, attended with symptoms of pain, are occasioned by the irritation of some foreign body acting on some part of the secretory surface of the urinary apparatus; or else, is the result of some external violence, and it is the business of the medical attendant to carefully consider these matters, in view of forming a correct diagnosis.

Hæmaturia does occasionally occur in nursing women, of a plethoric diathesis; at the period of weaning the infant, the woman notices, on urinating, that the fluid is tinged with blood, but, as the act is unaccompanied by pain, and nothing of the kind being felt in the region of the kidneys, she feels no alarm about it, and scarcely, if ever, consults a medical man on the subject. In the course of a few days, all things being favorable, the urine assumes its natural appearance; therefore, if hæmaturia shall appear in a cow at the period of "drying her up," as the saying is, or if a mare shall be observed to pass blood in the urine, at the time of weaning her foal, and neither the one nor the other manifest any discernable symptoms of pain, nor any perceivable manifestations of derangement in the vital functions, there will be no necessity to resort to any very active mode of medication, and an intelligent physician would merely recommend a mild laxative, light diet, and a little nursing. A few doses of nitrate of potass might be indicated as a febrifuge; this may be dissolved in the animal's drink.

We intend in the next number of this "Journal," to furnish an article on an affection which prevails extensively in the West, known as "Red Water," and the above remarks are written in view of drawing the line demarcative between hæmaturia and red water.—*American Veterinary Journal.*

Good vs. Bad Breed of Hogs.

Reader, did you ever see a shoat while rooting kick up every time he bored his nose into the ground, as if trying to stand on his head? If so, don't buy him; he will not prove a profitable feeder. We might call these a sub-soil variety.

Did you ever see a hog that would grab an ear of corn and run a quarter of a mile before he would stop to eat? If so, beware. We will place them in the same category and for the sake of distinction will call them the elm peelers. Did you ever see a tall, slab sided, long legged, razor backed breed that were always hungry, and when opportunity required, would climb up to where the rails in the fence were some distance apart, and then either slip through a crack or throw off a few rails and jump over? If so, don't purchase unless you are a small farmer and can't possibly build corn cribs. We might, perhaps, call these free soilers or else barn burners.

Did you ever see a slim, dead alive kind of thing that would get so poor as to be obliged to trot before and canter behind when required to get up motion, and still not die; its eyes both coming out at the same hole, or at least so near it that the hog appeared cross-eyed? If so, let us pass the dismal picture and simply call them old liners. All these breeds may be described as follows: Long ears, large, heavy heads, long and thick legs, a streak of lean underneath a thick gristle and that covered with a thick, tough hide, with abundance of bristles, and, in fine, a great amount of offal of every description.

Such animals have no thriftiness, no capacity to fatten, and very little about them that is digestible after they are killed.

Considering the number of hogs that are raised annually in the United States, and especially as so many depend almost exclusively on the hog crop for the money they need, is it not wonderful that so few persons take pains to obtain the best varieties? Suppose you have to give $20 or even $50 for a pair of pigs to begin with. Is this an insufferable obstacle? I answer no. Doubtless you may procure a good breed for less money, but let us look at the practical proof, on the score of economy and see how long it would take it to pay at these figures. Suppose you have 100 hogs of the alligator or land pike breed which you sell at $5 per hundred. 150 pounds at twelve months old will be about all you can make them weigh. Here you have $7 50.

Again, take 100 hogs of a good breed which will weigh at the same age and with less feed, 250 lbs. Here you have $12 50, making a clear profit of $5, without taking into account the save in feeding, which would, no doubt, swell the profits to a much larger amount. A hog that has to be kept more than one winter, before fattening, will

eat his head off in all cases. Hence the most profitable kinds will be found in those hogs which attain the greatest weight (without extra attention) in from 12 to 18 months.

Pick for a hog with a small, clean head, rather small bone, body low to the ground, long and square, hams full and round, disposition quiet and pleasant. Such a hog will always insure a good return. If you can come across such hogs, whether called Berkshire, Woburn, Suffolk, Grazier or what not, get some and try them. They will not disappoint you.

A word to the wise is sufficient.—*Valley Farmer.*

Smoke for Wounds on Animals.

Mr. Editor:—I have two valuable remedies, and not being able to find either of them in any agricultural work with which I am conversant, I place them at your disposal. They are *smoke* and *molasses*. My father once had a vicious horse eight or ten years old, which he altered, hoping to make him more manageable. The operation being not well performed, the cord dropped off, the poor animal bled till he could scarcely walk without reeling, and the parts swelled to an alarming degree, and father having in vain tried every expedient at his command to remove the inflammation, gave him up for lost, and told me to drive him into the woods and there let him die. Fortunately, at this stage of the case, an old Pennsylvania teamster came to our relief, and recommended smoking with old shoes. A smoke was made of old shoes, soles and all, cut to pieces, in a hog trough, and placed under the swollen parts. In a few hours the swelling wholly subsided and the sore commenced discharging matter—the horse was saved.

Some years after this I heard two persons talking about a horse which had been gored in the abdomen. In this case, too, everything had been tried in vain. The poor creature must die. At my suggestion he was smoked, and when I next heard from him the old horse was well. So much for old wounds.

In the same year I cut my foot with an axe. The lady of the house, seizing the foot while it was yet bleeding freely, held it over a pan containing smoking tag-locks. In a few minutes the bleeding stopped, and the smoke was removed, and the bandage applied to protect it from accidental blows. The wound never maturated, and consequently never pained me. I have seen this remedy tried in many similar cases, and always with the same results. Let the reader bear in mind, that no liniment or salve, drawing or healing, should be applied. You have merely to smoke the wound well, and nature will do the rest.

I suppose the smoke of burning wood would produce the same results, but it would not be so manageable. There is a principle in the smoke of wood which, when applied to flesh coagulates the albumen, thus rendering it unsusceptible of putrefaction. The same principle stops bleeding by coagulating the blood. It promotes healing, and may be applied with decided benefit to almost all ulcers, wounds and cutaneous diseases. See Turner's Chemistry, by Liebig and Gregory, p. 1242.

For chapped hands and lips molasses is the best remedy I ever used. If my cows have sore teats, or an ox chafes off the outer skin so as to occasion the blood to start, I apply molasses.—*Cor. of Country Gentleman.*

The Spanish Horse.—Spain was early celebrated for her breed of horses. The Andalusian charger and the Spanish jennet are familiar to all readers of romance. The subjection of so great a portion of the peninsula to the Moorish sway, by introducing so much of the Barbary blood, mainly contributed to the undisputed excellence of the Spanish horse. One breed long in the limbs and graceful in all its motions, was the favorite war-horse of the knight; while another race, carrying the esquire, although inferior in elegance, possessed far more strength and endurance.

The Spanish horse of the present day is not unlike the Yorkshire breed of England; perhaps with flatter legs and better feet, but far inferior figure.

Medium-Sized Horses.—These are, doubtless, better for common use than very large ones. They are more supple and active; they require less food; they are adapted to a greater variety of work; and for these reasons they are more readily bought and sold. To secure good medium-sized horses take a good, compact mare, which weighs from 1,200 to 1,400 lbs. and

breed to a horse weighing from 1,000 to 1,200 lbs. The mare should be larger than the horse, both should be vigorous, well knit, fine-shaped animals.

Earth Worms.

Mr. Editor :—In the more solid earths, clays, and clay loams, a long, cylindrical worm abounds, much sought for by truant boys and sporting men, who affection the trout, perch, &c. This is a genuine worm, never appearing in another form, as do many of the so called worms. In the early spring, and during rains in the summer, the earth worm is lively, penetrating the earth in all directions. When the soil is dry, this worm goes downwards, forms a chamber, and coils itself into a very close knot.

The earth worm is an important agricultural laborer. I have met with two short statements in regard to the service rendered by it to the soil, which may interest the readers of your paper. A scientific writer on Zoology says :

"The burrowing of earth worms is a process exceedingly useful to the gardener and agriculturist; and these animals are far more useful to man in this way, than they are injurious by destroying vegetables. They give a kind of under tillage to the land, performing the same below ground that the spade does above for the garden, and the plough for arable land, loosening the earth so as to render it permeable to air and water. It has lately been shown that they will even add to the depth of soil; covering burrow tracts with a layer of productive mould. Thus, in fields that have been overspread with lime, burnt marl, or cinders, these substances are in time covered with finely divided soil, well adapted to the support of vegetation.

That this result,—which is most commonly attributed by farmers to the "working down" of the material in question—is really due to the action of the earth worm, appears from the fact that in the soil thus formed large numbers of "worm-casts" may be distinguished. These are produced by the digestive process of the worms, which take into their intestinal canal a large quantity of the soil through which they burrow, extract from it a great part of the decaying vegetable matter it may contain, and eject the rest in a finely divided state. In this manner a field manured with marl, has become covered, in the course of 80 years, with a bed of earth averaging thirteen inches in thickness."

White, in his "Natural History of Selborne," says :

"Worms seem to be great promoters of vegetation, which would proceed but slowly without them, by boring, perforating, and loosening the soil, and rendering it pervious to rains and fibres of plants, by drawing straws, and stalks of leaves and twigs into it, and most of all by throwing up such infinite numbers of lumps of earth, called worm-casts, which being their excrement, is a fine manure for grain and grass.

"Worms probably provide new soil for hills and slopes, where the rain washes the earth away; and they affect slopes, probably to avoid being flooded by water. The earth without worms would soon become cold, hard bound, and void of fermentation, and consequently sterile."

[*C., in Granite Farmer.*

From the Southern Farmer.

Soapsuds Effectual for Destroying Chinch-Bugs.

Messrs. Editors: Among the many tribes of insects which devour the vegetable products of the farmer, that numerous species called chinch bugs are at present the most alarming. Should they increase from year to year (and we see nothing to prevent except the powerful operation of some natural cause unknown to us,) they will in time not far remote, sweep all before them. It seems necessary, in order to concentrate our efforts in one common cause against our numerous enemy, that investigations and experiments should be made known. An experiment fairly made, whether successful or not, will have its use. If successful it is of great importance; if not it will prevent a repetition, and may lead to one of more efficacy. There are many ways proposed for destroying the bug which so much injures our crops. Soapsuds I had seen recommended as a destroyer of the bug, and with a view to satisfy myself of it, I tried it on a small scale, and it kills all with which it comes in contact. The experiment was completely decisive that

suds is effectual to the bug, and there is no doubt of its acting successfully if made very strong. I made the experiment last Friday week ago, and to be certain that the bugs were killed, I visited the spot the day after and found them on the ground and stalks of corn as I left them; and to be better satisfied that they were dead, I gathered about a teaspoonful of them in a small box, and they have not yet kicked, that I know of, since they gave up the ghost. It is said by some persons that soapsuds will not destroy them but merely stupify them. If such is the result of their experiment, it is because the suds was not made strong enough; if made sufficiently strong and the bugs thoroughly soused, they will die in a short time, and pretty effectually so too. Any how, such is the result of my experiment. But soapsuds, like most of the remedies suggested, is too slow and tedious for the application to be made on a large scale, and cannot be attended with much success unless frequently applied; and the expense of money, time and labor to accomplish it, one would not be repaid for in so doing. I've given this account of my little experiment for the purpose of showing what has come under my observation, as there seem to be contradictory opinions respecting the efficacy of suds as a destroyer of the bug. With regard to it as a certain destroyer of the bug, I can speak with much confidence. I dare say that Mr. Turnbull's idea of saving the corn crops from the ravages of the bugs by sowing a belt of land in corn between the wheat, oat, and corn fields in the months of April, May and June, is a good one, and well deserves a trial by the farmers next year. I think it advisable as soon as they congregate in prodigious numbers in the broadcast corn, to use means to destroy them, as we may in this way easily exterminate them by the wholesale. Soapsuds, in my opinion, would be one of the easiest, cheapest and surest remedies to use. We must fight as well as feed them. It seemed to me that the Chinese sugar cane of any kind, sowed broadcast as suggested by Mr. Turnbull, would be preferable on account of the sweetness of its juice to our common Indian corn. It would be well to try the experiment at at least. It is to be hoped that some more effectual means to arrest the ravages of the bugs than have yet been discovered will be found out. I shall be glad to learn, through your paper from time to time, the result of experiments, and shall have no hesitation in communicating such as come to my knowledge.

I am, with much respect,
Yours obed't serv't,
Amelia Co., July 27, 1856. B.

The Wheat Midge.

Wheat, the most important of all our staple crops, is liable to more casualties and depredations from various insects, than any other cultivated in the United States.

The wheat fly, commonly called the Hessian fly, is said to have been introduced into the United States by the Hessians in the time of the Revolutionary war. For many years the injury to the wheat crop caused great alarm among the farmers of this country. By change of seed and by early and late sowing the depredations of this insect have, in some degree, been checked of late years in our country.

The most formidable enemy to the wheat crop now in the United States is known under the name of Wheat Midge, (*Cecidomyia Tritici.*) Of the manner by which it was introduced into our country, we believe it is not generally known. The Wheat Midge was first clearly recognized in 1820, in the north west part of Vermont, but Dr. Fitch claims to have some evidence that it was in our country several years anterior to that date, although it did not become so numerous as to attract particular attention until eight or ten years afterwards. In England it was known as early as the year 1771. Since its depredations have become alarming, and its habits observed and understood, it is ascertained that it is making a steady and gradual yearly progress westward. When we first saw it in 1835, it had reached Albany County, New York; it has since extended over a considerable portion of Ohio and Indiana, where in 1854, the loss resulting from its ravages amounted to millions of dollars. So generally destructive was it in New York in that year, that Col. B. P. Johnson, the efficient Secretary of the New York State Agricultural Society addressed circulars to the principal wheat

growers of the State, with the enquiry, "To what extent was the wheat crop in your vicinity injured by the midge?" The facts thus derived were authentic and complete, and placing the estimates at the lowest figures and far within the truth, it was ascertained that the value of the wheat destroyed by this insect that year, at the fall prices, amounted to the enormous sum of *fifteen millions of dollars*.—Estimating the wheat thus destroyed at the price to which it afterwards rose in the market the same season, the amount of loss would have been several millions greater. In several States, the present season, the crop of wheat has been much injured, though to a less extent than in 1854.

The Midge is among the smallest insects visible to the naked eye.—*Valley Farmer.*

Romaine's Steam Cultivator.

The *idea* of steam cultivation retains its hold of the English agricultural mind.—In the Western States also, where some of the largest farms in the world are to be found, the desire to harness the steam horse to the plough is so strongly felt, that large rewards have been offered for the discovery of a practical method. We cannot say that the want of a steam cultivator has been much felt, or is likely to be for some time to come, in Canada. Our small farms, our stumpy, stony, knolly, and in many cases, hilly fields, seem better suited to animal than to elemental power—to the slow but obedient ox, to the active and easily managed horse, rather than the heavy, complicated, dangerous (in unskilled hands) and expensive steam locomotive—even admitting that it can be made to cultivate the soil successfully under favourable conditions. As a stationary power for general purposes, steam is unquestionably superior to any other yet known. Water may be cheaper where it can be had in sufficient quantity, but it is not so manageable in this climate, and being confined to those spots where it exists naturally, is unadapted to a variety of purposes. But steam has never yet been successfully applied as a strictly portable power, except in the two cases of steamboats and railroads. The immense weight of the engine itself offers, apparently, an insuperable objection to the use of steam power in the field, where it is required to move with its work. Boydell's engine, with its movable track, is the most successful attempt yet made to overcome this difficulty. We hear of its achievements in transporting heavy ordnance over marshy ground, and it would, therefore, seem, as a matter of science and fact, that this engine has solved the problem. But, that it will or can be made to supersede animal power in the field, under the ever-varying conditions which must be there encountered; that it will be able to compete with such power on the score of economy, has not yet been proved. We doubt if it will ever succeed in the contest. If destined to triumph any where, it is evident that it will only be upon large and tolerably level farms, such as may be found in England and the Western States.

Our attention has been turned to this subject by the appearance in the London *Illustrated News*, of an engraving and brief description of Mr. Romaine's Steam Cultivator, as improved by Messrs. Crosskill, the celebrated implement manufacturers. The following is the description which appeared in the *News:*

"Romaine's Cultivator.—Crosskill's Romaine steam cultivator differs from all others hitherto brought before the public, in entirely dispensing with ropes and in effecting its work without dragging ploughs or other implements. It is not a plough; it is a rotary digging machine. It consists of a fourteen-horse locomotive machine, mounted on a pair of very high broad wheels, with a pair of small wheels on the principle of chair-castors in front, which are used only for steering; a fifth wheel on the near side, behind, is used for setting the depth of cultivation. The cultivating part of the machine consists of a hollow iron cylinder, six feet six inches in length and two feet six inches in diameter, armed with curved iron knives, or hoes or claws. As the machine travels very slowly over the land—about a mile an hour—the toothed cylinder, which projects several inches on each side beyond the broad wheels, turns round and digs up the stiffest clay soil to the actual depth of from six to twelve inches, stirring the earth, of course, deeper than the points of the claws, and leaving the surface in a fine tilth.—From the manner in which the cylinder is attached, and the angle at which the claws

enter the ground, bricks, stones, and roots are either divided or thrown out of the soil, or passed over without injury to the machine. The cutters are of wrought iron; under ordinary circumstances they sharpen themselves; and, if broken, they can readily be replaced, as each is secured separately by bolts to the outside of the cylinder. The steering apparatus is very ingenious. The large wheels only are driven by the steam engine. When the machine has to be turned round, one large wheel is left stationary, and the other being driven while the front wheels are guided by the driver, the engine can be turned round in its own length.

"The first public trial of this machine in its present improved shape took place on the 11th September, near Beverley.—'It commenced operations at one end of a field of strong clay stubble, and traversed the entire length, transforming a breadth of 6½ feet into a perfect seed-bed, equal, as some said, to what could have been produced by twice ploughing and harrowing, or clod-crushing. On its arrival at the headland it turned round in less space than a plough with a pair of horses, and returned, leaving, after an hour's work, no vacant space except two small headlands, which could easily be finished when the rest of the work was completed.' It will be observed that the wheels never touch what has been once cultivated, and the cultivator perfectly obliterates the marks of the wheels. The strength of this machine lies in its slow motion and the great breadth it cultivates.

"A flywheel, it will be observed, is attached to the machine, and when stationary, with the cultivator thrown out of gear (which can be done in an instant,) it may be used for all the ordinary purposes of a portable agricultural steam engine — to drive a thrashing machine, to grind corn, to pump water, &c.

"Some enthusiastic writers in the Yorkshire papers suggest that the 'Romaine' may also be used to supersede farm horses, and take corn to market; but we do not believe that the inventor or manufacturers have any such notions, which, in the opinion of the first engineers of the day experienced in attempts at road engines, are perfectly illusory. Horses are cheaper machines for traction on common roads than steam engines—that was proved 20 years ago.

"The machine is now open to the examination of any agriculturist, and at work every week near Messrs. Crosskill's works, is the fourth that has been built, each being an improvement on the last. The idea of the machine occurred to Mr. Romaine in 1850. The first machine was built at Mr. Mechi's expense, 1853, and led that enthusiastic gentleman to write to the *Times* that 'the doom of the plough was sealed;' the second was built in Canada, under the encouragement of Lord Elgin, who is fond of mechanics, and sent, at the expense of the Provincial Government, to the Great Exhibition of Paris in 1855, where the inventor, Mr. Romaine, was one of the Canadian Commissioners. This machine, like Mr. Mechi's, was to be drawn by a pair of horses, the steam being employed turning the cultivator. In Paris Mr. W. Crosskill saw it, and thought so well of it, that he took it up, and the firm have spent two years and some thousand pounds in bringing it to its present state of efficiency. The third machine would not steer or travel until the wheel arrangements had been changed to the present form and proportions. The expense of working is estimated at 70c to $1 an hour; the work done at from three-quarters to one acre an hour, according to the depth and consistence of the soil. By lengthening the cylinder a steam engine of the power now used can increase the work done without accelerating the speed."

All this sounds very plausible, and for Mr. Romaine's sake, we hope his machine may prove acceptable to English farmers. But there is a fundamental objection to the *mode* of cultivation which this machine undertakes to perform, which must prevent it from taking the place of the plough to any considerable extent. We pointed out this objection to Mr. Romaine before he took his machine to England—it is this: his rotating claws may tear up, aerate, and comminute the soil, but they will not *invert it*. Now, the inverting of the soil, the turning *under* of the stubble, grass and other vegetable growth of the surface, in order that by its decomposition it may supply food to the next crop, is one of the necessities of cultivation, in this country at least, and we apprehend, cannot be dispensed with in England. It is evident

from a glance at the *modus operandi* of this machine that a large portion, probably three-fourths, of the vegetable growth of the soil, including roots of plants, will be deposited at or near the surface; and so, its value as plant food will be, in a great measure, lost. We do not see how this result can be prevented. If you throw up a feather and a guinea, the latter will most assuredly reach the ground first. If stubble, grass, &c., are torn up at the same time with sand and clay, the former being lighter will by the same law, descend less quickly than the heavier body, and will thus be found at the surface. Possibly this tendency might be partially remedied by covering the cylinder so that the earth in falling would carry down the lighter bodies with it. But as the machine is represented in the engraving, the objection we have mentioned must prevent it from superseding the plough. It will merely do, in a more perfect manner no doubt, what is now accomplished by the "Cultivator" in common use. All the difficulties we have hinted at, as standing in the way of a steam locomotive "off the track," will obstruct this machine. Its slow forward motion is a point in its favour, because the power of the engine will thus be used to great mechanical advantage. But we fear, nevertheless, that it will prove an expensive mode of cultivating the soil.

A word as to the origin of this invention. Mr. Romaine is probably the first to attempt the practical application of the revolving hook or "claw" to the soil. But the idea is not a new one. Previous to the year when, as Mr. R. says, the idea occured to him, a clever little book appeared in England under the title of "Talpa," or "Chronicles of a Clay Farm." In the concluding chapter the writer thus suggests the Talpa, or *claw* cultivator:

"Again and again be it repeated, that it is not *ploughing*, neither is it *digging*, that we want. These are only *means*. What we want is the *end;* we care not for the process. Give me a SEED-BED: show me the soil *comminuted, aerated*, and *inverted*, six or eight inches deep, and I will not ask you *how it came so*. What does that matter? If you wanted you coffee ground for breakfast, to a certain fineness of texture, would you be very particular to ask whether the mill that crushed the fragrant berry had worked horizontal, vertical, alternate, elbow-crank, or by *circular* motion? If the farmer or gardener could only have his seed-bed made ready for him as fine as a new mole-heap, or to any other coarser texture, according as he wants it, do you think he would care whether the soil had been first cut into longitudinal strips plough fashion, or into spades cubes, spade-fashion, before it was finally granulated for his use? Surely the one is as indifferent as the other; and singularly enough, both offer problems far more difficult to the steam engine (if anything can be called so,) than the performance at once of the *ultimate* and entire process without these preliminary forms at all.

"Until steam power was discovered, this possibility did not exist. Wind and water being out of the question, there remained nothing for it—no *other* power that could be taken into the field—but men or horses. Ploughing or digging, then, were the indispensable preliminaries; there was no getting on without them; these were but preliminaries it is true, the former leaving everything, the latter a great deal (according as the work was done) to be accomplished afterwards to complete the cultivation. But it is not so now. Since the birth of the steam engine—no such very long time ago, the whole elements of the question are altered. There exists *now* a portable power—not limited to horizontal action like the horse, nor to vertical action like a man using the spade or the hoe—which, if merely told *what to do*, will go and do it, merely dropping a hint into your ear that *circular* motion is its favourite.

"But the willing giant stands idly panting and smoking; for nobody can agree to tell him what to do. One says 'go and *plough!*' another says 'go and *dig!*' each mistaking the means for the end, and trying to yoke this youngest born of human genius to the peddling routine of manual or equine capacity; out of the very perversity of backsightedness that clings to forms and modes which belonged to the *implements* not to the *task*–backsightedness that would with equal reason puzzle its brains in looking for the pole and splinter-bar of a locomotive, the pendulum of a watch, or the paddle-boxes of a screw steamer.

"But if it is not ploughing, and it is not digging, what is it? 'Go to the Mole, thou dullard,' (the old proverb might be traves-

ted,) 'consider her *ways* and be wise'—who without any coulter, share, or mould-board, without spade, hoe, or pickaxe, leaves behind her in her rapid track a finer mould than ever Ransome, Howard, or Crosskill—than ever spade or rake produced, or the most careful-handed gardener chopped up to pot his plants with.—The very rabbit that scratches his hole in the ground, or the fox that scratches after him—like the king-crab, to *eat the kernel and lie in the shell*—or the dog that scratches after both—the whole tribe of 'claw foot,' in fact—had scratched hard earth into soft mould, before ever the plough or the spade, or even the more ancient hoe, had broken ground on this planet.

"Let us begin from the beginning: let us takes 'cultivation' itself into serious thought for a serious moment, and analyze it into its simplest elements, dropping all conventionalities of plodding custom.—What is it? How would you do it, if you had neither plough, nor spade, nor hoe, nor rake to help you? With the same tools that the monks of La Trappe used to dig their graves with, and in the same manner! If the mole, the rabbit, the fox, the dog, are not sufficient indicators, take the hand of a man, glove it with hardened steel, multiply it a dozen or twenty times, till you have an instrument as broad a Crosskill's clod-crusher, each hand or claw with its separate arm forming the radius from a central shaft, which bristles all around with a forest of such arms, a sort of revolving Briareus, *not rolling*—let that be especially remarked—but steam-driven, a thousand *dog* power, if you please, for we must not even mention horses, or we shall drop back into the old Scylla and Charybdis of 'traction' and of 'rolling'—two ideas to be eschewed like poison.

"Let us suppose the picture of this formidable looking cylinder of claws to be sufficiently described for the moment—reminding one, at a distant view, of a half-breed between a hay-tedding machine and a Crosskill's clod-crusher — but unlike them, fundamentally distinct from any and every instrument that has ever seen a field, as doing its work not by traction, nor by its rolling weight, but *driven* by its axis, as the steam-paddle, the circular saw, the driving wheel of the locomotive, are driven, supported by its own apparatus, and abrading the soil with its armed teeth, first cutting its own trench, burying itself to the required depth, and then commencing its onward task, *tearing down the bank* (so to speak) on the advancing side, canting back the abraded soil, earth's *sawdust*, comminuted, aerated, and *inverted*, into the trench it leaves behind."

When Mr. Romaine first attempted to carry his "idea" into practice, he adopted the singular expedient of placing a steam-engine in a cart to work the "formidable looking cylinder of claws," while the cart and the engine were to be moved about the field by means of horse-power! This arrangement was evidently an absurd one; but we find a passage in "Talpa," which *might* have suggested this idea also. He says:

"When we have in idea and in fact detached the *work of cultivation* from the mere progression of the implement, made them perfectly *separate* and *independent*, so that if you ceased to proceed, your 'coffee mill' would be still *at work*, and only wanting fresh coffee to grind; then, and only then, shall we have laid hold of the end of the 'clue that leads to cultivation by steam;' for then, and only then, shall we have begun to appreciate the real and unique value of the new agent we possess. To suppose that it would gear its noble faculty to the dragging of ploughs, or the redoubled solecism of a rolling spade machine, is to transgress the elementary axioms of natural law, the fundamental relations and *exactions* that govern all physical progress and discovery."

Talpa never meant to recommend any other power than steam for the two purposes; he merely desired to have the two parts of the machine so adjusted that they could be put in motion independently of each other.

In the next chapter to that from which we have made the above quotations, we meet with the following graphic description of the very machine, in all its essential details, just brought out by Messrs. Crosskill. It is, we believe, a rule of law, that no patent will be upheld for any machine previously "described in a book."—If Mr. Romaine has never read "Talpa," we advise him to read it now. It might save him both trouble and expense, if he contemplates a patent:

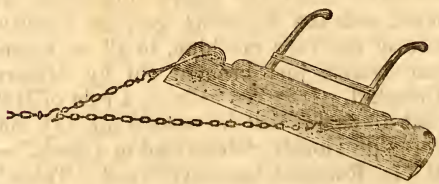
"Before we depart this life, we shall see one more wonder moving on the face

of the earth, something of this form and fashion—to wit—a complete locomotive engine on four wheels, the front pair turning on a transome, the hind ones fixed; behind them (suspended) a transverse, cylindrical shaft, three feet in diameter, from six to eight feet long, reminding one of a cross-breed between a clod-crusher and a hay-tedding machine, armed with case hardened steel tine points, in shape like a mole's claw, arranged so that the side lap of each claw may cover the work of the other, and no interval or ridge be left uncut: the extremities of the cylinder just covering the wheel tracks. This cylinder of claws you will see raised or depressed at pleasure by the engine driver, and adjusted to slow or rapid revolutions, worked either by cog wheels, or geared from the drum of the engine. That is the 'cultivator.' A platform from the engine extends over it, ending in a sort of moveable tailboard, which may be raised or depressed at pleasure, to regulate the settlement of the soil which scatters from it. The revolution of the cylinder is not *against* but *with* that of the wheels—not dragging or retarding, but rather helping the advance of the whole machine, which is moved slowly forward by a detached force of about two horse-power from the engine."

[*Canadian Agriculturist.*

Diagonal Road Scraper.

The Scraper depicted and described to us below strikes us as a very useful and desirable one. Having found the Scraper in many cases indispensable, and in many more an important auxiliary to the plough, we are anxious to see so useful an implement much more extensively introduced. We are glad to be able to recommend this one as deserving the notice of all who need such an implement.—Ed. So. Pl.



Patented June 6th, 1854, by S. H. Dudley, Milton, Conn.,

Is confidently recommended to the public as being the BEST Scraper for all purposes ever introduced. Although specially designed for working roads it has been found to be superior to any other for digging cellars, banking houses, leveling yards, and indeed all kinds of work where any Scraper is used. Particularly has it been found valuable in removing the surface earth preparatory to underdraining. This is becoming an important part of good husbandry, and would be much more extensively practiced were it not for the expense. By using this Scraper in a skilful manner, in all places where a team and plough can be used, a ditch can be lowered to the depth of eighteen inches or two feet, at probably one quarter of the labour and expense attending the ordinary method, and after the ditch has been completed and the underdrain laid, it is so constructed that by driving the team on the opposite side of the bank of earth thrown out, it is rolled back into the ditch faster than ten men can do it with shovels and hoes. This alone would render it invaluable to every farmer who has land that needs underdraining.

DESCRIPTION.

It is composed of a main plank from 5 to 7 feet long, 12 or 14 inches wide, 1½ or 1¾ thick, with handles firmly bolted on the back, and faced on the lower edge with a steel plate, 4 inches wide, securely fastened with bolts and screws. It is drawn with a pair of steel bows or hooks attached to cast iron sockets on the back of the Scraper, and coming over the top through notches made for the purpose; thus leaving the front of the Scraper free from chains, hooks, rings, or other obstructions. Each of these bows has a loop in the end for the purpose of attaching a chain.

DIRECTIONS FOR USING.

In working roads plough one or, at the most, two good furrows on each side. Then take a common two-hook ox chain and attach a chain to the loop in each bow, (after attaching the bows to the Scraper;) then hook the chain that goes between the cattle to such a link in the chain attached to the bows, as will give the Scraper an angle of forty-five degrees with the road, the end running in the ditch being forward, and the team travelling along the road in or near the middle. Raise the handles so that the Scraper instead of running under the dirt shall shove it forward of it, keeping the forward end down and resting against the shoulder made by the last furrow, and the other raised a little (if need be) so as to allow some of the dirt to run under, and not load the Scraper too heavily. Continue in this manner, changing the angle from time to time as occasion may require, and moving the dirt each time round near to the middle of the road, until it is complete; when, if necessary, plough and scrape again. This Scraper leaves a road, if free from stone and large turf, so smooth and well graded that little or nothing need be done with a hoe. After the dirt is

moved from the ditch the angle should be changed so that the Scraper will not incline endwise too much. This Scraper works remarkably well in stony and rocky ground. Wherever a plough can be made to loosen the earth, (if rightly managed,) it will take and carry it on the road as clean or cleaner than the common Scraper. A good way to use it on highways is to have one team to plough and another to follow with a Scraper throwing in each furrow as it is ploughed.

It is very easy to manage after a little practice, but it is recommended to new beginners to use it in mellow ground and get somewhat accustomed to its movement before trying among rocks and heavy turf.

This Scraper needs only to be known to be generally used, as it is confidently believed that no one after using it in a proper manner for a short time would be willing to return to the use of the old fashioned kind. It took the first premium last Fall at our State Fair in New Haven, and also at Newark, New Jersey —the only places where it was exhibited.

We are manufacturing four sizes. The largest size is 7 feet long, the second 6½, the third 6, and the fourth 5 feet in length, at prices varying from $6 to $7 50, according to size, and will be delivered on the Naugatuck Railroad, at Litchfield Station, at the above prices, suitably directed to any part of the country. All orders promptly attended to.

Town, County and State Rights for sale.

Address S. H. DUDLEY & CO.,
Milton, Conn.

For the Southern Planter.

Is Hay Necessary for Stock.

Is it not strange how much doctors will differ. A writer in the April number of the Planter, says, "He who has an abundant supply of corn-stalks, shucks, wheat straw, and chaff has no need of hay for stock of any kind." O, how the Dutch farmers in the Valley shake their heads, yes, even until their long heavy locks hide their blushing faces. What! me not give mine *horses*, mine *colts*, and mine *calves*, no hay, nothing but *chaff*, *straw*, and *corny stalks*, and have them looking in the spring as rough as a rasp, and all covered over with vermin. I will do no such thing, I will feed mine hay, and the man over the Blue Ridge may feed his sassafras bushes, and briers, for all I care. What he says about killing briers and bushes by mowing is true. If he will use one of Manny's Reapers and Mowers, he will do more in one day towards accomplishing the desired end than he can in three or four, with all his men with scythes in hand. We in the Valley cannot agree that a crop of clover or timothy seed exhausts the soil as much as corn. We believe that the stubble and roots left in the ground weigh as much as the hay taken from it, and we know too, that when we protect our fields sufficiently to get one, two or three good crops of hay and seed we rarely ever fail to make a heavy crop of corn or wheat, which ever happens to follow, in fact, we generally get two crops of wheat, and one of corn before we put the same land in grass again.

Another writer says, "I have also observed the soils which form the bottom of manure heaps, even within a few inches of the surface, do not seem to be enriched by the collection of fertilizing matter, which rested upon it." I established a pound some years ago in a corner of my stable-yard, which I plowed up and hauled out; I also threw up a bank around two sides: in the centre I placed a rack in which I feed *corn-stalks*, with the *fodder* and *shucks* left in them; the stable-loft is filled with clover and timothy hay, which is fed in the old way: The stable is kept littered, and when cleaned out, the manure, and also the scrapings of the yard are cast over the pound, which is covered several feet deep with straw, this operation is repeated as often as possible throughout the year, and the manure is hauled out in the fall, and when opened much of it is as odoriferous as stable manure. Last fall I plowed the clay foundation as deep as three good horses could draw the plow, and the earth turned up smelt quite *loud*, (as a Dutchman would say); this was cast and spread on land plowed for wheat, and the wheat where it was spread looks now as if guano had been heavily spread upon the land.

Can it be that the corn and hay fed in addition to the stalks and straw, improved my manure so much that it enriched the clay underneath it? I suspect it had something to do with its strength. A Dutchman's advice is, make all the hay you can boys, and be sure and make it while the sun shines; make a little *clover and Timothy seed* if possible, it helps out if the crop falls a little short. We have no Tobacco over this side of the mountain to help out our *craps* when they fall short of our expectations; so be sure and make clover and Timothy seed to supply the Tobacco growers on the other side of the mountain, who do not believe in making seed and hay.

A Grand-son of a Dutchman.

Valley of Virginia,
May 1st, 1858.

For the Southern Planter.

Curing Hay.

I have just read in the Planter an article on pickling hay—I am much pleased with the *idea*, and should like to see the result of such an experiment in this country from some *practical, reliable farmer*. Will not some of our farmers try it and give the result.

Just as I finished reading the article alluded to above, a friend of mine from Spotsylvania

county, in this State, called on me and gave me the following plan for curing clover, which he stated was very superior.

When the clover is ripe for the sythe, cut it down (not wet) and haul to the place for stacking as fast as it is cut; commence at once and lay one foot of wheat straw at the bottom, then one foot of the clover as fast as it is hauled, alternating the layers to the top of the stack, which should be of straw; thus put up, in a very short time becomes perfectly cured, and not at all liable to spoil in feeding it to stock of all kinds. He says he has noticed that the straw is eaten as greedily as the clover, and the clover is kept of a bright and beautiful color all the while.

If of any value to the farmer publish it at once, and oblige. OBSERVER.

The Proper Time for Cutting Grass.

HAY MAKING.

There is a diversity of opinion among farmers as to the proper time to cut grass. Some contend that it should be cut when in blossom, as it then contains a larger amount of the saccharine juices, and if properly cured, the hay is more nutritious and valuable than when the cutting is deferred until the seeds are matured. They also contend that the condition of the meadow and the aftermath are improved by early cutting; while others, again, maintain opinions directly the reverse of this. Some intelligent farmers argue that the hay is not only heavier and better when the grass is allowed to stand until the seeds are ripe, but that the meadow is improved by late cutting.

Medical plants are supposed to contain the largest quantity, and in the greatest perfection, all their peculiar qualities when cut at the period of full bloom; and in order to retain these qualities in their greatest perfection, they are cured in the shade. Science and observation have undoubtedly proved this theory correct — Judging then from analogy, and aside from experience, we should be in favor of cutting most kinds of grass just at the time the blossoms are falling. In regard to timothy, which constitutes the principal grass for hay grown in the Mississippi Valley, it has been found from practical experience that the most proper period for cutting is while the seeds are soft, or in the milky state.

CURING HAY.

When it is practicable it is always b to cure hay in the cock. It returns mo of its juices, which are converted ir sugar, rendering the hay more sweet a fragrant, and of a better color than wh suffered to become dried up like straw stubble in the sun.

Grass, when mown, should remain the swath until it is wilted and the exte nal moisture expelled. If the grass heavy and wet when cut, it should shaken up and turned before it is rak into winrows or put up in cocks, and a ways before the dew begins to fall. raked up quite green it will undergo sweating which will facilitate the curi and soften and improve the quality of th hay; and when it has undergone th sweat it is much less liable to ferment ar injure in the stack. The time that ha should be exposed to the sun, and rema in the cock before it is finally put up in the stack, must of course, be governed b the state of the weather, but the sligh fermentation commenced in the cock, ha tens the process of curing when it is agai handled and hauled in.

CLOVER—TIME OF CUTTING, ETC.

Clover, when properly cured, makes ha which most animals eat with avidity; bu to obtain good hay from clover, it require more care in curing and will bear les handling without injury than any of th grasses.

The proper time for cutting clover, i when about one-third of the blossom have turned brown. Clover should neve be exposed to the sun like timothy, in th process of curing; but as soon as the ex ternal moisture is dried off and the stem become slightly wilted, it should be imme diately raked and put into cocks of fifty o one hundred pounds each. Clover tha is cut in the morning should be put int cocks in the afternoon; and in no instance should it be exposed to the sun till the leaves become so dry as to crumble, for in this condition much of the better portion of the hay will be lost in handling. The curing will proceed according to the state of the weather. If the air be dry, the curing may be completed in one day, but it often requires two or three days to bring the hay into a fit condition to stack.

efore it is hauled in, the cocks should be irned and thrown slightly open, until the ioisture caused by the sweating has es-aped.

At the usual period of curing clover, ie weather is frequently showery, and no rass is so liable to injury from rain as lover. In order to protect the cocks from ie rain, hay caps should be provided. hey are now used in some sections with reat economy, often preserving tons of lover hay from the effects of protracted ains, which would otherwise be entirely iined. These caps are cheap and simple, nd when once made, with proper care ill last a lifetime. These are made by ewing together two widths of common otton cloth, one and a half or two yards ng. In time of rain these are placed ver the cocks and the corners turned un-er, which confines them down and effec-ially turns off the rain.

STACKING CLOVER.

Clover does not so readily shed rain in ie stack as other hay, hence more care required in putting it up. If a quantity f wheat or rye straw is at hand, with a ttle attention in laying up the stack, it ay be entirely protected from rain in the llowing manner: When the stack has een raised till it is desired to begin to ontract or draw it in towards the top, lace a layer of straw around the edge of he stack and let the ends hang over the ides, continuing the courses as you rise o the top—this, when raked down will ffectually protect the hay from the rain. n stacking clover, six quarts of salt should e scattered through every ton as it is laid p. Timothy hay is also improved by dding salt, but a less quantity will an-wer.

The quality of hay, and particularly lover hay, may be greatly preserved and ndeed improved by a very simple method f ventilating the stack. If this precau-ion is taken, the hay need not be so long xposed to the weather in the process of uring, for if it be properly stacked and entilated, the curing process will be more erfectly completed in the stack than otherwise. It is accomplished in this way. Of course every good farmer lays a foun-lation of old rails or poles for his stack. Take a large sack, say eighteen inches in liameter and four or five feet long, fill it with chaff or some light material, place it upright in the centre upon the foundation of the stack and build up around it. As the stack rises the sack must be drawn up, leaving a hole in the centre from the bot-tom to the top which should be properly capped over to prevent the rain from get-ting in. This is a most valuable improve-ment in stacking and will doubly pay the labor required.—*Valley Farmer.*

From the Genesee Farmer.

Stacking Hay and Grain.

In my opinion, nothing looks better around a farmer's barn, than a nice lot of well built stacks of hay or grain. When we see them, the first thought usually is, "that is a neat farmer." That stacks are much better for the grain and hay when well built, is admitted by all, though the custom of making them is so rarely prac-tised. More than half the stacks you see put up, look as they were going to tumble over with the first blast of wind. If the directions given below are followed, you will have a neat, prim looking stack, of no matter what size you make it.

Lay your bottom of old rails, old trees, or any such material that you may have on hand, so as it will admit of a current of air passing under it. One rail square will take twenty tons of hay, when well built. Lay on your hay to cover the bottom all round, and just sufficient to cover the out-sides; in laying on the hay, keep it well shaken out, as if laid on in lumps it will slip. Then draw your bottom up four to six feet high, (according to the size you intend your stack,) in shape of a bowl; in building up to this height you keep your centre hollow as you proceed.

You then commence to draw in, keep-ing as before your centre hollow and your hay well shaken out. When you come to within four or five feet of the top, com-mence to raise it in the centre, so that it droops from centre to edge; in this way you finish. In unloading, have your loads delivered regularly around the stack, for if unloaded more at one place than ano-ther, it will throw your stack in; the same with your ladder, keep it regularly shifted around the stack. When all is finished, have the bottom pulled from your founda-tion to where you commenced to draw in; this gives you a nice, regular eave all

round, and prevents the rain when running down the stack from penetrating into the bottom, for the eave projecting over. throws the water completely off, Finally rope your stack with hay ropes, six or eight all regularly over it, and divided equal distances apart, fastening them under the eave by driving sticks into the stack and fastening to them. If the stick is crooked at one end so much the better. Your stack is then finished as all stacks should be. GERALD HOWATT.

Sussex Co., N. J.

From the Genesee Farmer.

Curing Hay.

CUT your hay always before the blossom of the grass is off. Hay cut in August, dead ripe, and put in the same day, weighs well ,is got in cheap, and is about as valuable as a ton of small sticks. Keep rain and dew off your grass when cut. Hay caps and nothing else will do this. Hay, when half dry and fairly wet through, is equal in value to a drawing of tea after it has been *once used.*

Begin with your mowing machine at 8 o'clock in the morning, and by 12 o'clock you have four acres (eight tons of grass) cut and spread. I want two men with the machine, as it saves time. At 4 o'clock, begin to rake and put in cocks of about 50 lbs. This is easily done by sundown, and all covered. On the second morning, take off your covers, open the hay for a few hours, and put two or three together, and cover again, which can be done before it is time to rake up your second day's four acres of cuttings. Generally, the large cocks need not be touchd again ; but if they get too warm, one hour's opening will cure them perfectly. Cover again, and you may draw in at your leisure, for rain does no injury. Hay got in this way, with wages at $1.50 per day, costs about $2 per ton to get it, including wear of hay caps and all expenses, and is worth twice as much as the hay got by my neighbor S., who cuts his in the morning, carts it in from the swath, and got his in last year for 86 cents a ton ; but as he does not feed it, but sends it to New York, it weighs well, and makes no difference. As he makes and buys no manure, how will his farm look in five years?

WM. H. DENNING.

Fishkill Landing Dutches Co., N. Y.

The Causes of the Bad Return of Wheat in 1856.

Translated from the French Journal of Practical Agriculture, for the London Farmers Magazine.

It is said that agriculture is the first of arts. That is true, if we mean by it that it is the most ancient and most necessary; but in the perfection of the processes of operations it assuredly does not occupy so distinguished a rank.

The blacksmith rarely burns his iron; nor does the baker wait the carbonization of his bread before he draws it from the oven. Both attend to the action of the heat, to see that it receives only the necessary degree; but the husbandman troubles himself little about the action of the sun, and allows his wheat to be roasted in the field with the most perfect indifference, and the result is an enormous loss, dearness of the article of subsistence, and the diminution of the public property reduced by the purchase of foreign wheat. The evil is now without remedy as to the past, and I am speaking only by way of caution for the future.

The harvest of 1856 has yielded much grain the departments of north-east of France; but the greater part of it is small and thin. It requires an enormous quantity of it to fill the measure, so that the return by the sheaf, which is reckoned by the hectolitre, is very weak. The hundred sheaves, which yield in a good year four to five hectolitres, have produced that year only two or three; and there is therefore a large deficiency. We do not anticipate any inconvenience from it, because this deficiency may be covered by importations of wheat from Germany, which comes in great quantity.

If the grains of the last harvest are small and thin, it is because the reaping of the wheat was effected too slowly. In commencing harvest the husbandman always waits till the stalk and the ear are dry and brittle, whilst he should be careful, like the baker at his oven, to withdraw his sheaves in proper time from the scorching action of the sun.

It is generally believed that if the period of flowering has passed well, he has nothing to do but to wait the maturing of the wheat, and conveying it to the barn, to receive an abundant harvest. But if the flowering is important to success, the time of cutting is not less so, and up to the

present period we have thought little of it.

Let us endeavor, therefore, to lay down some rules essential to this great question.

The months of May and June, 1856, were cold, and very wet. They favored the development of the herbage of the wheat, but retarded the fructification. The earing, which commonly, in our department, comes on from the 5th to the 10th of June, did not take place till towards the 20th of that month. The flowering lingered, and was not perfectly accomplished on the 30th, from which resulted a prejudicial delay, and the farmers supposed that it was consequently necessary to put off the harvest. But the month of July, with the exception of a few days of rain towards the 10th, was very favorable to the vegetation of wheat; the grain quickly formed, and had taken its full development towards the 30th, except that it was still tender and milky. To complete slowly its maturation it required shade and a mild temperature, which it would have found in the shocks; but instead of that, by leaving it standing, it was found exposed during the seven or eight first days of August, to an ardent sun, (the thermometer, in the shade, standing at 32 degrees,) the straw was rapidly bleached, the ascension of the sap was arrested, and the grain was dried as if in a stove, becoming thereby thin and shrunk.

In order that the grain may attain its normal size it is proper to shelter the stalks from a top-drying action of the sun, and to secure them early, and for fifteen or twenty days in the shocks. We know that the maturation is thus perfectly completed and much better than in the free air. Gardeners who bestow so much trouble upon their seed plants never fail to cut them when they are still green. They then tie them in small bunches, standing upright, sheltered with a cap or covering at the top, affording thus to the seeds, time to complete their formation.

A cultivator in the neighborhood of Metz had a field of wheat some years ago wholly beaten down; and wishing to save it from rotting, and preserve it, at least, for forage, he caused it to be cut quite green, and set it in shocks, which remained in the fields till after the harvest. He was agreeably surprised to find the wheat-ears formed and well filled, and, on threshing, the grain was handsome and heavy.

The farmers would therefore have done well to cut their wheat from the end of July, and to place the sheaves in shocks in the middle of the fields, protecting them at the same time from the too great heat of the first days of August. This was indispensable, especially with those which were the most retarded. I have seen a very large field of wheat of the finest appearance, lost for want of this precaution, yielding only thin, wrinkled grain, light and worthless.

But it is very difficult to alter the habits of husbandmen, and make them comprehend the utility of an early reaping of wheat; they are fearful of harvesting light, and less quantity of grain, which is a great error. As soon as the stalk below the first knot and above the last, turns white, it is time to reap the wheat and to protect it from the too ardent action of the sun's rays. This is generally done at Flanders, and the wheat of that country passes in all the markets as being of the best quality. Besides, numerous conclusive experiments have been made, one of of which I shall relate, because it appears to me to be the most correct and arithmetic.

When the Institute of Versailles was in existence, M. Boitel, one of the Professors caused a field of wheat to be cut at intervals of five days each, commencing on the 15th of July. This was rather too soon, but in matters of experiment it is allowable to go to the extreme.

The wheat cut the	15th July,	weighed	75	kilos. per hect.
"	20th	"	75	"
"	25th	"	72½	"
"	30th	"	71½	"

This wheat was placed in shocks till the 4th of August, when it was threshed. The first cut, therefore, had stood nineteen days and the last only seven days. The experiment would have been more complete if the shocks had all stood nineteen days before threshing; but in any case, the difference in weight is all in favor of the early reaped wheat.

However, M. Boitel declares that, in the last days of July the *puccinia*, a kind of mildew, had slightly attacked the straw and he does not know whether he ought not to attribute to this cause the difference in weight.

I do not, however, hesitate to affirm that the *puccinia*, which appeared so late, could not have had a marked influence on the

size and weight of the grain, and that the difference of from two to three kilos. observed, was entirely produced by the slow and gradual maturation effected by the shade in the shocks.

At all events the experiment of M. Boitel proves, beyond dispute, that it would have been more advantageous to reap the wheat from the 15th to the 20th of July, in order to protect it from the scorching influence of the sun as well as from that of the *puccinia*, and the weight of the wheat is, in this case, the most conclusive proof of it. When I look at all the details of the common practice of the farmers—the choice of seed, the sowing broadcast, the harvest, &c., I discover numerous defects which annually deprive them of a many millions of francs, without taking into account the privations and sufferings of the consumers.

It is therefore certain that the year 1856 would have yielded an excellent return in the Departments of the North-east of France, if the cultivators had known how to conduct their operations best for their own and our advantage.

There are great improvements to be made in the cultivation of wheat. The sowing in drills, by which half the seed is economized; the spring tillage, which increases the produce; the harvesting before the complete maturity of the wheat, and the gradual drying of the straw, are important objects at which we shall arrive with time and patience. The *Journal of Practical Agriculture*, by its interesting publications will have the glory of having powerfully contributed to it.

ANDRE,
Former President of the Metz Committee.

A New Fish Fertilizer.

Our readers are well aware that we have condemned a large proportion of the *manufactured* fertilizers, which have been brought before the public with so much flourish of trumpets, backed up and endorsed by the specious but deceptive analysis of "distinguished chemists," and offered to farmers with a very patronizing air. The stand we have taken has incurred not a little loss, as our advertising columns have not been crowded with the "super-phosphate advertisements," which have been so valuable a source of profit to other journals. But though our duty to our readers has impelled us to condemn a majority of these manufactured stuffs, we are none the less ready to bring to notice anything which really promises to be useful to the public. We, therefore, refer with pleasure to a new enterprise recently started at Southhold, L. I., having for its object the preparation of a cheap fertilizer, from the immense number of fish that abound upon our seacoast. Repeated efforts have been made to manufacture these fish into a condensed dry manure, capable of transportation, and at a price which would warrant farmers in purchasing it as a fertilizer, but for various reasons, all previous efforts have failed.

Last season a gentleman erected works at Southhold, to manufacture "fish oil," and "fish guano," under the patent of Messrs. Thurneyssen & Demolin, of Paris. It was so late in the season before the apparatus was completed, that only preliminary experiments were made. The process is essentially as follows:

The fish are taken in quantities of three tons or so, put into a space between two cylinders heated by steam under high pressure, and there cooked while kept in motion by the revolving of the cylinders. They are next transferred to strong bags, and subjected to powerful hydraulic pressure, while still hot, which extracts most of the water not previously evaporated, together with a large amount of oil. The mass thus dried is ground finely, and put up in bags. Only about one-fourth of the original weight of the fish remains, but this contains the chief valuable fertilizing elements. The profit derived from the oil will enable the manufacturers to sell the fish at a low price.

As above stated, only a small quantity was made last season. Deeming the matter of sufficient interest to our readers, we ourselves, selected an average specimen from the mass thus manufactured, taking care that there should be no chance for collusion in the fitting up of "prepared samples," as is too often done. The specimen thus procured, we forwarded to Prof. Johnson, of Yale College, for careful analysis. The results we have not space to give in detail, but both Prof. Johnson and ourselves agree in the opinion that with a little more perfection in the machinery it is probable that the process will prove successful; and we shall soon have in operation, not only at Southhold bu

elsewhere, a feasible plan of rendering available as manure, a large amount of the stores of fish abounding in our waters. As soon as the factory is in operation, we intend to procure samples from the materials as actually offered in market, and submit them to the most rigid analytical tests, and give the results, whether favourable or otherwise.

The process is not a "secret" one, but is secured by "Letter's Patent," in Europe and America, and there seems to be but little chance for deception. As rights to manufacture at different points are offered to the public, if the article should prove as valuable as it now promises, there will be competition enough to keep the price in due bounds. A pamphlet, giving the details of the mode of manufacture under the patent, can be obtained by addressing Mr. Brundred as per advertisement.

American Agriculturist.

The Iron Mountain.

Ed. Prairie Farmer:—Knowing that your readers—the farmers of the West—are generally interested in whatever relates to the earth, its surface, natural wealth, etc., I am sure they will receive with pleasure and profit a description of the famous Iron Mountain, situated in Iron county, Missouri, distant from St. Louis about 90 miles. My pursuits as a naturalist, and my desire to take notes from the great book of Nature, led me to this interesting locality, a description of which is subjoined; the statistics and facts of which are mainly the same as given by Dr. Sitton in his valuable report to the state.

Few, if any, localities are more widely known than the Iron Mountain; but on account of the difficulty of transportation, and from the impression that the ore could not be smelted, this inexhaustible supply was permitted to remain unproductive until 1845, when the Iron Mountain Company was formed and proceeded to the erection of furnaces.

The Iron Mountain is the southwestern termination of a ridge, which rises near the Mountain to the height of 400 feet. The adjacent rocks are granitic. The Mountain is a flattened, conical-shaped hill, with an average elevation of 228 feet—the base covering an area of 500 acres. As we ascend the southwestern termination of the Little Iron Mountain, we find it covered with soil and clay, with the iron ore lying loose on the surface; but in passing to the Iron Mountain proper, we find these angular, weather-worn masses increasing in size until we reach the summit, where the separate masses are of many tons weight of almost pure iron. From surface indications, and from all explorations that have been made, the whole Iron Mountain is a mass of iron ore. Viewed as a cone whose base is 500 acres, and height 228 feet, its solid contents are 1,655,280,000 cubic feet. Now, since a cubic foot of water weighs 16.3 pounds, and since the specific gravity of the Mountain is as 5.23 to 1, compared with water, the total weight of iron is 103,123,944,000 pounds. The ore is of remarkable purity—being specular ore—the only impurity being quartz. The analysis of a specimen gives:

Silica,	0.66
Peroxide of iron,	99.33
Pure iron,	69.55

Pilot Knob and Shepherd Mountain. These are situated about 6 miles S. S. E. of the Iron Mountain, and are as extensive as the latter. Pilot Knob has long been a land-mark to the pioneer and the traveler. It is 581 feet above its base, which covers an area of 360 acres. The elevation above St. Louis is 1,537 feet, according to the railroad survey. The quantity of pure iron at the Pilot Knob is enormous. The upper 141 feet are estimated to contain 13,972,773 tons. Analysis of ore gives:

Silica,	23.12
Alumina,	2.78
Peroxide of iron,	73.74
Pure iron,	51,13

Shepherd Mountain is distant 1⅓ miles from Pilot Knob. Its height is 660 feet; greatest length 1¾ miles northwest and southeast; breadth 1 mile, and its base covers an area of 800 acres. The Mountain is granitic, and cut through by vast dykes of iron ore, running in all directions. The whole country gives evidence of intense volcanic action. The analysis of ore gives:

Silica,	1.04
Alumina,	0.60
Peroxide of iron,	98.30
Pure iron,	68.83

It is impossible to estimate the extent of

iron lying beneath the general surface; but since it occurs everywhere, we may safely say the region for miles in extent is a bed of iron. It is idle to estimate the duration of the supply; it would afford rail sufficient to cob-web the whole earth, and build iron fronts for all the cities of the West until A. D., 10,000. Surrounded at no great distance with magnesia for flux, with the best coal deposits of the world at command, and situated near the Mississippi, the three peaks above described point not only upward, but forward, to a day not far distant, when at their base will be carried on the most extensive iron manufactories on the globe. WILBERFORCE.

Bloomington, Ill., March 8, 1858.

Prairie Farmer.

Root Crops for Stock—The other Side.

To the Editor of the American Agriculturist.

There has been a great deal of *theory* expressed in our country about the profit of roots for stock feeding, together with some little *practice;* and thus far, the theorists have had the best of it; that is to say, they proved by *Englishmen*, that the turnip culture is indispensable for stock feeding "at home;" and thus recommend the root culture *here*, on English evidence of the results *there*. Now let us reason together, and see what *practice* has amounted to in America.

Turnips, beets, even carrots, are uncertain crops here, for our summer climate. Scarcely one year in three do we get a good crop of either. The carrot and beet are far surer than the turnip or ruta-baga, which is liable to be early destoyed by the fly, and, if not so destroyed, stunted by drouth afterwards. Such has been my experience for twenty years, and upwards, no matter how much the *occasional* crop may be, *a full crop is the exception, not the rule*, in America. The great crops we hear of—the short ones we know nothing about, in the papers. These crops are not reliable for a yearly supply of stock food, even in case they were altogether desirable. I have seen, both in the fields of others, and in my own, excellent crops of sugar beet, carrot, mangold-wurtzel, and ruta-baga. I have also seen in the same fields, in other years, the same kinds of crop, cultivated with equal skill, and good husbandry, yields that were hardly worth the pulling.

In England the turnip crop (ruta-baga) is a "prepatory" crop for wheat or barley. It is largely fed to stock, with straw—the turnip to give sustenance and fat; the straw to fill up the stomach, and distend the intestines of the animal, with the additional object of increasing the manure. The climate of England is mild—scarcely colder in any part of the winter than our November or March; the turnips lie out in the fields all winter, unfrozen, and constitute a green food for the stock. Hay is little used there in common stock feeding.

Here, during cold weather, the turnip, beet or carrot, unhoused, is frozen stiff, and must be buried in pits, earth covered, or put in cellars to keep at all.

Fed in cold weather, except in moderate quantities to milch cows, they give no extra flesh, and from their cold, watery nature, scour young calves, and lambs. This I *know*, from several years trial, until obliged to abandon it, having adopted it from theory drawn from *English* practice. For early lambing ewes, moderately fed, they are useful; also for early calving cows. But one quarter the quantity of soaked oats is better; or one eighth the amount of Indian meal. All this I know from *thorough trial* 1 once put up in the stable, a thrifty four year old steer, grass fat in October, and began feeding him on ruta-bagas, and sugar beets. I had a fine crop, which my English herdsman had raised the previous summer, as he had all along boasted of their great excellence in "fattening bullocks," I determined to give a fair trial. The steer was fed twenty-five pounds of good timothy hay daily, and began by eating half a bushel of roots. The latter were increased day by day, until he consumed four, five, six bushels a day, and one day, when a trial was made to see how many he would take, he swallowed eight well measured bushels! The "dung" was enormous, to be sure, but neither the flesh, nor the tallow increased so much as a peck of Indian meal would have made; and after so keeping him, in perfect health and condition for two months, the steer was slaughtered, not having gained so much flesh and tallow as ten bushels of corn meal would have made.

I met, the other day, one of the best Scotch farmers in the United States. He owns a large farm, on which he has lived many years, got rich by farming alone, and has annually fed for many years past

hrough the winter, large numbers of cattle nd sheep for market. He feeds hay, straw, il cake and Indian meal to the cattle, and nground corn to the sheep. I asked him f he ever fed roots? "Never," said he. 'Roots would scour and freeze them to leath. I tried them, and condemned them ears ago. They'll do in Scotland, Eng- and and Ireland, but not in this country." Such, then, is my story. It may strike nany with surprise, after the repeated re- commendations in all the agricultural pa- ers of the value of "root crops" for stock. may be charged with revolutionizing 'backward." I can't help that; but such s my deliberate opinion, based on many ears observation and practice. L. F. A.

Erie Co., N. Y., March 1858.

The Shepherds of the Pyrenees.

Translated for the Ohio Farmer, from the Ger- man, by Dr. Hartmann, Cleveland.

Numerous flocks of sheep are always een in summer on the high mountain-pas- ures of the Pyrenees. These animals are ather small, but their ears are long and all backwards so as to cover part of the eck; the wool is also long and of a medium uality. The shepherds wear, almost with- ut a single exception, the mountain-jacket, ough caps, short pants, and large, grayish- white burrusses, with a kind of monkish ood, which gives them a queer and ghost- ike appearance. During a rainstorm, these idden forms would indeed resemble the eroes of Ossian, hovering about the rocks alf enveloped in clouds. These shepherds re, however, a strong class of men; slight ut sinewy, their skin all roasted by the un, the eyes small and black, the aquiline ose finely cut, the hair falling unbound pon the shoulder in copious coal-black urls. Every one has suspended from the houlder a small ornamental pocket, con- aining salt, this serves to attract those of he flock the shepherd wishes to catch and eparate from the rest,—a thing frequently equired by fits of disease common in these nountains. The most common occupation f all these shepherds is knitting woolen ocks, which they practice all day long, auntering leisurely along the pasture.— Many of them are accompanied by their hildren, the little ones representing in the nost remarkable manner their fathers in niniature. The children are, as a general rule, dressed in such a manner in the Pyrenees as to impress the foreign eye with the appearance of strangely dressed- up dwarf gentlemen and ladies.

The dogs belonging to these shepherds are mostly of noble blood. They are sel- dom allowed to visit the lower parts of the country, because the state of half wildness in which they are kept in order to render them useful in a region infested with bears and wolves, renders them in some degree malicious and uncontrollable. They often fight the most desperate battles among themselves, and many of their number fall victims in these ferocious contests. These dogs appear to be a singular breed, happily mixed from the Newfoundland dog, the St. Bernard dog, and the bull-dog of Eng- land. One snap of their gigantic jaws is more than sufficient to break the neck of the strongest wolf. The bears, protected by their thicker fur, are harder customers to deal with. Both these scourges are, however, disappearing from the Pyrenees, retiring to the wilder and less accessible defiles of the higher regions. The appear- ance of a bear in any valley more favora- ble to its human foe, is the signal for a general chase, never ending until he has paid for his temerity with his life. Wolves are more numerous and more dreaded. A bear seldom kills more than one sheep, selecting the best and fattest member of the flock, and starting off to devour it with all possible comfort. The wolf, on the contrary, not only satisfies his appetite on the spot, but even after that he continues in his bloody work from sheer licentious- ness and blood-thirstiness. Driven in mid- winter, by the tortures of hunger, down from the snow-fields of the upper moun- tains, these animals are really dangerous, and sometimes even men are attacked by them. Sometimes, however, one of them will live for years in some of the more fre- quented parts of the mountains, before a ball terminates its bloody career. Such are gen- erally gray-haired, cunning veterans, who have experienced a good many things and are acquainted with every trick of the hunter. The same thing will, though not so often, happen with a bear, who then usually becomes known to everybody, and receives a regular appellation by which he is designated in the neighborhood. In the valley of Ossau, for instance, one was known for a long time by the name of Do-

minique, who, confining his robberies in praiseworthy moderation to the occasional carrying off of a sheep or a goat, evaded for a considerable term the trouble of a general hunting. The inhabitants began indeed to feel really proud of their Dominique, "the glory and the pest of the parish," as Prof. Wilson has it. Unhappily, one fine summer-day, he was overtaken, while digesting his food in too long-cherished security, and shot by the forester.

The huts of the shepherds are rather queer institutions, made from broom-straw, and wood of the box-tree. The furniture is completed by one or two chairs and a pot of ewes' milk. Cheese made from the latter and Indian corn constitute all the meals; the fresh water of the mountain-springs serves against thirst. This, of course, is only in summer-time; the winters are spent in the villages and towns at the foot of the mountains, where the women reside the whole year round. All work in field and meadow is exclusively assigned to female hands. The women dig up and hoe the hard ground of the steep hill-sides, with surprising activity, to prepare it for the reception of the seeds; they carry up the manure on their heads and distribute it themselves; they are skillful mowers; they turn the fragrant hay, singing joyous songs, and carry it home in large bundles. Where a plow is seen, it is of the simplest form, commonly a long-curved bough, one end of which is fastened to the horns of an ox, the opposite one serving as a handle. The wooden plowshare is nailed on the exterior angle of the curvature. With this instrument they make furrows about an inch and a half in depth. The teams are generally of basket-work, upon two wheels, awkward indeed, but sufficient for the small loads that can be transported over the mountain roads. Many of these singular contrivances may be seen high upon the declivities, carrying up the ferns used as manure, or filled with corn, winding down their zigzag ways to the mills. These mills, too, are very small concerns, but numerous. The mill-room is next to the creek, which moves the machinery; the old-fashioned single stone is used everywhere. Above the mill there are the rooms of the miller and his family. The farmers living near villages usually sell the corn unground to the bakers, or rather exchange it for bread; those living higher up go directly to the mill, where the grain is ground and a certain part taken a toll. This same custom formerly existe in Scotland, and is still in existence in som of the mountainous parts of Germany herein we have a proof that habits are th same in all countries, as long as the mod of life remains in its simple and we migh say original character. The quarrels be tween the miller and his customers ar likewise the same wherever this custom observed. When harvest is over, the mi lers of the Pyrenees send out their wive on horseback, to look wherever Indian cor has been raised, and to ask there "fodde for the mill." These female emissarie mounted upon their little ponies, in fu Sunday dress, are never seen without th inevitable distaff in their hands.

In the rocks near Aruns there are man stone-piles, where slate and marble is ob tained. The latter is carried in larg blocks to the highways on sleghs; the sla is carried off in baskets by women, and is, indeed, surprising what loads they ca master sometimes. They seem to be in ferior to men in no way, in regard strength. The same observation may b made with reference to their work in th field; these women lift sacks filled wi potatoes or corn, such as many a man wou be unable to move. Their manner of doin field-work is somewhat characteristic; the tongues constantly moving while at work crying and singing, coaxing or cursing, the drive their oxen, harness them, plou with them, and display occasionally the power with the whip. In spite of all th hardships they undergo, the burning su and the rough weather they are constantl exposed to, you will find many beauti among them. The face is brown like th of an Italian or Spaniard, but they hav small aquiline noses, and superb eyes, ful sparkling, and almond-shaped. Their dre is peculiar, but beautiful. A scrupulous fitting black jacket is worn over a dre more or less ornamented with vario stripes, and its waist kept together by sm ribbons or strings. A kind of hood, of th same color with the jacket, covers the hea this hood is sometimes folded square an thrown back upon the back part of th head, or so arranged as to protect from th sun. In cold or rainy weather, the hoo reaches the shoulders. The stockings both sexes are more peculiar still; they a made to cover the upper margin of th

hoes, into which the foot is put naked.—The men in the valley of Ossau have brown caps, similar to the Tam O'Shanter of Southern Scotland, but here called Berreti. A jacket of a roundish cut, and short pants, made of blue velvet for the holidays, completes their dress. In the more western valleys, they wear sandals made of unbanned leather. These sandals, girded neatly around a fine foot, have a beautiful appearance; in reality, however, there is scarcely anything less comfortable, and a man not accustomed to these strange protectors of his pedal extremities, might, especially in a damp atmosphere, expect with some certainty to have at least some kind of a rheumatic affection, things however entirely unknown among these unsophisticated children of the mountains.

WHEN CORN GROWS.—Dr. R. Harrison, of Prince George County, Va., has taken pains to make some careful examinations to ascertain whether corn grows, as is generally supposed, more at night than by day. August 1, corn grew in twenty-four hours five inches; at night one and a half, and in the day time three and a half inches. August 2, it grew four and seven-eighths inches; at night one and seven-eighths, and in the day three inches. Several other observations made at different times are detailed with similar results.

New England Farmer.

CARBONIC ACID IN THE SOIL.—The air found in the interstices of arable soils has been analyzed by BOUSSINGAULT and LEVY, and found to contain from 22 to 23 times as much carbonic acid as the atmosphere, and when they had been recently moistened, 145 times as much.

Prairie Farmer.

Prices of Provisions.

The large railroad expenditures at home, and the short harvests abroad, have served to sustain prices for some years at a high level, and by so doing confer wealth on the farmers at the expense of the towns and manufacturing districts. At this moment, however, prices are lower in New York than they have been since 1852—that year of cheap money. As an indication of the course of events, we take the following prices in New York for ten years past at two periods of the year, viz: at the closing and just before the opening of the canals.

PRICES IN NEW YORK.

	Flour, Wes. mixed.	Wheat, Genesee.	Corn, W. mixed.	Beef, Mess.	Pork, Mess.	Lard.	Butter, Ohio.
	$ c.	$ c.	$ c.	$ c.	$ c.	c.	c.
1847—Nov	6 25	1 35	0 74	8 25	14 75	11	12½
1848—Nov	5 31	1 30	0 67	11 00	12 37	8	11
1849—Nov	5 37	1 30	0 63	14 00	10 68	7½	12
1850 Nov	4 68	1 19	0 71	7 37	11 18	7¾	11
1851—Nov	4 18	1 03	0 60	8 50	15 25	8¾	12
1852—Feb	4 50	1 08	0 62	10 25	18 87	10¼	18
1852—Nov	5 37	1 27	0 95	8 25	18 50	12	22
1853—Feb	5 25	1 25	0 67	9 50	20 00	10	13
1853—Nov	6 81	1 58	0 85	7 75	17 00	11¾	14
1854—Feb	9 12	2 10	1 03	8 50	15 75	10½	13
1854—Nov	8 82	2 45	0 94	11 00	12 50	10½	15
1855—Feb	4 75	2 47	0 99	8 50	12 37	9¾	11
1855—Nov	8 75	2 47	0 99	8 50	12 37	9¾	11
1856—Feb	6 75	1 75	0 72	9 75	18 00	10¾	17
1856—Nov	6 55	1 60	0 68	8 50	14 50	13	16
1857—Feb	6 50	1 70	0 73	11 50	23 70	14¼	17
1857—Nov	4 99	1 25	0 75	9 00	19 60	12	13
Feb—1858	4 80	1 24	0 74	10 50	17 50	10½	12½

In 1852, flour and grain was cheap, but the average of prices since then, down to the present time has been higher than perhaps ever before, and the influence of them upon retail trade and small manufacturers in the cities has been severe. The price of food in the cities is cheaper than it has been in any year since 1852, and must have a corresponding effect upon general trade.—*N. Y. Economist.*

REMEDY FOR THE "STRIPED BUG."—William Saunders, a skillful gardener, states in the *Horticulturist*, that the striped bug may be successfully repelled, by simply placing *a pane of glass* over each hill, supported at the corners on four small wooden pegs. He does not say how near the surface the glass should rest, but we suppose within an inch or two. He states that this has been found as effectual as the wooden box, while it freely admits air as well as light. It is a very easy trial.

HORTICULTURAL.

(SELECTED.)

Practical Hints to Amateurs.----July.

BY THE LATE A. J. DOWNING.

If you have a crop in your kitchen garden which looks sickly, water it once or twice with guano water (a handful of guano to a pail of water), stirring the soil with the hoe before applying the water.

This is the season of the year to give *shape* to your shrubs or plants. A little shortening-back, on overgrown shoots will make the dormant buds push out new shoots on parts of a shrub or tree which are deficient in foliage, so as to bring it into good shape before the season of growth is past. For small plants, that you wish to make bushy and thick, there is nothing like *pinching-off* the ends of the leading shoots while they are young. It gives you thick and compact heads of leaves, instead of few and slender shoots.

Don't be discouraged at the inroad of an insect that threatens to destroy your favorite trees or plants. Set about studying its natural history, and depend upon it, if you only get a correct notion of its habits, you can soon exterminate it by a little energy and perseverance. Tobacco water will kill any insect if it is judiciously applied, and *perseveringly repeated*, however much they may seem to defy it at first. Always use it in the morning, or just at evening; for it is throwing away your ammunition to fire into the enemy's quarter's in mid-day, when they are wide awake and ready to dodge the fire.

If you want to propagate ever blooming roses by *cuttings*, your best time is now, just as the young wood begins to harden, after the first flowers are past. A frame, sunk on the north side of a fence or a wall, with a sash to cover it, will enable you to raise hundreds of roses with very little attention. Make the soil in the frame six inches deep, of rich mould, mixed with one-half fine sand. In this plant the cuttings, with a single leaf on the top of earth. Water them every evening, leaving the sash off all night and replacing it early in the morning. In case you want them to plant out in the borders, you may let the cuttings grow in the frame, where they strike all summer, covering the glass with about six inches of straw in the winter, and planting out the young plants early the next spring; but if you want them for pot culture, then of course, plant the cuttings in pots, instead of the soil of the frame; and in five or six weeks they have formed new roots, so that you may repot them—one in each small pot.

To have raspberries very large and fine, you must have a new plantation every fourth year. The soil should be trenched twenty inches deep, and a quantity of coal ashes and stable manure turned well underneath. The raspberry likes cool, deep soil, and a top dressing of guano every spring adds greatly to the size of the fruit.

Look over your cherry-trees, and see that none of them suffer from being hide bound. If they look unnaturally small in any part of the trunk, and swollen in other parts, you may be sure this is the case; and if you do not remove it by slitting the outer bark with your knife the tree will soon decline. Old cherry-trees are very much improved in health and productiveness by shortening-in the long branches at this season of the year, thus forcing them to make some thrifty new shoots.

Plum trees like a moist soil. I have found that covering the ground 4 inches deep with old spent *tan-bark*, is a good way of preserving the moisture and keeping the tree in health. I scatter fresh lime thickly over the surface of tan every year, as soon as the green fruit begins to fall. This kills every curculio that attempts to enter the ground, the tan prevents the weeds from growing, keeps the roots cool, and insures me good crops of plums. I spread it as far as the roots extend, and it wants renewing, or adding to, once in three or four years.

Don't indulge in the folly of *hilling up* all the plants you raise in your kitchen garden. If you study nature, you will see that, as plants grow older, the roots at the base of the stem always incline to *raise out* of the earth; from which it is clear that they prefer not to be wholly buried in it. Besides, unless it is a plant that dislikes moisture, you lose half the benefit of the summer showers by piling up a hill over the roots to turn off the rain. It is much better to loosen the ground thoroughly, and keep it nearly level.

Liquid manure is of great advantage to crops in a growing state; but it has double the usual effect if applied in damp and cloudy weather.

In raising hedges, the great point is to get *breadth at the bottom*. It is easy enough to get a hedge high enough; but if you let it run up without cutting it back, so as to make a broad and thick base, you can never make that base broad and thick afterwards. Shorten back therefore, till you achieve what you want at the bottom, and the top will afterwards take care of itself.

If you find any of your favorite fruit-trees are failing from the dryness of the season, or heat of the sun, cover the surface of the ground two or three inches deep with straw. Indeed, nothing benefits any tree so much in this climate, as keeping the roots in uniform temperature, by this coat of straw laid on the surface of the ground.

There are few trees such gross feeders as the grape-vine. Soap suds and liquid manure, applied every week, will give an amount of luxuriance and a weight of fruit, on a single vine that seems almost incredible. I have seen an Isabella Grape produce 3,000 fine clusters of

well ripened fruit in a single season, by the liberal use of manure, and soap suds from the weekly wash.

If you wish to bring fruit trees into bearing at an early age, pinch off the ends of the shoots now, and again at the end of six weeks. This accumulates the sap, and the surplus becomes fruit and buds for the next season.

The secret of neatness and economy in summer culture of a garden, is to *stir the ground often*. It is a trifling task to destroy an acre of weeds if you take them half an inch high, but a very laborious undertaking to get them subdued, if they once are allowed to make strong roots and leaves of full size.

AN OLD DIGGER.

[*The Horticulturist.*]

Plugging Trees with Brimstone.

A belief has prevailed among farmers and gardeners, for aught we know, from time immemorial, that if you bore a hole into the trunk of a tree and fill it with sulphur, or roll brimstone, if there were insects upon it they would soon leave it, and if there were none on it at the time, there never would be. A very worthy friend told us not long ago, that he was full in the faith in the efficacy of this application; "because," said he, "it has been tried 'out and out,' and found to be so." It was in vain that we assured him that it was of no more use than it would be to put a brickbat into the tree, and for these reasons:

Sulphur, or roll brimstone, would not dissolve and thereby be circulated throughout the tree; and if it were dissolved and taken into the circulation, it would kill the tree before it would the insects.

We are happy to find a communication on this subject, from Dr. Wright, of Boston, in this (April) number of Hovey's Magazine of Horticulture, in which we find some tangible and indisputable experiments are related, which settle the question. The following is the communication. We invite the attention of our readers to the facts.

The following appeared in the Country Gentleman of February 20, 1858:

"SULPHUR FOR INSECTS.—I find by the Cultivator that you have no faith that sulphur has any effect on insects or blight, when put into a hole in the trunk of the tree. The Mockernut Hickory on this place, (Mr. Manice's estate) were dying very fast, the cause being an insect eating the buds in the spring and early summer months. About four years ago my employer, Mr. Manice, had holes bored with an augur in the trunk of the tree, to the pith, and then filled with sulphur and the hole stopped up. Since that was done we have lost but few trees. I had no faith in it at the time my employer did it, but such are the results. * * How it acts I cannot tell. You know vegetable physiology is yet imperfectly understood. RICHARD PARNELL, Queens, N. Y."

The above is much the same as we meet with periodically going the rounds of newspapers. Agricultural editors are generally too well posted in such matters to believe that sulphur could have the *least* possible effect for the destruction of the curculio, canker worm, or any other insect, when applied as above recommended. As to its remedial qualities, it possesses none whatever; it is *no* remedy in the destruction of any insect as above proposed, for the reason that the sulphur will remain the same *in quality and quantity;* no diminution of quantity takes place, for all capillary communication is cut off and *ever* remains so as long as the tree continues to stand.

Now for facts, showing the fallacy of boring and plugging with sulphur. About twenty-five years ago, an article went the rounds of the newspapers, saying the Shakers had tried the experiment of sulphur, and had entirely extirpated the canker worm, and saved their trees in pristine freshness. The communication stated, that, so sudden (?) was the effect, that in less than twenty-four hours scarce a vestige of the myriads was left; each had let himself down in "double-quick time" by a ladder of his own construction, (of course they do; sulphur or no sulphur, all leaving the tree at about the same time to take on the chrysalis state); neighbors gathered to see the way in which young Mount Vesuvius was stirring up the inhabitants of the upper regions.

The above was a *stirring* affair in more ways than one; my neighbours read the account, and forthwith set to work on their fruit and ornamental trees; sulphur was in demand, with an upward tendency, (not by the aid of sap, however,) and results were looked for. Many a fruit tree was cared for, which was more than could have been said for any prior time since the first dibbling of them into holes as their last resting place. Some said, "sulphur was the thing;" others had *known* quicksilver to keep off caterpillars, so long as any was left remaining in the hole; in other words, till the sap vessel had used up the charge first put into the auger hole.

Determined to show the *absurdity* of such a mode of proceeding, I too set to work with both sulphur and quicksilver, carefully weighing the quicksilver in the balance distinctly sensible to the hundredth part of a grain. The holes were bored and cleared so that I might thereafter remove it without trouble, as it all laid in one globula—the holes were cemented over. These holes were opened from year to year, and the quicksilver taken out and weighed, showing no decrease from first to last. These facts I gave you, as you will notice on reference to your Magazine, Vol. XIX., p. 152. Amongst my trees selected for trial of sulphur, were two venerable elms. The augur used was of the size of the rolls of sulphur, and was al-

lowed to penetrate to the very heart of the ancient specimens. Roll after roll of sulphur was put in and the holes plugged—one with grafting clay, the other a wooden plug. The one on which grafting clay was used soon healed over, while the other showed signs of bleeding for a length of time. This was over twenty-five years since.

Now, *mark the result.* This winter those two trees were cut down, one having been struck and killed by lightning, its mate on the opposite side must also share its fate for harmony's sake, and so give place to others planted some thirty years since, with the view of making up the deficiency.

On cutting up the butts, it was found that sulphur and hole were of the same size as when operated on twenty-five years ago. The holes had grown over and that was the only change observable. The better to illustrate such folly, I send you a piece of the same, that you may have it to show to others. A like piece I shall place in the hands of Chas. L. Flint, Esq., Sec'y of the Mass. State Board of Agriculture, State House, Boston; and still another will be sent to Col. B. P. Johnson, Corresponding Secretary N. Y. State Agricultural Society, Albany, N. Y.—*Maine Farmer.*

The Repulsion of the Yellow Bug from Pumpkin Vines, &c.

Messrs, Tucker & Son—The class of vegetables liable to the attack of the yellow bug, though not staples, are yet important. The pumpkin, as ordinarily cultivated by the farmer, in the corn-field, is valuable in connection with the fall feeding of beef and pork, and the production of milk. It is the more valuable to the farmer because, when cultivated in connection with corn, it is produced so cheaply. The winter squash is a valuable item in the winter stores of the family. The cucumber in July and August, and melons of all sorts in August and September, become cheap luxuries wherever there is a light soil and a sufficiency of heat to ripen them. The greatest obstacle often to their production is the attack of the yellow bug. And yet his repulsion is readily and cheaply accomplished.

MODES OF REPULSION.

1. Cover the hill, just as the plant begins to appear, with *thin bats of cotton or flax tow*, securing them against the wind by earth placed on the edge. The rising plants will lift up this covering. It may be removed altogether when the plants make the fourth leaf. Such a covering excludes a portion of the light and air from the plant, while, on the other hand, it secures it from harsh winds and light pests. On a small scale, in a private garden, I used this mode with great success in my boyhood.

2. *Millinet covered boxes.* These are made about 12 or 15 inches square, and about 6 or 8 high, of thin boards, the top being covered with Milling, put on with carpet tacks. A light brace ought to be let into the top of the box, across one course, to prevent the box from working out of shape, before the covering is put on. This box is also a protection against wind and light posts, though, by shutting off a portion of light, it hinders the growth somewhat in fine weather. Even without the addition of the millinet this box is usually a protection against the bug.

3. *Dirt mounds.* In light, sandy soils, and for field or market garden use, this mode is much more ready and cheap than the preceding. Prepare yourself, first making a moulding frame. This is done by taking good pine boards about eight inches wide, sawed into four pieces so as to make a beveling box about one foot square at the bottom, and fifteen inches at the top. A brace should be let in and nailed firmly across one of the corners, the whole thing being made like the box in No. 2 above, except that it is made beveling and much srtonger.

Place this box around your hill of melons or cucumbers. Then let the earth be firmly banked around the outside up to the top of the box. Then strike the box a light blow on one side to loosen it a little, when it may be lifted out, leaving a firm, sloping bank around your hill. Two men should always work together in making them, standing on opposite sides. I used such banks many years in a market garden. They may be made probably for one-half cent a piece. When properly made they will stand a heavy rain uninjured. The second time of working among your plants they may be removed readily with the hoe. Occasionally the bugs will get into these earth boxes: but, all things considered, I prefer them to any mode I have ever used. They, too, like board boxes, protect the young plant from the cold winds.

4. *Tomatoes sown among and around your vine plants.* This plan has often been recommended. I have not tried, but certainly think very favorably of it. The rank flavor of the tomato plant it is well known, is offensive to most insects. It is easy, near the close of the summer, to save tomato seeds cheaply and in large quantities. Less perfect fruits may be selected than those used for your main crop. In dropping your melon or other seeds, drop a few tomato seeds *with* them, and a circle around them. Then cover all up. The tomatoes will spring up as soon as the vines, and gain height faster. When your vines are out of the way of the bugs, pull up your tomato plants carefully, and throw them away.

In preparing your tomato seed for use, first soak them a few hours, and then mix them with fifteen or twenty times their amount of wood or coal ashes sifted. Stir them well together. In the use of this compound you will be able to sow your tomato seed more speedily, evenly, and economically, than you could if trying to sow them alone.

It is sometimes recommended to bring forward your tomatoes for this purpose in a hotbed, then transplant them to your cucumber and other hills, but this method will be quite too expensive for the farmer and market gardener.

5. Mixtures of *fresh wood ashes, plaster, snuff, flour*, the latter being used to produce the adhesion of the other things, are often used, and with more or less good effect. When the proportion of ashes is too large they sometimes burn the plant. Such mixtures are, at best, but an imperfect protection of the plant, at least they have been so in my experience. They also need renewal after heavy rains. One imperfection attending their use is the almost impossibility of applying them to the lower side of the leaf of the plant, where often the bug works the most fatally.

The application of a *cheap wash* with a syringe—a wash having a permanent and offensive odor and taste, but one not acrid, might be useful. Of what such a wash should be constituted, experience alone can determine. Many things highly offensive to one species of animal are not so to another.

In conclusion, my experience throws me back on the millinet covered box, for the private garden, and on the dirt mounds for the market garden, as being the cheapest and surest modes of defence. C. E. GOODRICH.

Utica, 1857.

Country Gentleman.

From the Valley Farmer.

Celery—Its Culture.

Celery can be grown so as to be fit for the table by the month of August. Its early production is not so much required as its later, principally, because its best season of use, (through the winter,) is at a time when all other salads are out of season. I shall endeavor to give the best methods of culture, for the general crop for winter use.

For this purpose the seed may be sown from the beginning to the middle of April, either in a cold frame or an open border. If in the former do not elevate it but place it on the level ground. In either case the ground should be well broken and pulverized, and tolerably rich. As the seed takes some time to germinate, care should be taken to preserve a moist surface.—This the frame assists in doing, by preventing the winds from drying the soil—but the sash may slope to the north, or be very slightly covered with litter, till the plants are up, or a border, partly shaded by a wall or a building will answer. The seed in this bed may be either sown thinly broadcast, or in drills, six inches apart, drawn by the finger or hoe handle.—When the young plants have got four or five leaves, undoubtedly the best plan is to transplant them at once into another bed. The ground for this should be good, rich mould, and if you mix in with the top-soil some old, leafy, decomposed manure, and prick the plants out in rows three or four inches apart, they will send out their fibrous roots into it and remove the next time with a ball of earth as big as a man's fist.

The celery, like many other plants, sends down from the seed a straight tap root, which is broken when first removed and the roots spread. If the plants are allowed to get a good size before they are removed at all, they must be reduced at the top by taking off the extremities of the leaves, so as to balance their meagre roots, for they will only have this tap root and a few fibres; they will also require much watering to start them anew in this state. This bed should receive good sprinklings of water a few times till the plants get established, and if the weather is very dry an occasional good soaking afterwards.

By the beginning of July the plants will have attained sufficient size to plant out in their permanent trenches. This plant, being a native of low, moist situations, it is in such, that it succeeds best. A deep, rich, damp soil it revels in. If you have a damp (not wet) situation, with good soil, select it. It is most common to manure direct in the trenches for this crop, but if your ground is in good heart, by previous manuring, it is probably best not to manure afresh, as it doubtless has a tendency to cause it to speck and rust from our hot dry sun. Use well rotted manure, if any. Prepare your trenches by stretching a line and digging out the soil a spade deep, and a foot or eighteen inches wide. Lay the soil taken out evenly on either side and form a little ridge.—Then if you manure, scatter it along in the trench, and dig and mix it up well with the soil; spade deep in the trench, scatter along another inch or two of soil on the top; make it smooth and level and it is ready for planting. Choose a showery day, if you can, for this operation, or a wet, damp spell, because we often get a fresh hold in the soil and be no more trouble as to watering. Take up the plants with a trowel or handfork, retaining as much soil as the roots will hold, and plant a single or double row along each trench about six inches apart each way.

Give each row a good soaking as soon as planted. With this treatment they will need no shading, but if the weather should prove dry, a thorough good soaking should be given them twice a week. It is a good plan to have a reserve of plants in case your first planting should fail; indeed successive plantings may be made, till near the end of August, if desirable.

After the plants have grown considerably, and after the weather begins to get cooler, earthing up may be done. Do not begin too soon, however, as they will not keep so well in the winter, if blanched too early. A dry sunny afternoon is the best time to do this. Prepare for it by going along the rows and pulling

off the lower broken stalks and offsets. Make the soil on each side fine and nice, and earth up about three inches, taking care to grasp the leaves of each plant in the hand, and to press the earth close around them, thus bringing the leaves all up together in an upright position. This earthing of the plants must be continued at intervals of a week or ten days, as the celery advances in growth, and until it ceases.

Just before severe weather sets in the stalks may be taken up and laid in for the winter. A raised bed or bank, with a slope that the stalks may be laid against, close together without touching, and covered all over with soil, and a coat of leaves or straw over all, will keep them in good condition all winter.

The stalks of celery should be blanched white and when cut through they should be solid and crisp. C. SANDERS.

St. Louis Fruit Garden, Feb. 25.

From the Main Farmer.

Mealy Potatoes all Summer.

It has always been difficult to keep potatoes "mealy" after warm weather comes on. The starch in them becomes changed—the sprouts start and the potato becomes a waxy, watery thing—hardly fit to eat.

We clip the following proposed mode of preserving them in good condition for the table, from the "Homestead." We have never seen the experiment tried. If the process will accomplish the object it will be valuable.

"If your readers are aware of the following process, which I am informed by Dr. J. M. Wilson is practised in Scotland, I presume they will have no objection to give it a second perusal, and to make the experiment on a small scale at least.

"Diluted ammoniacal water in the proportion of an ounce of liquor of ammonia of the druggist, to a pint of river or rain water, has of late years been successfully employed for shocking the vegetative power of potatoes, and prolonging their suitableness for food. Potatoes immersed four or five days in this liquid, retain all their edible properties unimpaired for a twelve month, improved in flavor and mealiness. The effect of the liquid is to consolidate their substance and extract their moisture. After immersion, the potatoe should be spread so as to dry, and will then keep good for ten months; contributing in this way not only to the comfort of families, but also to the health of mariners exposed to long voyages at sea.

FORREST SHEPHERD.

Peach Borer Plastered Up.

We lately heard of a fruit grower who, after cutting out a number of grubs from his peach trees, thought he would try the experiment of *walling* in a few. So he took some pure white clay, and plastered up the holes left by th gentlemen within. The clay soon became dry the wound healed over, and, of course, th borers were smothered.

Taking a hint from this, we, last summer, cu off the retreat of a borer in one of our youn English elms. He had worked his way int the tree, an inch or more, and then ascended pushing behind him and out of the hole, th debris made by his incisors. With a sort o malicious delight, we cleared out the mouth c the hole with a knife, and then filled it up wit a mixture of gum-shellac, made of about th consistency of thick cream. This dried ver soon, and, of course, gave the borer an ai tight parlor, which was fatal to his health an his future explorations.

Nutritive Qualities of the Onion.

It is worthy of notice as an extensive articl of consumption in this country. It is largel cultivated at home (in England,) and is impor ted to the extent of 700 or 800 tons a yea from Portugal and Spain. But it rises in im portance when we consider that in these latte countries it forms one of the common and uni versal supports of life. It is interesting, there fore, to know that in addition to the peculia flavor which first recommends it, the onion i remarkably nutritious. According to my analy sis, the dried onion root contains from 25 to 3(per cent. of gluten. It ranks in this respec with the nutritious pea, and the *gram* of th East. It is not merely as a relish, therefore that the Spaniard eats his onion with his hum ble crust of bread, as he sits by the refreshin spring; it is because experience has lon proved that, like the cheese of the Englis laborer, it helps to sustain his strength also and adds beyond what its bulk would firs suggest—to the amount of nourishment whic his simple meal suggests.—*Johnson's Chem. o Com. Life.*

Receipt for Cooking Asparagus.

Cut the tender part of the stalks into hal inch bits; add a little water and let it remain a short time. Then drain it off and add a little more water, and boil until done; butter, salt and pepper to your taste; and if you wish an extremely nice dish, break in one or two eggs, and stir it well just before pouring it off.

[*Homestead.*

The onion is a superior disinfectant. Two or three good sized ones, cut in halves, and placed on a plate on the floor, absorb the noxious effluvia, &c., which are generated in the sick room, in an incredibly short space of time. They should be changed every few (say six) hours.

Summer Management of Fruit Trees.

The management of fruit trees requires the constant attention of the cultivator. Unless he is willing to bestow care and attention upon them, it is of little use to plant with the expectation of obtaining superior fruit. Neglected trees may, and undoubtedly will produce more or less, but of inferior quality, and so much unlike that obtained by high cultivation, that it would scarcely be recognized as the same variety. The mass of fruit offered for sale in our market is of this description; and it only need to be compared with that raised by the skilful cultivator, to see how great is the difference in quality, or, to purchase, to learn how great the difference in its market value.

It would be almost impossible to expect to find our markets supplied with the finest fruits. There always will be quantities of inferior quality raised, and it will reach the market for sale. But if those who produce it knew the value of that which is good, there would be less than there is at present, and there would soon be more attention given to its cultivation. But the truth is, a great many who raise fruit do not know to what perfection it can be grown; and, ignorant of this, they remain satisfied with what they produce, and make no attempt at improvement. If it is an object to introduce new varieties in the place of old ones, it is certainly an object to grow them well, or they may be inferior to such as they already have. Were it not for the amateur cultivators, who send their surplus crop to market, it would be difficult to procure superior fruit, notwithstanding the very high price it always commands. Fortunately, the fine specimens which have occasionally been offered, have shown to what perfection our best fruits may be grown; and those who can profit by example have done so, and fine specimens, though by no means abundant, are less so than formerly. We can only hope that continued attention to the rearing and management of trees will result in a liberal supply of that which is good, in place of the inferior products of our gardens and orchards.

To accomplish this, however, especially with the pear, which stands at the head of our hardy fruits, it is scarcely possible to do so only under what may be termed artificial culture,—that is, growing the trees as pyramids or espaliers; so many of the choicest kinds require shelter or protection from our cold winds, that as orchard trees, only in high favoured situations, they cannot be relied on for constant crops of the finest fruit. We may in time possess such varieties, but at present there are but a few which give good results under such treatment. Other fruit trees are less capricious in their growth and produce.

That our remarks may be better understood, we shall give them under these four heads:—Summer Pruning, Thinning the Fruit, Mulching, Watering.

Summer Pruning.—We have in our previous remarks above referred to, (p. 97,) given advice in regard to winter pruning, manuring and insects. We shall suppose that the trees are now in vigorous growth, after the ordinary labours of the season. The first thing which will require attention, with all but orchard trees, is the summer pruning. This, with some kinds, should already have been commenced, though July is the month when the greater portion of it should be done,—but it will require to be continued till the last of August, and even with some vigorous trees till into September. We have on several occasions given advice in regard to summer pruning, but at the risk of being tedious, we shall proceed without reference to anything we have said before. The whole process of summer pruning is new to most American cultivators, and little understood except by those who have made it a study, and perfected their study by practice. The French, who are masters of the art, have long managed their trees in this way, and it is to their intelligent cultivators that we are indebted for what we know in reference to its practice. They have reduced it to such a system, that they can bring their trees early into bearing, and clothe them with fruit spurs from top to bottom. We intend, in a future article, to illustrate the practice with engravings, from some of the French writers, by which alone it can be fully understood.

Summer pruning or pinching,—for most of the work should be done with the thumb and finger, before the shoots acquire solidity,—consists in stopping the elongation or growth of the young branches by pinching or cutting off the ends more or less, &c. By this means, an increasing formation of wood is prevented, and the accumulated sap forced into the shoots below those which are stopped, and what would otherwise be barren spurs, (called *dards* by the French,) become fruit buds in a short time. As an illustration: suppose a shoot was produced the last year two or more feet long, and at the winter pruning it was shortened to one foot. Now this shoot, when it begins to grow, will only push towards the end, say the last five or six buds; the other buds will push so rapidly, that they soon crowd each other, and make wood two or three feet long, which would have to be cut back again at next winter's pruning. The process may go on for years if not checked, until the trees become a mass of wood, without any appearance of fruit buds. If such a shoot is examined now, it will be seen as we describe it, viz: with five or six young shoots springing from the last five or six buds. Their growth must be checked, in order to push out the dormant buds below; pinch them off, therefore, at the second, third, or fourth joint from the branch—if already too tough to break, cut them with the knife. In

a short time the eyes below will begin to grow, or if already grown, they will begin to thicken and form a good strong bud at the end. The shoots that were pinched off will also grow stouter, and form one or more buds along the sides, or perhaps the terminal bud will break again; if it does, after making four or five leaves, it should be stopped a second time, later in the season. The main shoot, if strong, may be nipped off at the same time, unless wanted to fill some vacancy, or make a more symmetrical tree. Pinching it off at a greater or less length, depends upon the vigour of the tree; but as a general rule, it may be stopped when six or eight inches long. If stopped too short, it will make all the dormant buds below break too strong; and, in the place of incipient fruit spurs, fresh shoots will be formed, which will need pinching again.

Proceed, in this way, to stop all the *side* shoots, unless they are wanted to fill some vacant place, all over the tree, afterwards pinching the main shoots, to give shape to the head. If the growth is carefully watched, the results of this process will soon be apparent, and spurs will be formed along the branches which will become bearing shoots in the second or third year, sometimes the first; but with trees upon the pear, not often till the second or third. Repeat the pinching as often as the buds break on the shoots already operated upon, until the growth begins to slacken in autumn, when it may be discontinued, and the final pruning left to be completed after the ripening of the wood.

Though summer pruning is applied principally to the pear, it may be adopted with equal benefit upon the apple, plum, and other fruits, especially the peach, only with some modification, as the latter tree does not form spurs, but bears only on the young wood of this year. It should not, therefore, be pinched but once, and not later than the last of July, otherwise the shoots will be too weak, and make too late a growth to form fruit buds.

Thinning the Fruit.—Trees already coming into bearing need much attention in regard to thinning the crop, especially with some prolific sorts of the pear—the Bartlett, Louise Bonne of Jersey, Duchess and Passe Colmar, for example. These set their fruit so abundantly, that if all were allowed to grow, they would not only be small and indifferent, but at the same time would injure the tree if young. Some kinds have their fruit very regularly distributed over the branches like the Beurré Bosc, Swan's Orange, Dix, Columbia, &c.; and if these are not thinned, the fruit is larger and better, and the trees receive less injury from the crop. With the luxuriant sorts, the thinning process should be commenced at once, taking off all but one in each cluster immediately, and subsequently, after the insects have made their customary attacks, gathering those in which they have established themselves, and thus not only relieve the tree, but accomplish something towards destroying the progeny for another year. We believe that if thinning was promptly attended to, and all the wormy specimens picked before they were allowed to fall, in a few years the insects would cease to commit any very serious injury, and there would be a better selection in the important operation of thinning. The early sorts of pears should have their thinning done immediately, complete; but the latter varieties may be gathered as we have above detailed.

The amateur cultivator rarely thins his fruit enough,—the desire to procure the first fruits of a new plantation tempts him to allow his trees to bear too freely; but it is a fatal error, and one which has done more than anything else to bring dwarf trees (pears and the quince) into disrepute. The prolific bearing sorts produce abundantly on the pear, but when to their abundance is added the still more prolific character of the quince, one or two heavy crops give the trees such a check that they recover slowly, or live out a miserable existence.

There is no rule that can be given to guide the novice in fruit culture, so much depends on the vigour of the tree, &c.; but if we say a tree three or four years old should not be allowed to bear over a dozen specimens, we set it within bounds. The quantity may be increased yearly, as the tree acquires age and strength, till the sixth or eighth year, when it may be allowed to produce seventy-five or one hundred pears. Now it is no uncommon occurrence to see very small dwarf pear trees bearing fifty or more specimens; and it is not till dear experience has taught the lesson, that this mistake is discovered and avoided. The habits of the different sorts of pears must be known to proceed with judicious thinning; still, the general rule which we have given will answer every purpose till such knowledge is acquired. It is better to err on the right side, and thin too much rather than not enough.

Mulching.—In our warm and variable climate, where we experience such seasons of drouth, the energies of the cultivator are often expanded without any adequate return. No sooner does a plantation of trees begin to show its beautiful fruit than one of our long and parching drouths sets in; the trees, perhaps, show little diminution of vigour, but the promising fruits of June become withered, cracked and knurly specimens by the end of August. The process goes on gradually, and only to attentive eyes is it observed till too late to be remedied. Knowing the tendency of many of our best pears to be subject to this injury, the cultivator will guard against it as far as it is possible to do so. Liberal quantities of water will supply the deficiency, and usually check the evil; but this element is not always at hand in sufficient abundance to do any good, and the labour of supplying it is expensive. Other expedients must be resorted to, such as

frequent stirring of the surface-soil, mulching, &c. The former operation is always attended with good results, but mulching is more effectual, and should be resorted to in all thin and shallow soils at least, and if deep ones all the better. A thin layer of strawy manure, old compost, tan, leaves or hay should be spread over the ground to the distance of six or eight feet from the tree. We say *thin*, because we think it more beneficial than if thick; the *rationale* of this is, that a thick covering entirely excludes the air, which is beneficial to the roots, while it serves no available object; it is only for the purpose of checking evaporation, and a small quantity does this as well as a large one; besides, the dews which fall on the the latter do not reach the roots so readily as on the former. If the mulching material contains within itself enriching substances, it is of course better than that which does not; on this account we prefer manure, either old or new. It should be spread over the surface immediately. It effectually checks the growth of weeds, and when water is given, it prevents the surface from becoming hard and baked, as is always the case when water is applied in dry weather.

Watering.—There are few sorts of pears which do not, in our climate, at some period of the summer need water. Sometimes the early part of the season is dry and the latter moist; and again, the early part is wet and the latter dry. In either case, there will be need of artificial watering, if the object is to have the best fruit. On thin soils it is still more necessary, and success cannot be complete without it. There have been objections made to frequent watering, and justly too; but this has been because it has not been given with judgment. If the advice is to water, all trees are watered alike—the newly planted, the young, and bearing trees; hence the advice to water often would be attended with injurious results, —for more newly planted trees are killed by constant soakings, than from any other cause. Water should not be administered till the tree is able to digest it. Recently planted, it is unable to do so; but as soon as firmly rooted, and the demand for supplies of sap are made by the rapid growth, it may then be given freely and with the best results. One other injury there is, too, connected with watering even large trees; this is the chilling the surface-soil and causing it to bake and become hard, and impermeable to the dews and air. This is to be avoided. Water should be given in liberal quantities, so that it may reach the *bottom* roots, and the surface should be stirred (when it is not mulched) as soon as it becomes dry enough to lose its adhesiveness. In an article in our last number, (p. 241,) we alluded to the great benefits of watering; and, in connection with it, we forgot to quote some remarks of the late Mr. Knight, President of the London Horticultural Society, showing the great importance of watering in vegetation, and refuting the idea that its application, even during sunshine—which to some gardeners is such a bugbear—results in any injury whatever.

"The quantity of water which may be given with advantage to plants, of almost every kind, during warm and bright weather, is, I believe, very much greater than any gardener, who has not seen the result, will be inclined to suppose possible; and it is greater than I myself could have believed upon any other evidence than that of actual experience.

"When water is distributed in the usual quantity from the watering pan, its effects for a short time are almost always beneficial, by wetting the surface of the ground. But, if water thus given be not continued regularly, injurious effects will follow; for the roots of plants (as I have shown in the *Phil. Trans.*) extend themselves most rapidly wherever they find proper moisture and food—and if the surface alone be wetted, the roots extend themselves superficially only, and the plants consequently become more subject to injury from drouth than they would have been if no water had been given them,—a circumstance which can hardly have escaped the notice of any observant gardener. When, on the contrary, the soil is irrigated, it is wetted to a great depth; and a single watering, once in eight or ten days, is, in almost all cases, fully sufficient.

"It may be objected, that excess of rain is more often injurious in the climate of England than the drouth; but in wet seasons, plants suffer owing to want of light, and, generally, of warmth. And I feel confident that, if the same quantity of rain which the soil receives in our wettest summer, were to fall only between the hours of nine in the evening and three in the following morning, and the sun were to shine brightly and warmly through the whole of the days, no injurious effects will follow; and any experienced gardener knows with what luxuriance and rapidity plants of every species grow in hot and bright weather, after the ground has been drenched with water by thunder storms."

This is the whole philosophy of watering; and it bears us out in our remarks, that the "hot and bright sunshine" of our climate, which we always have, will never injure our best fruits, provided they are supplied with moisture at the extremities of the roots. Watering in driblets is the bane of all good gardening, both in doors and out. Thousands of fine plants are lost every year from this constant shaking the water pot *at* the plants, instead of giving the soil a complete drenching; and thousands of newly planted trees and shrubs are yearly spoiled from the same cause. Let it, then, be fully understood, that water is one of the most influential elements of vegetation, when administered abundantly and at the right time.—*Hovey's Magazine.*

Currant Wine.

[In compliance with a recent request of a correspondent, we asked for information in relation to the manufacture of currant wine, of Dr. Sylvester of Lyons, N. Y., who has been very successful in making currant wine, for several years past, and who provides it exclusively for medical purposes. The following is a statement of the method, which he has kindly furnished us.—*Country Gentleman.*]

Wine can be made from the juice of the currant, combined with water and sugar, in almost any proportions, but the *quality* will depend upon the proportions and mode of manufacture.

The currant should be *fully ripe*, and grown with a full exposure to the sun, except such shade as may be given by their own bushes, properly trimmed and cultivated. The currants should not be *over ripe*. Every one has probably noticed that currants eaten in September and sometimes earlier, have an acid flavour, which is entirely different from the rich acid peculiar to the well cultivated currant. If over ripe they are usually shrivelled a little, and are then unfit for first quality wine.

The currants should be picked and the juice expressed from them before fermentation commences, which will happen in a day or two after they are gathered in warm weather. In a small way, the juice may be expressed by squeezers. I usually grind them in a hand cider mill, several bushels at a time, and express the juice in the press. Let the juice be well strained and added to the sugar, and then add water until all the sugar is dissolved; put it in the cask, and fill according to the recipe No. 1.

I have tried various proportions. In 1850 I made seven barrels according to the recipe No. 1, and have three or four barrels now on hand, so that we are sure it keeps well, being now six years old, and is generally declared to be very superior, though some think it too sweet. It is prescribed by physicians as a tonic, and sells readily at $1 50 per gallon.

I shall make the next according to recipe No 2, which will be less sweet, and *I think* will keep well.

Recipe No. 1—10 gallons pure juice.
100 pounds good sugar.
Water suffi'nt to fill 40 gal. cask.

Recipe No. 2—10 gallons pure juice.
80 pounds good sugar.
20 gallons water.

Mix well, and put into a very strong cask, (alcohol barrels,) in a cool dry cellar, *and bung up tight, vent hole and all.* If the cask is old, do not bung up tight; if you do you may find your liquor turned into *low wines* on the cellar bottom. If you do not stop your barrel tight, it is best to put a piece of gauze over the bung hole, to keep the flies, &c., out. Let the wine remain in the cask three months, and carefully rack it into another before removing the "original package." After nine months more it will be fit to bottle, and grows better every year for seven years, and how much longer I am not able to say. The manner of using the currant wine, to obtain the greatest tonic effect, will be given in a future No.

E. Ware Sylvester.

Lyons, N. Y., July, 1856.

Quick Vegetation of Seed.

Many persons are prevented from growing seedling fruit by the length of time which must, under ordinary circumstances, transpire before they see the results of their care.

A Mr. Boyden, of New Jersey, has hit upon an ingenious method to "hurry up" the fruiting period. His plan is, in the case of strawberries or raspberries, to bruise the ripe fruit in a sheet of paper, and after drying it he exposed it to a freezing temperature by means of a freezing mixture, (say a mixture of powdered ice and salt,) for about half a day, and then planting them, they were found to grow off at once, as if they had passed through a winter season, and a crop of fruit was secured the following season; thus shortening by one half the usual period required to test new seedlings.

This is a very interesting experiment, and may succeed possibly as well with the seeds of larger fruits, cherries, plums, grapes, &c., for instance; if so, it will no doubt be the means of inducing many persons to bestow some attention to growing seedlings, than which there is no more interesting field of operation for the pomologist.

The seed of larger fruit may require to be exposed several times to freezing temperature before planting, but this would be but little additional trouble.—*Ohio Valley Farmer.*

Rezoil.

Mr. S. Piesse, in the Gardeners' Chronicle, says:

"It is well known that the patience and labours of the horticulturist are frequently rendered unavailable by the appetite of some insects. For preserving their flowers from these enemies, gardeners have adopted several plans, not one of which appears to be effective,—more especially against the earwig, which is most to be feared as the flowers approach maturity. How many show dahlias are thus 'cut off in their bloom!' With the hope that the following receipt will offer some check to these marauders, I send it to you, assured that its cheapness and easy application will render it universally appreciated. Take of common rosin, 1½ lbs.: sweet oil. 1 lb.: place them in a pipkin over the fire until the rosin is

melted, stir the materials together that they may be blended; when cold, the substance formed, which I call 'rezoil,' will be of the consistency of molasses. To use the rezoil it should be spread with a brush upon shreds or any fitting material, and wrapt round the stem of the plant; if any support is used, that should be brushed over also. No insect can possibly, or will attempt to cross this barrier; the rezoil never dries, but always remains sticky and clammy—its action as a trap is therefore obvious. To preserve grapes and other wall fruit, we have only to nail a strip of list upon the wall round the entire plant, and then paint it well with the rezoil on both sides, if it can be managed, to keep insects from crawling under as well as over. Other modes of application will suggest themselves without my here enumerating them. Birds, cats, and mice equally avoid soiling themselves with this substance."

A Chapter on Pruning.

Spring pruning,—advantages: It is a time of leisure with the farmer. The labors of the farm, at least in March and April, are not pressing him as at some other seasons. The axes, late from the forest and wood-yard, are in better condition for this surgical operation than at other periods, and this is the instrument some pruners use! The snow may be deep and hard about the trees, so that the executioner may mount to the "scaffold" and execute the lower limbs; and this is the way some pruners prune!

Disadvantages: The sap is in full circulation up the tree. The tree, in all its parts, is filled with sap, and the wood at the wound cannot season. Hence the wood becomes corruptible, and readily decays. Any person who should cut timber at this season, especially hard wood, and expect it would season with the bark on, and become endurable, would be considered out of his senses.

The sap vessels are open and will not close. The sap will flow out and run down the tree. The bark will become cankered, turn black and die, and cleave from the wood. A wound which can never heal will surely be the result. The sap being in brisk circulation up the tree, or waiting to be received by the leaf, and finding itself cut off in its communication, will resort to the recuperative principle common throughout nature, and will throw out innumerable suckers. In many instances these are suffered to grow, to the great injury, if not destruction of the tree. The tree is destitute of foliage and the pruner is not quick to note the limbs which should be removed on account of feebleness and decay.

Summer pruning,—advantages: The sap has now ascended the tree, has passed into the leaves, and has been by them elaborated. It is descending between the wood and bark, or in the inner bark, for the formation of fruit and the growth of alburnum, a new grain of wood. The sap is appropriated, and nature is not prepared for the recuperative process, and throws out but few, if any shoots. The elaborated sap, being in active operation, may be seen in a few hours, oozing from between the wood and bark, ready to commence the healing process. It commences quickly, and progresses rapidly. When the tree is in full verdure, the pruner may readily observe which of the limbs are diseased and require amputation. He can the more readily see what part of the top should be removed, in order to admit the fructifying influences of heat and light. The pruning is very beneficial to the remaining fruit. It causes it to hold, to grow larger and fairer, and to ripen more perfectly.

Disadvantages: Farmers are very busily engaged in other farm operations. Grass may be trod down in pruning. Thorns and shoots may be left to the detriment of haying operations. These should be carefully raked to the butt of the tree. The bark which is then tender and yielding, may be injured by the heel of the careless pruner's hook. The sun's more vertical rays may be let in upon tender limbs, in which case they become sun scalded, at those points where the sun's rays fall at right angles from noon until two o'clock; the wound may not season as readily, and become as incorruptible as at fall and winter pruning.

Winter and fall pruning,—advantages: The sap has become quiescent. It has passed up the trunk and limbs, has been elaborated by the leaves; has returned down the limbs, trunk and roots for the production of fruit, and the formation of a new growth of wood. The wood readily seasons and becomes hard, firm and incorrigible. It will seldom rot, although large defective limbs are amputated. The sap vessels consequently become closed, and the sap the next spring will not be so forced in that direction as to throw out so many shoots, as though pruned in the spring, neither can the sap flow from the wound. The operation can be performed without liability of injury to the bark.

The farmer, if ever, has leisure: Most of his other farm operations have ceased necessarily; for winter has laid his firm, broad, icy seal upon the earth. There is, therefore, time to perform this long neglected service. The limbs can be sledded to their resting place; perhaps to the wood-yard, where the young urchins, during intermission of school, can manufacture the largest of them into fine fuel, abating the talk of the women about "packing so much brush." The thorns can be raked clean; if not, yielding to the pressure of the snows, and the demolition of time, they will be found "just no where" by the next haying season.

Disadvantages: The operator cannot so quickly determine the points to be attacked, to dis-

lodge the defective limbs, and to open the top judiciously. The only serious objection to pruning now, is, the orchardist does not know, consider, and appreciate the very great advantage and necessity of pruning!

If the reader has followed this article as closely as the importance of the subject demands; and if he have confidence that the positions taken are tenable, he will now be prepared to strike a balance in favor of summer against spring pruning; and a larger balance in favor of fall and winter pruning.

Call this theory, if you please. Is it not a theory that sustains its own weight? Are not the reasons here advanced sound and logical? Do they not commend themselves to your judgment? But theories and reasons are entitled to no respect, if experience does not sustain them; if facts are opposed to them.

Our own experience and observation. during a long life-time, corroborate the views advanced in this article. And are they entitled to no respect? One experiment proves nothing, but points in a certain direction. A thousand, well conducted, are entitled to respect. If they concur, they incontestibly prove a theory a fact.

We have, from boyhood, noticed the deleterious effects of spring pruning, arising from a flow of sap, and the multifarous production of suckers. We will not pretend that, as a whole, an orchard had not better be pruned in the spring than never to be pruned. Much depends upon the age and condition of an orchard, as regards the injury of spring pruning, and the great advantage of fall or winter pruning. A young, healthy, and vigorous tree may be pruned in the spring with less detriment than an old, decaying tree. The wounds will be smaller; the sap will flow less; the wood is firmer; and the recuperation stronger, in the young than in the old tree. As the young, hale man can stand more exposure than the old and infirm man, hence he may indulge in the free use of narcotics, stand greater exposures, and commit greater excesses, with seeming impunity, than the old and infirm.

As regards the flowage of sap. the heating operation, and the multiplication of suckers, comparing April, May, and June, we have had ample experience. For the past twelve years we have had more than one man constantly sawing apple wood through these months. The advantage is decidedly and positively in favor of the latter part of this season. As regards the quantity and quality of fruit, from the pruning in April and July, we have had experience to show that the balance is in the same direction. Regarding the advantage of fall or winter pruning over spring pruning, we have not had as much experience. Fall and winter pruning has not been much practiced in this State. From what we have seen, and from the reasons presented before you, we subscribe to it. As far as we are advised, most experts in pruning take this side of the question regarding spring, summer and fall pruning. Referring to Cole, who was an expert in all matters appertaining to orcharding, in his "American Fruit Book," we are happy to find that these views are fully sustained by him. He says, referring to fall pruning: "Thirty years ago, in September, we cut a very large branch from an apple tree. The tree was old, and it has never healed over, but is now hard—almost as hard as horn, and the tree perfectly sound around it. A few years before and after, large limbs were cut from the same tree in spring; and where they were cut off, the tree has rotted, so that a quart measure may be put into the cavity." If we have ascertained a more convenient and better time for pruning, why not avail ourselves of it, and improve our old orchards?—*Maine Farmer.*

Wash your Fruit Trees.

Now is the time to kill grubs and to keep away insects from trees of all kinds. June is the most proper month for washing apple trees. The borer fly will soon be out and busy in finding a suitable place to lay her eggs. Watch her motions and you need not fear any damage from the *Borer*, which has made great havoc in many orchards.

We have annually had much to say to our friends in regard to the scourge of the apple tree, the quince, the yellow locust, and the white ash—for it is the same worm which causes destruction in all these trees.

This fly is very regular in its habits, and it is an object worthy of the strict attention of all orchardists, to watch her motions and defeat her plans.

In the last days of June and in the first days of July, this insect is busy flying from tree to tree, in the night time, to find a good place to lay her eggs. Her instincts seem to teach her that her eggs would not stand a good chance on the body of a thrifty tree with a smooth and healthy bark. She therefore looks out for some crevice or wound where she may make a safe deposit.

But generally she descends to the root of the tree where the bark is more tender and where her young worms will have an easier place to make an entry than in any other part of the tree. And when the trunk of the tree is surrounded with grass, the bark is still more tender, and a good protection is afforded to the young brood from the weather while they are working into the bark and making for themselves a shelter for the winter, and they get their living from the tree.

Now, in young orchards, where of course the soil is tilled, we advise to bury up or cut up (burying is best) all the grass and weeds, and make a temporary hill of earth around the young tree, to be levelled down again before any sprouts come out from the trunk. Hilling up and burying in this way is cheaper and

better than digging close to the trunk. And a pile of earth against the body of a tree is a great protection against the fly. She likes nothing so well as a good lot of green grass around the trunk to keep the bark shaded, and of course more tender than it is in the sun or in the open, free air.

The eggs of this fly are hatched in July, and soon the little white worms are seen making their way into the tender bark. If you look for them in October you find them one-fourth of an inch long just under the bark of the trunk.

Now the question is often asked, "How are we to be rid of the borers?" We are often told by those who have never tried the thing, that a wash of lye, or potash water, will kill apple trees. They therefore recommend other washes which will neither kill nor cure. One writer recommends weak soap suds—another, pure water, and a third, milk and water.

We have seen other articles recommended in a mixture of tar and grease. Mortar is sometimes plastered on to the bark. And a lime whitewash is often used. Clay mortar and fresh manure are sometimes plastered on with a brush.

Now we have not the least confidence in any of these recommendations. The bodies of trees must never be plastered up, for the pores must be left open in trees as well as in animals, and while the latter should be carded instead of wearing blankets, trees should be washed and kept free to the action of the atmosphere.

A wash of good lye, made as strong as one pound of potash to one gallon of water, will kill all the insects that are known to injure the apple tree. We have used this wash for more than forty years on young trees and old trees, and so far from sustaining any injury from the wash we have always found it effectual to keep the barks smooth and to destroy all kinds of *animalculæ*, that infest our apple trees.

Remember that one pound of potash makes one gallon of lye strong enough for a wash for the apple tree. Now if you let this lye stand out in a kettle till half the liquid has evaporated, the balance may be too strong—twice as strong as the liquid which we recommend. Let us not be misunderstood—one pound of good potash to one gallon of water, makes a lye just strong enough for soap-making—lye that will just bear up a hen's egg, that is all which is wanted to kill the numerous insects that infest our apple trees. The youngest trees will bear a lye of this strength as we know from many years experience.

Now we advise all our readers who are troubled with the borer in their orchards to take a swab or mop and apply this wash to the roots of their apple and quince trees about the first of July, for then is the time for the borer to commence laying her eggs at the root of the tree. Wash before she hatches her eggs and you drive her off. Wash soon after she has hatched and you destroy the eggs or the young worms.

About the roots of old trees, infested with borers, you may use lye twice as strong as this which we recommend for young trees. Also for the bodies of old trees you ought to use stronger lye than in other cases.

The lye which we recommend to wash young trees with will turn the *leaves* yellow in a few minutes. But what of It? Why, we have known people to be scared out of their wits and their potash by seeing the leaves that had been sprinkled with lye turn red.

We advise to wash the bodies of young apple trees as high as a man can reach. For moss often gathers in the crotch of the tree, where it is as injurious as on the body. Now suppose you touch a dozen leaves on each tree with the wash and they turn red or brown, it may save you some trouble in trimming, for you want no leaves near the place where the limbs branch off.

We can conquer this grub more easily than the canker worm which is now so destructive in some of our towns near the capital. This pest quits work as regularly on the tenth of June as some workmen do when ten hours have elapsed. It is a curious fact that the canker worm never trespasses after the tenth, whether the season is early or late.

In regard to borers people should not complain if they neglect to apply a remedy. Soapsuds are not strong enough to kill a louse, and a wash of lime is not the thing to apply to the bodies of trees. Lime will do well enough to kill insects in a tub or cask—but they must be caught and put into it.

Weak washes to kill grubs may amuse, but they are ineffectual and our time is thrown away in the application.—*Mass. Ploughman.*

Watering Plants.

Plants in pots require very careful attention in regard to watering. A requisite preliminary is good drainage, so as to allow the surplus moisture to escape readily, and equally important is a porous soil, not retentive of wet.—When these two things are properly attended to the water will rapidly pass through the pots, and hence arises the need of caution not to give more at a time than the soil will hold—for if at every watering a quantity of water escapes by the bottom of the pot, the plant is soon deprived of all the exciting qualities of the mould, and, unless liquid manures are applied, will soon be impoverished. If water put to the surface of a pot remains for a time on the surface, the fact shows one of two things; either that the soil is dry, and requires a good soaking, or that it is so saturated with moisture that it will hold no more, in which case the pot should be set by itself, or marked, so that water may be withheld for a time.

It is customary for a collection of plants in a frame or a greenhouse to be all watered at regular periods; but while, at first sight, such a practice seems right enough, it is really a bad one, and makes no provision for the very various conditions of the plants. In a hundred pots of miscellaneous plants there will be found great diversities of habit which should regulate watering. Plants require more watering when growing than when at rest, and more in warm than in cold weather; some demand for their healthy growth a *heavy* kind of potting, which will retain moisture much longer than ordinary porous composts. A gardener of experience, whether a lady with a few window plants, or a professionol one, to whom greenhouses, &c., are entrusted, should therefore know the habits of all the stock, and regulates watering accordingly. Indeed, a glance at a plant will generally be enough to ascertain whether watering is needed; and, so long as there are no signs of flagging, the operation may be best withheld. This advice refers to gardeners who are always on the spot, and who can at once apply the remedy should signs of drought appear. But those who have to leave their plants for some hours, or a whole day, should always make sure that the supply of moisture will suffice till their return.

As we said last week, the general crops of a garden will do well without artificial watering in ordinary seasons; but there are many exceptions to the rule, some of which we before alluded to. In a flower garden art prevails over nature so much, that each kind of plant must be consulted before water is applied.—Scarlet Geraniums will bloom best in a dry soil; while Verbenas require rather more moisture. At this season, after the plants are all bedded out, the comparative thirstiness of plants will become obvious, and they must be treated accordingly. Until fresh roots are made in the new soil, and the plants are thoroughly established, it will be well to go round the garden every day, and to apply water when needed. Use a water-pot with a long, slender spout, and apply the water to the *roots* of the plants with the *spout*, and not with the rose. In about a week this care will be unnecessary, and there will be very few occasions, in our climate, for watering afterwards. The plan of drenching the whole of a garden with garden engines or from the roses of water-pots, is more often than not, time thrown away; and in many cases an actual injury is inflicted by the process.

Water should never be applied fresh drawn from a well; but it should be allowed to acquire the temperature of the atmosphere by standing for a time—that is, when the supply of rain-water collected in butts, is not equal to the demand. The rain-water for a greenhouse should be collected in some convenient receptable, so as to be ready for use. For a general supply our plan is to place a sugar hogshead, well tarred, and with two or three iron hoops, outside the wash-house window, and it is filled by a wooden trough affixed to the spout of the pump. But a good supply of rain-water is a great blessing to gardeners, especially if they can be independent of those insatiable drawers of soft water, the washerwomen.—*London Field.*

THE SOUTHERN PLANTER.

RICHMOND, VIRGINIA.

The Virginia State Agricultural Society and the Central Society.

The report of the Committee made to a meeting of the citizens convened to form an Agricultural Society contains an error, unintentional no doubt, in its inference from the quoted extract of the report of the Executive Committee of the Virginia State Agricultural Society. We refer to the impression created that Richmond had *given* that Society fifty-four thousand dollars. A part of the assumed donation is the Fair Grounds; and the report passes over the very important fact that that was a gift upon condition, and has already reverted to the City of Richmond. So that the donation amounts to very much less than fifty-four thousand dollars. As to "the grading" and laying out the Fair Grounds, we well recollect that when that was done it was said that it only anticipated an expense that must be increased whenever the lot was converted into a Park—its original destination.

We take leave to correct also an error into which the Mayor fell in a late speech of his, when he justified the refusal of the Council to subscribe three thousand dollars to the Society after what they had already done; thereby intimating that it was a request for an additional sum of money. Now, in the first place, there was no application to the Council for one cent, but only for a poll to be opened that the citizens of Richmond might vote the desired contribution, if they chose; in the second place, the desired contribution was not for one cent addi-

tional; but only for enough money to purchase other grounds in lieu of those theretofore occupied by the Society. It had become a matter of such delay and difficulty to get money from the Council towards the payment of the expenses of the Society's exhibitions, that the Executive Committee had determined to dispense with their assistance, and rely upon the Society to sustain itself, provided it could have grounds of a proper character. But the present grounds had become unsuitable: the buildings were out of repairs, and some of them were deemed unsafe; and the horse lot was always with difficulty obtained, some of its various proprietors constantly asserting a purpose to build on their portions of it, and demanding high rents for surrendering their designs.

The proposition to the Council, then, went to surrender the present lot, and to obtain from the citizens, and not from the Council, either a new and suitable place of exhibition, or the means of purchasing one. That fact was distinctly stated to the Council, and must have been understood by some of them, because two, from opposite ends of the city, were casting about for suitable sites for the new grounds.

If the Council had acceded to that proposition, and the city had voted the money asked, the Executive Committee could have obtained the most eligible grounds that can ever be had, on such a credit as would have ensured the payment of principal and interest in a reasonable time. But the Council, as they had a right to do, elected differently, and the city means to establish a Fair in Richmond, at an annual cost of ten thousand dollars instead of three thousand.

The Report alluded to disclaims hostility to the State Society. We are glad of it; though it is immaterial, except so far as the new Society is concerned. The purpose of this new Society—called the *Central*—is declared to be to hold an annual Fair in the City of Richmond. If that succeeds, then the State Society is superseded, so far as Richmond is concerned, and need never hold another Fair here. This releases its funds for other purposes. There are several such, and particularly one, which we forbear to mention at this time, well worthy the attention of the State Society. With such in view, and the holding a Fair rendered unnecessary, we for one, and we presume, (without authority, however,) the other members of the Executive Committee will feel relieved from a good deal of responsibility and a great deal of trouble in providing an annual entertainment for the farmers; and will gladly embrace the opportunity of expenditures of a higher character. With such objects and feelings it were surely an unwise ambition and contemptible jealousy which could stimulate the Executive Committee of the State Society to wish aught than complete success to the Central Society. Our only fear is that they will not achieve it.

Precautions About Using Reapers.

Machinery MUST INEVITABLY be introduced to perform much of the labor that is required by the Farmer, and that it may be successfully employed, some cautions MUST BE INVARIABLY OBSERVED. If it is proposed, for instance, to use a Reaping and Mowing Machine, the farmer should *carefully study every feature of it*, and ascertain the object *each* is intended to accomplish. He should find out what points require constant and particular attention, but *never fail to inspect the whole machine* EVERY MORNING before taking it into the field. All the boxes should be kept oiled with the *best* oil, and the bolts should be screwed neither too TIGHTLY nor too LOOSELY. The knives should be kept sharp, and not less than two should be procured with each machine. It would be well, too, always to duplicate the crank-rod, and the bevelled pinion. At the close of harvest the machine should, without delay, be put in order, the wood work and iron-work both well covered with paint, and then put away in a dry place.

The Field Pea. Its Permanence as a Fertilizer, and a Preparatory Crop for Tobacco.

The corn-field pea has not, as a general thing, succeeded above tide-water as a preparation for the wheat crop; and instances have occurred, as in our own experience, where the wheat crop was very seriously curtailed by a pea-fallow. Other cases, also, are known in which it has failed to reproduce its own seed, though the vine has been most luxuriant.

Still it may be made to serve a valuable purpose in that region. One such at least, we think, is its application to the land the year

preceding a tobacco crop. We have not heretofore recommended this, because some said it would not show its improvement beyond the year it was seeded; and others, that it ought by all means to be fallowed in its green or succulent state, or its value would be lost.

The following experiment assures us to the contrary. Last Spring we fallowed up and put in oats all that we could of a particular field that had been the year before in corn. But a protracted rain made it impossible to sow or fallow the whole until it would have been too late. All the land fallowed was not got in: and a strip in a wet white flat, thus excluded from oats, was at the proper time—only it was too early—sowed down in peas; so that the strip of peas grew between oats on the one hand, and uncultivated land of the same quality on the other. This Spring the whole was fallowed and again sowed in oats, and now presents this appearance: The strip on which the peas grew is a very fine crop: the oat-stubble shows a very good crop; and the land that *rested* a very ordinary crop. From this experiment, which finds abundant analogy in other green manure crops, and is supported by theory, two results may be inferred: 1st. That peas need not be fallowed until the year after their growth. 2nd. That their fertilization will certainly last until that time.

These deductions are all that we need to assure us of the practicability of a pea-fallow to precede tobacco; and if it can be applied to that purpose it will be very valuable. The difficulty with most people now is to obtain sufficient putrescent manure for their tobacco; and a great deal of useless labour is encountered in hauling stalks and wheat-straw into a pen, treading them and saturating them with voidings of cattle, and hauling them out again. In many cases this quantity of coarse manure is still further increased by hauling litter from the woods. It takes in that way as much labour to manure the land as it does to cultivate an ordinary crop on the same area. In fact, where the land lies at the barn-door, and is distant from it at its farthest point only six hundred yards, it will take the teams and hands of a farm longer to haul and deposit, without spreading, ten wagon loads of manure per acre, than to plough and harrow the land with two or three-horse ploughs. This we know; for we have just tried it. When that is done the manure is not much better for tobacco than the straw would have been; and neither answers as well as a condition of vegetable matter more nearly approaching humus. Now this may be attained by sowing peas and ploughing them down at such times in the Fall, Winter, or Spring, as may be convenient. The shade of the growing peas is itself fertilizing, and the vines begin to rot as soon as warm weather commences. A very light dressing of stable or farm-pen manure, or of guano, if stable manure be not at hand, will furnish the tobacco with everything else it wants.

Peas *may* not be desirable where all the land of a farm is sufficiently charged with vegetable matter; but very few farms present this condition. On nearly all are spots of land which it is very desirable to improve, in many cases too remote from the curtilage to admit of economical manuring in the usual way. On such places, peas, on a very light cover of straw, or woods litter, sowed down by the middle of June, will, in a decent season, give a growth which a good November or December ploughing will convert into a fine tobacco tilth; and every planter knows that his land once up to that point, except in certain very peculiar soils, it is his own fault if it is not thenceforth rapidly improved. On such places the land may be ploughed and sowed in peas in less time than it would take to manure it; and the manure may be more beneficially applied to other tobacco; or as a top-dressing to grass or clover lands. It is possible that in many cases the land thus treated with peas would at once produce as good tobacco as the lots, especially if aided by guano, as by all means it should be. In other cases the planter must look to the improvement of his land as a part of the profit from the crop, frequently an incident not to be despised.

Finally, we would say to those who doubt the speedy cure of galls in this way, that we would be glad to show them, on some spots of our own, on hills from which all the soil had become abraded, the happy effect of one application of rotten straw and one sowing of peas.

The Time Test in the Race Horse.

To the Editor of the Southern Planter:

Dear Sir—In an article in your number for

this month concerning the time in which race horses have run certain distances, entitled "About Horses Running a Mile in a Minute," you observe (in a note): "The Editor begs to add that he considers the time test a *perfect fallacy—it is no criterion or test of a horse's powers or merits.*" The italics are your own.

Will you be so good as to inform at least one of your subscribers what you do consider the proper test; it is a matter of so much importance that all, it is presumed, would like to have as much information as can be obtained to guide them in breeding. A. SUBSCRIBER.

May, 1858.

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The article to which our esteemed correspondent alludes was from the "Spirit of the Times," and the italics belong to that Editor, not to us.

If one as unskilled as ourselves, however, in matters appertaining to the race-course, may venture an opinion, we should dare to agree that "the time test" was a fallacy in racing. More speed may simplify betting; but it may not improve the breed of horses for other than running races, which we think the smallest of the numerous merits of the thorough-bred horse. The horse that can carry the heaviest weight, through the longest heats, in the best time, it would seem ought to be thought the best animal. The stamina thus evidenced might be transmitted from sire or dam, and we should have an animal suited to work of some kind if it should not prove a courser. This is not often the case with the "weedy" things of the present day. Sir Archie was not, we believe, very greatly distinguished as a racer, but he is esteemed to have been the greatest stallion ever bred in America. Tom Tough is barely remembered as a thorough-bred horse, but he won a race at Norfolk, early in the present century, in which he ran twenty-four miles, or six heats. We should like to see the horse that could do it now in respectable time. The time made by Lexington at New Orleans (7.19¼ we believe), was better than Boston ever made or probably could have made. But the track he ran on, which is several seconds the quickest in the United States, was made quicker still by being fixed up. It was no test of his general merits; and we question, if he had not gone blind, whether he would ever have made such seasons as Boston, who had speed, bottom and substance combined as no other horse in he U nion ever had, and who, but for his chuckle head, heavy shoulders, bad temper and great plainness, would have been the best stallion in the world.

We regard the Arab as the model of the horse for all but the heavy work of commerce or the farm; and his speed is not equal to that of the race horse, though his bottom is a great deal better. In the desert his type is as fixed as Ishmael's. If we could produce the same type of horse fifteen and a half hands high, we should think perfection in that department of things had been reached. But can we get it by sticking to the leggy, slouching, ewe-necked slabs that the present demand for speed on the turf, especially the English turf, has produced among us? If any one thinks so let him see the noble bay Arab mare that visited Richmond from Baltimore a week or so ago, and then find the race mare that in style, action, finish, and substance, that can compare with her.

Phosphatic Manures for Wheat and for Clover.

We do not propose to go very deeply into the philosophy of Phosphatic Manures. It prescribes their application to certain plants in preference to others, on the ground that chemical analysis ascertains a comparative excess of phosphoric acid in those plants, especially wheat, to which, therefore, it must be offered as nutriment. But facts render it certain, 1st. That this direct application is not always beneficial to wheat; and 2nd. That it is sometimes beneficial to other crops where, on analysis, we should expect to see no effect.

Before the valuable experiments of Lawes & Gilbert were made public, every one knew that bones were the best specific application to the turnip crop. But it was not equally well known that they contained but very little phosphoric acid. According to those experiments the precise reverse of what analysis had indicated took place: wheat, with an excess of phosphoric acid on *their* land, was not benefitted by phosphate of lime; turnips, with a deficiency of phosphoric acid, were benefited. The more, in other words, each plant required by nature, the less it would take from direc artificial applications. Could it be because nature has adopted the phosphatic affinity of each plant to its phosphatic wants, and given to wheat a capacity to appropriate phosphates

independently of art, and to turnips a weaker power of appropriation?

We had heard of other cases in which special applications of phosphates to wheat had failed; and, an opportunity offering, we determined to go to Baltimore, the centre of the phosphatic guano trade, as a point where the most information could be obtained on this subject; where, if anywhere, some definite views might be gathered on the subject. We did so; and were induced to go thence to Talbot county, on the Eastern shore of Maryland, —a district in which the manipulated or mixed phosphatic and ammoniacal guanoes had been extensively used. We there heard of only one case in which the Columbian—a very high phosphate with no ammonia—had been used by itself. In that case on land contiguous, and of the same composition, the application had been made broadcast and by drill. The broadcast application produced no perceptible effect; but the drilled made a very marked improvement; so great that no measurement was made to ascertain the fact, as none was needed. The manipulated guano used was generally Reese's; and in all cases that we heard of or saw, the opinion seemed to be, that the application was equal pound for pound to the genuine Peruvian. And such was our own conclusion, from what the wheat appeared to be at that time. But the lands of that district, lying on the Eastern shore of the Chesapeake bay, about fifty miles below Baltimore, are very peculiar, and find no analogue in Virginia.

Returning to Baltimore, we were introduced to a gentleman who had used Kettlewell's Manipulated guano extensively for some year or two, on several farms; as had a good many of his neighbours; and they had found it to equal Peruvian guano. But we could not visit the lands of this gentleman, and cannot, therefore, class them with any that we know in Virginia.

One thing should be stated in regard to the application of the manipulated guano in Talbot county. The gentleman there who had given most attention to the subject thought he could afford to pay the manipulator his price, which gives a very large profit on the operation, on account of the superior order of the guano, and the ease with which the drill tubes delivered it into the furrow. This remark, made by one whose educated knowledge of mechanical principles and thorough mastery of the details of agricultural machinery entitles his opinions to unqualified acceptance, may include more than he meant to convey. At least it suggests if one hundred pounds of guano properly distributed by drill be not equal to double the quantity broadcast; be not, in fact, enough for the requirements of the plant; so that more, even if drilled in, would be surplusage; as on this supposition would be the whole of the phosphate. We happen to know at this moment a crop of wheat on good, but until lately, mismanaged land, which promises twenty bushels per acre from an application of one hundred pounds of guano broadcast. This is about sixteen pounds of ammonia. Now Reese's guano is warranted, and we believe honestly, to contain eight pounds of ammonia to the hundred weight, every pound of which is rendered available by perfect trituration. Applied by drill at the rate of one hundred to one hundred and fifty pounds per acre, it would certainly be worth the amount of the broadcast application we allude to. Subsequent to the application in question, phosphatic guano was applied; but it has not exhibited any improvement. Had it been used over the whole crop cotemporaneously with the Peruvian, might not the latter have been robbed of a portion of its credit?

This view would appear to receive confirmation from one result of the very valuable series of experiments on corn made by Mr. Harris of the Genesee Farmer, and reported at length in the last number of this paper. It may be remembered that in those experiments, it appeared that one hundred pounds of gypsum produced just the same effect as three hundred pounds of superphosphate; and that a mixture of one hundred and fifty pounds of sulphate of ammonia, which is a large excess of ammonia over Peruvian guano, and three hundred pounds of phosphate gave a little less than the same quantity of the sulphate of ammonia when applied alone.

That a very small quantity of ammonia is sufficient for healthy vegetation, is proved by the experiments of Boussingault, reported in the April No. of the Planter, whereby he developed an isolated plant grown in perfectly barren soil to full growth and fructification by a compound of phosphate of lime, ashes, and nitrate of potash, in which the phosphate

amounted to 155 grains in 200, and the ammonia to only 3½ or 1¾ per cent., being from about 14 to 30 per cent. less than we are in the habit of giving our wheat in guano. The experiments of M. Ville, quoted by Prof. W. B. Rogers in a very interesting article,—see p. 472 of the Planter for 1857,—demonstrated "that one ten thousandth part of ammonia increases in a remarkable degree the activity of vegetation;" and that wheat in particular appropriated nitrogen so vigorously as to abstract what it would from the air when the soil supply was exhausted.

This supposition and the above facts are entitled to very considerable reflection on the part of our readers, for they involve the question of the necessity of phosphatic manures to *wheat* and *corn;* and the enquiry whether *any* ingredient is wanted with guano sowed broadcast, and any other with guano drilled, than a mere absorbent of that moisture which clogs the machinery that delivers it. If so, then it is clear that a great deal of money has been waisted in phosphatic applications where a greatly cheaper divisor would have answered. As soluble nitrogen, which is abstracted by the vegetable from direct applications which hold it in combination and from the air, has been proved to be not only indispensable to its growth, but always a promoter of it, we may concede its advantage ascertained.

But is it equally clear that we should add phosphates?

That many soils possess an abundance of phosphates for a good crop of wheat, and only need a solvent or a stimulant to develope it, or those other soil ingredients which will develope it, is very evident. That was proved in Lawes & Gilbert's experiments; in those made by Mr. Harris above referred to; in a case of our own, where we made, side by side, as good wheat with nitrate of potash as with Peruvian guano; and, not to exhaust the list by any means, in those hundreds of cases where lime alone, with its solvent influence, has increased the crop without the addition of manure. But it should not be thence inferred that no lands require phosphate; they may not be in so available a form as the ingredient added, even when it exists abundantly in the soil. We know land which abounds in lime, on which even so small a quantity as twenty-five bushels per acre has acted like magic in producing a healthy growth of clover, (and that ensures, against all but the casualties of season, a good crop of wheat.) We saw in Talbot county, lands in which a deposit of oyster shells, a foot thick or more, had been incorporated and rotting for centuries, that had exhibited from a small application of hydrate of lime to their rich, calcareous and "progressed" (!) mass an effect scarcely less striking than was visible on the poorer lands of the vicinage. But whether lands will need phosphates or not cannot be inferred either from analysis of soil or plant, or from their previous agricultural history. We observe in a report of a foolish speech of a Mr. Morrill of Connecticut, member of Congress, in which he advocates the giving Public Lands to the States to found Agricultural Colleges, which, as *specialties*, are an exploded humbug in Europe, that he quotes approvingly Liebig's assertion that in one hundred years there has been removed from the soil of Virginia twelve hundred pounds per acre of alkalies in tobacco, and in the leaves, grain and straw of wheat; and that many of our districts are no longer cultivated. These, like Leibig's other assertion that tobacco is an injury to land, happen to be destitute of foundation. Virginia ranks third of the wheat growers of the Union, and first in proportion to arable, not arated, surface; and tobacco keeps up the fertility of the land that makes it, the revenue of the planter who grows it, and the value of the slave who tills it.

But suppose analysis proved this—which it never can, for the lands have not been tilled to the assumed extent; let us see for a moment, somethimg about the exhaustion of mineral manures. According to Johnson, Part II, p. 318, a crop of wheat of twenty-five bushels with its resulting straw would remove only 16.08 lbs. of potash, lime and soda, of which about 3.75 is potash, or one part of this alkali in 800,000, assuming the weight of an acre of soil a foot deep at 2,920,000 lbs. But as these ingredients of a soil are vastly more abundant in wheat than is phosphoric acid, we may see how little reason there is to apprehend a failure of the phosphates.

If the absolute requirements of a plant can, in the present state of science, be inferred from analysis, the cases in which it has been done can be easily produced, and we should be very glad to see them cited and authenticated.

But if it were practicable it would not prove the necessity of phosphate of lime as an independent application. According to Johnson, as quoted above, twenty-five bushels of wheat and the straw will take from the land 5.70 lbs. of phosphoric acid, equal to about 12 lbs. of phosphate of lime, which at the assumed weight of soil amounts to about one part of phosphoric acid in 300,000,—or enough for three thousand centuries! Is it not probable, therefore, that there is enough phosphoric acid in the soil to last until judgment day? If not, Peruvian guano may supply our need for the present; for one hundred pounds of it contain about 24 lbs. of phosphate of lime, or twice as much as Johnson's analysis assumes as existing in the whole plant, where straw, be it remembered, with 5.10 per cent. of phosphoric acid in its ash, is, here in Virginia, always returned to the land.

But it is thought by some that the existing phosphate is found for the most part, in such insoluble combinations as phosphates of iron and alumina, and that the addition of it in a more soluble form is necessary. But, to use the words of an eminent chemist, there is no such term as insoluble in chemistry; and if there were, it would be found among the terms of the laboratory, but not in nature. If, of two substances reputed insoluble, we can say that one is more so than another, we may say that sulphate of Baryta is more insoluble than any known form of phosphate. But the well observed and well attested experiments of the late Dr. R. R. Barton, of Rockbridge, reported in the Southern Planter several years ago, prove that, as a specific application to clover, the effects of this so-called insoluble compound are quite as remarkable on clover as gypsum ever is on the same land. We need not, then, disregard the phosphate already presumed to be in the land because of its particular form of combination, though we should prefer if adding phosphates to the soil to select the most soluble.

Theory, then, would seem to indicate that the application of an excess of phosphoric is, as a general rule, to wheat, unnecessary, a solvent for that already in the soil being all that can be required. But theory is not to be relied on, unless we could know much more than we now do of the secrets of vegetable chemistry and physiology. As we have seen lime improve a calcareous soil, so may phosphates improve a phosphatic soil. But as there is much more expense attending the experiment, there should be much more care and much less area directed to it.

So far, then, it appears that the efficiency of the phosphates as a direct application to wheat is doubtful, though there may be special cases in which its action would be beneficial; and this is the result of very extended trial in Great Britain. "As a manure for grain crops," says an able writer in Morton's Cyclopedia of Agriculture, "bones"—phosphates—"hold no plan in general or even local practice. For this reason it is not to be assumed that they are not capable of conferring any advantage upon such crops. The most rational conclusion to be arrived at in explanation of the fact is, that they are not equal in effect to the other standard imported and home-made manures. It is now an admitted doctrine, fully established by the whole bearing of the experiments of the writer and of Mr. Gardiner, and most completely confirmed by numerous experiments recorded in the Journal of the Royal Agricultural Society, and by the recent minute and elaborate investigations of Mr. Lawes, that organic and agotized—"ammoniacal manures are most visible in their effects upon the bulk and luxuriance of grain crops; and that mineral food, especially phosphate of lime, is equally important as an element of the turnip. Now, bones act principally, as we have fully explained, by their phosphate of lime, and many of the bones used are entirely or nearly devoid of the organic matter,"—our American phosphates are entirely devoid of it—"capable of supplying the grain crop with nitrogen by the formation of ammonia during decomposition. The quantity of ammonia supplied in an ordinary application being, under favourable circumstances, less than is furnished by an application of rape dust, guano or farm manure, the failure of bones to act as well as any of these, and to become a standard application for grain crops is apparent."

In Great Britain the most remarkable effect of the phosphates is seen in the turnip crop, which is there largely cultivated to feed stock and so make manure. It is to the following grain crop as a preparation of the land very much what tobacco is in our rotations in Vir-

inia, where, as is well known here, the "or-er" of the land in developing the plant od is many times equal to the application of good dressing of manure. Whether it re-uces the phosphates to a form assimilable by ie succeeding crop of grain is a fact of o practical value here where the turnip is ot, and probably never will be, extensively rown.

But the same authority says that bones ex-t a very remarkable effect on the growth of over and the grasses, especially on white clo-er, which it endows with extraordinary luxu-ance. If the various forms of our phosphates hall be found to exert the same effect in our limate, they will prove of scarcely less value o us than they have been proved to be in Eng-nd, where, in extending the culture of tur-ips, they have certainly inaugurated a new ra in her agriculture. We hope experiments ill be made with special reference to this oint next fall.

As to the kind of phosphates to be selected e have only a few words to say. We have eard that the brown Mexican guano, as it is alled, is the best form in which it can be ap-lied; as, though it is the lowest in price and he poorest in per centage of phosphate, what s has is most soluble, and therefore most im-nediately available. Of other kinds some ontain more and some less of phosphate of ron and phosphate of alumina. As those are he most insoluble forms of phosphates, a sam-le containing them is inferior to one which resents an equal amount of phosphoric acid n combination with lime and magnesia. But ome parties are in the habit of classing the hole phosphatic compounds as phosphates of ime. This is not right. It is true that chem-sts differ in opinion as to the relative value of hese ingredients; but the dealers are not ntitled to settle that difference of opinion as ome of them now do by classing every thing s phosphate of lime: the purchaser is enti-led to know it and to decide for himself. As o the genuineness of any article of the kind, et the farmer remember that the inspection oth here and in Baltimore is an unmitigated umbug, and should not be relied on for one noment. Let him remember also that the nalysis of many a so called chemist is utterly worthless. When a merchant proposes to sell on the analysis of Dr. So-and-So of New York, we always think of the question of the horse racer, when squire Brown was brought up to "hold the stakes." "Who'll hold squire Brown," said the wary gambler. There are some consulting chemists of high character, and some of no character at all. It is not our business to make enemies by pointing out thus publicly and exclusively the reliable men. The farmer must look out for that himself, and his best course will be to rely on the merchant at home, and hold that merchant responsible for a correct statement of every form of phosphoric acid that exist in the manure. The merchant can, and if honest will, find out the best chemist. If he is too negligent or indifferent to do it, he is not fit to sell phosphatic guano.

As to the use of phosphates on tobacco, we have not said a word, because we know nothing of it practically, and have no means of arriving at, even a theoretical opinion. What has been published on that subject in the Planter has, no doubt, been seen by all of our readers who feel an interest in the subject.

South Down Sheep.

We have annually, for a year or two past, advertised part breed South Down Buck Lambs for sale. We have them still; and if they are wanted, can furnish them at the next weaning season at $15 for the half breed, and $20 for the three quarter breed, the remaining cross being of Cotswold and Bakewell.

We have uniformly advised breeders who might fancy this breed, to get the pure breed Bucks, at from $40 to $60, either from R. H. Dulaney, Esq., of Upperville, Fauquier Co., who has the best, or from Raleigh Colston, Esq., of Ivy Depot Albemarle, who has the next best, both of whom are gentlemen every way reliable, and are of our own people. But we have also said that a half of a loaf was a good deal better than no bread in this matter, and if persons did not choose to purchase the pure bred, they had better get ours than breed from commom rams.

It is said of this breed in the standard English work on The Sheep: "The South Down is adapted to almost any situation in the Midland part of England; it has a patience of occasional short keep, and an endurance of hard stocking equal to any other sheep; an early

maturity, scarcely inferior to that of the Leicester's, (Bakewell's,) and the flesh finely grained, and of peculiarly good flavor;" "and the wool of the most useful quality."—THE SHEEP, pp. 111, 233.

They also make particularly fine lambs for an early market.

For the Planter.

Reply to "X" of the Republican.

MR. EDITOR.—In the May number of the Planter, over the signature "X of the Republican," appeared some remarks upon a piece in the March number over the signature "B," which he regards as demanding some slight notice.

May not the heresy of the hackneyed saying, "it matters not what the faith is, if the practice be right," be regarded as having been long since exploded, by the light which has beamed from the pathway of science in its progressive march from heathenish ignorance and superstition to the present luminous day? and is not the maxim now established, that sound, intelligent notions and views of things are necessary in order to sound conservative practice? And that intelligent men are responsible, as well for the correctness of their faith, their views, their notions of things, as for their conduct and management? and this upon the principle, that the translucent stream flows, not from the turbid, but the limpid fountain; and that good fruit is gathered not from the *corrupt* but the *good* tree? As well may we expect to slake thirst with cool, limpid water, flowing from a hot and turbid fountain—or pluck the delicious peach or orange from the bitter, rough and sour crab tree; as soon expect that a man believing Baal to be God and worshipping him as such, shall, by a life of holy obedience, reach the abodes of unending bliss, as expect clear, intelligent, practical ideas to flow from muddy brains, or sound, successful practice to spring from ignorance and error, or blind, baseless hypotheses.

As a matter of science it can scarcely be considered as unimportant whether the sun is regarded as revolving around the earth or the earth around the sun: and a man of science, who "writing to a western paper" should describe the sun as revolving around the earth, would hardly be excused of his ignorance or want of scientific propriety of language upon the plea, that he "was writing to a western paper and used the expression which he supposed would "convey an idea to Western" Astronomers. Says "X," "I was writing to a Western paper and used the expression, which I supposed would convey an idea to Western Farmers." Now, sir, there is about as much likeness between the sun revolving around the earth and the earth revolving around the sun, as there is between stimulating the soil and stimulating the plant. The difference is all the distance there is between truth and error, facts and falsehood. It is immeasurable. "X" claims that "B" admits the idea he intended to convey was correct," &c. What idea? That guano stimulates the soil and impoverishes it, and that strong drink stimulates and impoverishes the human system. Where does he find this admission? "B" admits that there is "a *remote* likeness in the "modus operandi" of the two agents, so far as guano stimulates the organism of the plant, but does not admit, either that guano "stimulates and impoverishes the soil," or that strong drink impoverishes the human system. He admits that strong drink affords but *little nutriment* to the human system, but he considers the difference between affording *little nutriment* and abstracting to *impoverishment*, a very wide. "X" asserts that guano by the excess of ammonia stimulates the soil, and at the same time impoverishes it." Can language be plainer? Let it be that he means stimulates the *plant*, still it is the soil that is impoverished. "B" denies that he has conceded any such idea, which he then knew and is now but more confirmed, was conceived in error. Moreover, he denies having intended to conceed that guano affords but *little* nutriment to the plant, or that there was any special likeness in the action of guano upon vegetables, to the action of strong drink upon the human system differing from that which the action of strong drinks bears to the action of all other fertilizers or manures—nothing can nourish that does not to some extent stimulate.

"B" knows and can establish by testimony unquestioned and unquestionable, that not only guano does not impoverish the soil, but upon utterly exhausted soils, originally good, will applied in proper quantity, give a good return in crop and maintain the soil highly improved giving a succeeding crop of wheat and sustaining a good crop of clover. Further, "B" asserts that exhausted lands (originally good) may, by guano alone, be restored to original fertility and so maintained by proper rotation of crop rest, clover or other suitable grasses. But upon lands originally poor, much permanent improvement need not be expected; from such good crops may be reaped by renewed application, but lasting improvement may not be expected, as all lands originally poor need the elements or principles necessary to attract appropriate and retain fertilizing agents—upon such lands, the agriculturist must rely upon each crop for present pay.

"X" consoles himself that his views are endorsed by Dr. Higgins, who says, "Phosphatic guano should be applied to crops which have a leafy and broad development," &c. This notion of Dr. Higgins may or may not be sustained by facts,—none are adduced, and it may be, and it probably is, a mere hypothesis. But suppose it confirmed by established facts, what then? Does this prove that Peruvian Guano

ıulates and impoverishes the soil, while ›des' superphosphate of lime furnishes nu- ous materials and enriches the soil? Here- onsists the very gist of the question in dis- e. If guano stimulates and impoverishes soil, and Rhodes' superphosphate furnishes ritious materials and enriches, then "X" ight and "B" wrong. But on the other d, if guano applied to the soil will greatly ease the crop and leave the land greatly roved in fertility, then "B" is right and " wrong.

Whether the criticism in the March number rred to by "X" be regarded as "far-fetch- or pertinent, is a matter of minor conside- on, and while "B" has no special gratifica- to serve by intruding upon "the self- placency which 'X' is pleased to draw n the assumed admission of the correctness he idea "he intended to convey," yet re- ding the correction of error as always im- tant—seeing that the slighest divergence n the right line necessarily widens as it ances, and can never meet—he asks to be used for the zeal he has evinced.

n conclusion, "B" would warn his agricul- al brethren to receive, with many grains of wance, the published account of the won- ful properties of the many substitutes for, auxiliaries to, Peruvian guano. Doubtless st of them may be valuable, rightly under- od and used. But he that relies upon what promised, will assuredly be disappointed. n with wonderful facility persuade them- es to believe what they *desire*, and what it their *interest* to believe. Thus, without rging fraudulent design, we may realize importance of being guarded against impo- on.

"B."

For the Southern Planter.

Seed.

SIR:—In the Planter for April, I ventured a remarks, which might be taken as a mere line in considering the vitality of seed; for ile we bear in mind the fact, that seed is link in the chain of vegetable existence, it st needs be of paramount importance to in- tigate the peculiar properties in this link ich connects the old and new plant. The d, true to its mission, perpetuates and be- ws its perennial verdure to the world's land- pe as well as affording all the necessaries of to man and beast, not even excepting the iest insect that crawls upon the ground. It vell known that every plant, herb or flower t grows, have their uses and applications in arts, while their fragrance and diversity colors are especially intended in the econo- of nature to minister to the sensual desires l gratifications of the human family, and how little ungrateful man appreciates those ssings, and how limited too our knowledge n not being able to comprehend the vital vers of a little seed. Let the intellectual Tyroes of the day bow with submission before it, and no longer hold up their superior genius on the may-pole for public gaze, while the but- terfly that flutters before him, knows more of the nature and properties of this little seed. Look at it—view it with all the pride of your intellect—bring to your aid the history of ages, and the light of science, and then in a spirit of humility, tell me what is seed.

You will not—you cannot—the book says it is the bulb, and if I ask the book what is the bulb, can it tell—or if any thing I say on the subject conveys the idea that I am giving my opinion on it, I beg to revoke such sayings, as my object is to elicit information, and if possible, induce some intelligent writer to take the matter in hand, for it is a theme pregnant with much interest; and the gentle warmth and copious showers of the present spring, were sufficiently favourable to induce the germination of the most tenacious seeds, yet I have to record the fact that seeds of dif- ferent kinds fail with me. Thus, let the men- tion of one sort suffice for the present. About the 25th of March I prepared a square of ground in the warmest aspect in my garden. In this square I planted at the usual distance, and in the usual way, eight different kinds of the earliest corn known. Six sorts grew after a sickly, tedious fashion, the other two that did not grow, were of the sugar species. In scra- ping for missing sorts, I found the radicles made a descent of some two and a half inches, while the plume or ascending part of the germ, made no effort to rise. And my aston- isment is, that the plumula did not start from the embryo simultaneously with the radicle but

Maze within maze the lucid webs are roll'd,
And as they burst the living flame unfold.

Truly there seems to be some secret connect- ed with the grain of corn seed that I can neither explain nor comprehend. It may be that the thin coating or bark on this seed did not admit of so much carbon as is necessary for the preservation of its vitality, or per- haps the abortion happened from the ab- sence of albumen, which is said to be very abundant in corn and other grasses—but the incidental blights are so numerous that it is use- less to try to trace them to their course, for while we bear in mind the minuteness of the embryo, we must acknowledge our inability to comprehend or judge the phenomena by any test or cannon of law or criticism. This embryo so small as a dot, and in some in- stances cannot be seen by the naked eye; and yet this invisible dot—less than a dot— when stimulated to action by the decomposition of the carbon, begin to develop its various parts—the little vessels and organs external and internal that were encased in the embryo begin to move, there cannot be any exaggeration in the lines which says—

That grain within grain successive harvest dwell
And boundless forests slumber in a shell.

I must repeat my inability to comprehend how a thing so small as the embryo can contain the roots, stem and branches of the most majestic oaks of our forest with their countless organs and ramifications—the operations of nature are mysterious to me. R. C.

May 13th, 1858.

For the Southern Planter.

How to Kill Dogwood Trees—Query.

New Kent, May 2nd, 1858.

Mr. Editor—I have quite an extensive new ground to get in order for tobacco, (next year's crop,) most of the timber has been gotten off for rails and wood. The dogwood has been purposely left standing for the convenience of grubbing, in which I anticipate a heavy job. Can you or any of your readers inform me from actual experience whether cutting the dogwood in July or August will kill it, root and branch? I have tried that plan with sassafras, and find it succeeds well. Any information on this point will be thankfully received by

Yours, Truly,

G. G. M.

For the Planter.

Still Chopping the Roots.

After the heinous portraiture my friend "Tyro" has drawn of the few plain remarks I unwittingly made in the April number of the Planter, and the terrible castigation I have received at his hands, I feel ashamed ever again to use my head, or say a word about his fabled apple tree or its appendages, not even excepting the learned and original conceptions respecting the peculiar functions of the spangioles or medullary veins; but had he known the humble position I occupy, he would not, I fancy, have honored me with his slimy criticism. The writer is an humble laboring man, not possessing a particle of education, and I know as little about the art or style of composition as I do about the man in the moon. So you perceive your galbanum acerbity have not added a single blossom to the plume of your proud intellect, nor in the slightest could such inoderous breathings tarnish my literary repute. I found you chopping off the roots of my apple trees, and for so doing I told you, you were wrong, and I was willing to give you my reasons for saying so, when you pounced upon me and held me up to public scorn because, forsooth, I could not tell it by the rule of grammar, or the etiquette of the day. With such usages I am entirely unacquainted, and I am further willing to give you the benefit of my avowal that a word of my scribbling ne appeared in print before that article that sta you from your lair. Surely you are a verit "Tyro," as is clearly exemplified by the v flashes which have gone forth from the i vitality that reigns within you. Your duty head monitor, was to bear, not only with ge forbearance, the uncouth propensities of a low-laborer, but to accept with gratitude grain of good, even in its rudest elements, prune, or reject, with becoming gravity, casual or deleterious matter. No, sir— seem to have forgotten your vocation, as went far out of your way for weapons of fence. Witness this man who dwells so patl cally on the beauties of Nature, linking golden sentences with the soft tissue and drils of the rose and honeysuckle—witness h I say, as he draws his inspirations from all is lovely and odoriferous in the floral kingdo with bland smiles, bowing and dancing on green-sward of the world's velvet landscap and while in this reverie a pebble is throwi his flowery pathway, which did not so muc blister his toe; but lo! and behold him r ing with animal ferocity into the bowels of earth for fire and steel, and deeper—to regions of hell—for he brings up his sat majesty. Wanting a third, he looks aro the animal kingdom; nor has he failed, brings out a pig. Now, there stands the p and learned pomologist, in company with own selection—fire and steel, the devil and pig—there he stands; and if I were as s ful as he I could give him a dash; but charity tells me to forbear; for though pas precipitated him into evil company, h stamped with the image of God and I shall bear. But before I dismiss you, allow m remind you of your error in choosing such company, or using these imps as a sort of b guard. The vegetable kingdom, which s to be your espoused habitation, would a you material enough for weapons of defe or objects of comparison, and leave you bes a reputation for taste and elegance, wh ought to be the peculiar characteristic of who tries to paint the tiny flowers of ea Nor have I yet done with you till I sever connection between "Tyro," the devil and pig. Let satan go to the burning lake and pig to her brute companions; and drop your fossil implement, I present you wi vase filled with the flowers of the valley, f whose sweet nectar you can distil some po while I am giving you a pruning and top-d ing; for the tree looks bad, and, in truth, on amining it, I find a corroding gangrene vading stock and branch, even the parench is afflicted, which leaves nothing for pomol cal inspection. If Virgil or Columella fou degenerate tree of this kind in the hortic ral department in their time, they most suredly would have either eradicated it transplanted it in the back-grounds as a wo

deciduous under shrub; but we will not so t our plant—the compound and elementary ns may wear the mantle of decay, while embryo conceals its vital power, and in its good time will spring into life, exhibiting he grandeur peculiar to its species, as well earing the fruit of its kind. Now, though n not half done with this languid tree, I t let it go, for fear it is too long on exhi- on; but the tap-root must come off, so must branches, for they seem filled with fluid ter; it looks very unsightly just now, with nch and root amputated, still its organs are nd, though out of place, and its vitality is uestionable. So we plant it in some sunny , and shall use due vigilance in minister- to its wants, in hope that at some future it will bring forth good fruit.

stated that any one may observe examples both in a given spot—see page 200 in nter for April—not "green," as was errone- ly printed. Surely, the vivid flashes must e departed from you, when you cannot com- hend a negation. R. C.

May 12th, 1858.

For the Planter.

Cultivation of the Corn Crop.

Henrico Co., May, 1858.

Mr. Editor.—It may not be out of place to e, at this time, what I consider to be the t method of cultivating corn upon light d,—and I give this plan because I think it l be found to be less labour than that usu- y adopted. In the first place, the land uld not be ploughed *too deep*. This may m a sentiment of the retrograde order at s period of deep ploughing, but still it is e as preaching with regard to the light ds of this portion of the State. If it is de- ed to break such soil deeper than five or six hes, it must be done with the subsoil plough the cross, if not, the land itself will suffer consequence of the poor subsoil turned up the surface. Land for corn should be bro- n up as near to the time of planting as prac- able, so that the earth may be fresh and llow for the young plants.

These remarks are too late for this season, t as our friends cannot profit by the first rt, perhaps they may in some measure by e latter.

The land now is to be well harrowed and awn off four and a half feet with a single ough, (deep enough to prevent the grain m being moved by the harrow,) the corn opped two and a half feet apart, and three four grains in a place; it should then be vered with a cultivator, the front tooth of nich has been removed, followed by a double rrow.

This planting leaves the land in nice order, d checks the grass till the corn is large enough to cultivate. As soon as the plants have three or four leaves, is to run a narrow-tooth cultivator twice in each row. After the cultivators have gone through once, let them go immediately over again, the hoes following and thinning out the corn to one stalk. If the cultivators have been worked properly —that is, deep and close to the corn as possible—there will be little for the hoes to do but thin. I believe that hands can hoe nearly twice as much corn in this way as they can after "siding" with a plough. If this is completed before harvest, I would say run once in the rows again with the cultivators, as I think it is an error to plough corn before harvest; and if it is done the grass will generally be found to have taken possession of the rows again, and will require hoe-work, or that the rows should be thrown up high enough to plant sweet potatoes on. After harvest let the ploughs go through the corn, two furrows to the row, as shallow as possible so as to cover the grass, then break the middles with the cultivators, or, if the grass is too strong, with the plough, very shallow.

Corn roots should not be exposed to the sun and broken by deep ploughing.

Now take care, if you pull the fodder at all, not to do so too soon, and you will gather the best crop that the land and the season (and the chinch bug) will produce, with as little labour as the corn crop will admit of.

Yours, Y.

Seasons for Crops.

The successions of good and bad harvests present phenomena which have at times attracted the attention of scientific men, and from the time of the seven years of famine and seven years of plenty indicated by Joseph in his administration of Egypt, intelligent farmers have recognized the fact that a course of deficient crops is pretty sure to follow a course of abundant ones, but in how far the succession is regular of determinate length, appears not to have been definitely fixed. In 1853, M. Becquerel read to the Academy of Sciences a paper on the wheat culture of France, which has much interest in this relation. The internal system of tariffs in France—the want of agricultural enterprise and means of prompt communication, cause the prices to depend there upon the local crops almost altogether. Indeed the tariff seems devised to enhance famine and increase abundance, since if one section of France has a short crop, it can import only at a high duty grain from sections where the crops are superabundant. The result is, however, that the aggregate prices vary with the production. In our number for Jan. 14, 1854, we gave from the paper of M. Becquerel the following table quoted from Count Hugo, showing the movement in France for every five years:

SEASONS AND PRICES IN FRANCE.

	Excess of Imports. Hectolitres.	Exports	Per hecto. f. c.	f. c.	Shillin Per Q s.
Scarcity.....1816@1821	6,247,000	..	23.67		54
Plenty.....1822@1827	..	1,258,000	..	15.80	36
Scarcity.....1828@1832	9,528,000	..	22.00	..	50
Plenty.....1833@1837	..	944,000	..	16.16	37
Mixed.....1838@1842	1,126,000	..	20.31	..	46
Scarcity.....1843@1847	18,697,000	..	25.68	..	59
Plenty.....1848@1852	..	13,188,000	..	16.68	38

This is a very remarkable table, and we remarked then upon it, vol. ., page 220:

"The five years, 1847 to 1852, were years of abundance both in France and Great Britain. Supposing, then, the change takes place quinquennially, we should now be at the commencement of a period of scarcity, and that the present year fulfils this character, is ma fest from the state of the markets on both si of the British channel."

Let us now add the line embraced in the f years since elapsed, 1853 to 1857, from offic sources as follows:

	Hestolitres.	Per hecto	Per
Scarcity.....1853@1857	22,099,792	28.01	64

These figures, for the last five years, show that scarcity has been greater than ever in France, and that the cycle fulfilled its limit. We may observe the leading events which have marked the close of each of these cycles in France. The first period of scarcity, ending in 1821, was complicated with the settlement of France after the fall of the empire, and was marked by the Spanish war. The cycle of low prices, plenty having imparted courage to government, ended with the battle of Navarino, in 1827. The dear cycle that succeeded ended in the revolution and crisis. When the restoration fell, and Louis Phillip succeeded, a season of plenty followed, ending in the United States revulsion of 1837. There was no marked failure up to 1842, but food rose, produci uneasiness. When the financial cycle follow ending with the revolution of 1848, plenty s ceeded, and the cycle closed with the establi ment of the "Empire." An adverse cycle now passed, ending with a "crisis." We now again at the commencement of a sea of plenty without political changes in Euro The question here is for American intere The want of food abroad has always caused active demand for American products. If take a table of the value of breadstuffs a provisions exported from the United States, cording to the above cycles, the results are follows:

Cycle—	Prices in France. s. d.	End of cycle.	Exports fr from U. Sta
1822@1827	36 4	.....Plenty—Navarino.....	$63,450,4
1828@1832	50 7	.....Scarcity—Revolution	66,631,3
1833@1837	37 2	.....Plenty—Crisis	57,945,0
1838@1842	46 8	.....Mixed—Crisis	76,950,9
1843@1847	59 0	.....Scarcity—Revolution	143,320,7
1848@1852	38 4	.....Plenty—Empire	149,486,0
1853@1857	60 1	.....Scarcity—Crisis.....	290,078,9

The crisis of 1842 produced the quintuple treaty, and the fall of M. Thiers. In the last cycle the exports from the United States would have been much larger but for the short crop of 1854, which sent prices to an exorbitant level, and stopped the exports of 1855. The following table gives the quantities of gr sent from the United States to France in ea year of the last cycle, also the aggregate ports, and average export prices of flour each year:

EXPORTS FROM UNITED STATES.

	Wheat. To France. bush.	Wheat. To all countries. bush.	Flour. To France. bbls.	Flour. To all countries. bbls.	Corn. To France.	Corn. To all countries.	Pr Fl in U. $
1852.....	..	2,694,540	2,700	2,799,733	..	2,627,075	4.
1853.....	6,100	3,890,141	8,784	2,920,918	100	2,274,909	5.
1854.....	1,041,086	8,036,665	728,279	4,022,386	39,400	7,768,816	7.
1855.....	..	798,884	8,557	1,024,540	302,740	7,807,383	10.
1856.....	1,923,732	8,154,877	3,948,499	3,510,626	50,082	10,292,280	6.
1857.....	1,527,128	14,570,331	184,803	3,712,053	207,580	7,505,318	5.
1858—8 mos.....	201,101	4,073,234	171,101	1,511,101	11,681	2,948,101	4.

The highest point of flour here was in 1855, hen the supply was not equal to the home de- and, heightened by railroads and emigration, id the exportation was cut off. In that year, owever, France took more corn than ever. his fact has begun to attract attention there, id may become very important. It has been enerally supposed in France, as formerly in ngland, that there are countries other than rance so prolific in grain, that if it were not r the corn laws they would so overwhelm the untry with wheat at low prices, as to compel e abandonment of the culture there. The perience of the past few years, when stern cessity has compelled the removal of duties, s excited other fears, since it has demon- rated that when the crops are very short, ere is great difficulty of getting a sufficient pply at any price. In 1855, wheat was 75s. er quarter in England, and 70s. in France, et the United States, which had been looked for an inexhaustible supply, was unable to rnish any, even at these exorbitant rates. he capacity of Russia, it is now ascertained, very much overrated, and the supplies of the sin of the Baltic are annually growing less. t this point, intelligent French inquire what n America furnish? The response is, that rn is an inexhaustible and indispensable op. It furnishes a large portion of the food r man and beast in the Union, and was the ainstay of Ireland in the famine of 1847. he grain is already largely used in the South- n and South-western departments. Intro- uced in the Northern departments, and a eady market opened, the United States could pply 80,000,000 bush. per annum at low rices. If it served no other purpose than as od for animals, it would relieve the pressure n times of scarcity very materially, and reatly promote the extension of French trade.

The import, export, and prices of wheat in rance for each of the five years embraced in e cycle ending with 1857, were as follows:

	Import.	Export.	Average Per hecto. f. c.
853.....	4,219,104	301,102	22.39
854.....	4,743.247	285,738	28.82
855.....	3,041,258	208,064	29.32
856.....	7,197,483	193,042	32.46
857.....	4,231,953	355,750	27.09
otal, hectolitres,	23,433,488	1,353,696	28.01
o. in bush.....	64.442,092	3,722,664	$1.90

Thus France purchased over 60 million ushels wheat at 114 million of dollars, a sum hich she, in all probability, will save during he present cycle.

The idea of the capabilities of the United tates to supply food, has been drawn from the reat quantity of lands, and of emigrants who o on to them. It is not, however, sufficiently orne in mind, that the surplus which those occupiers can raise is very small for want of assistance. Labor is not to be had, and the unaided industry of the farmer enables him now only to supply his own wants. It is only to the machinery introduced that we are indebted for any surplus. Every grazier must raise corn, because it is indispensable food for man and beast, and a little labor will procure a great deal. It is also most easily harvested. It can, therefore, be supplied cheaper and more abundantly than most other articles. Since corn was introduced into Great Britain in 1846, she has not ceased to be a large consumer, annually taking a larger quantity.

We have now before us clearly a "cycle" of cheap food, when the demands of Europe will be less, and it is to be expected that the exports will fall off. It is to be borne in mind, however, that the great elements of internal consumption has ceased, viz., railroad expenditure and migration, while, on the other hand, great tracts of land have been settled and enjoy cheap avenues to market. A larger surplus at lower prices may therefore tempt purchasers from Europe, and still serve to equalize prices.—*U. S. Economist.*

From the Farmer's Practical Horse Farriery.

The Horse and how to use Him.

REMARKS ON POWEL'S TREATMENT—HOW TO GOVERN HORSES OF ANY KIND.

To those who understand the philosophy of horsemanship, these are the easiest trained; for when we have a horse that is wild and lively, we can train him to our will in a very short time; for they are generally quick to learn, and always ready to obey. But there is another kind that are of a stubborn or vicious disposition, and although they are not wild, and do not require taming, in the sense it is generally understood, they are just as ignorant as a wild horse, if not more so, and need to be learned just as much; and in order to have them obey quickly, it is very necessary that they should be made to fear their master; for in order to obtain perfect obedience from any horse, we must first have him fear us, for our motto is *Fear, love, and obey;* and we must have the fulfilment of the first two, before we can expect the latter, and it is by our philosophy of creating fear, love and confidence, that we govern to our will every kind of horse whatever.

Then, in order to take horses as we find them, of all kinds, and train them to our liking, we will always take with us when we go into a stable to train a colt, a long switch whip, (whalebone buggy whips are the best,) with a good silk cracker, so as to cut keen and make a sharp report, which, if handled with dexterity, rightly applied, accompained with a sharp, fierce word, will be sufficient to enliven the spirits of any horse.

With this whip in your right hand, with the

lash pointing backward, enter the stable alone. It is a great disadvantage in training a horse, to have any one in the stable with you; you should be entirely alone, so as have nothing but yourself to attract his attention. If he is wild, you will soon see him in the opposite side of the stable from you; and now is the time to use a little judgment. I would not want for myself, more than half or three-quarters of an hour to handle any kind of a colt, and have him running about in the stable after me; though I would advise a new beginner to take more time and not be in too much of a hurry. If you have but one colt to gentle, and are not particular about the length of time you spend, and have not had my experience in handling colts, I would advise you to take Mr. Powel's method at first, till you gentle him, which he says takes from two to six hours.

But as I want to accomplish the same, and what is much more, learn the horse to lead in less than one hour, I shall give you a much quicker process of accomplishing the same end. Accordingly, when you have entered the stable, stand still and let your horse look at you a minute or two; and as soon as he is settled in one place, approach him slowly, with both arms stationary, your right hanging by your side holding the whip as directed, and the left bent at the elbow, with your right hand projecting, As you approach him, go not too much towards his head or croup, so as not to make him move, either forward or backward, thus keeping your horse stationary; if he does move a little forward, or backward, step a little to the right or left very cautiously; this will keep him in one place. As you get very near him, draw a little to his shoulder, and stop a few seconds. If you are in his reach he will turn his head and smell of your hand, not that he has any preference for your hand, but because that is projecting, and is the nearest portion of your body to the horse. This all colts will do; and they will smell of your naked hand just as quick as of anything that you can put in it, and with just as good an effect, however much some men may have preached the doctrine of taming horses by giving them the scent of articles from the hand. I have already proved that to be a mistake. As soon as he touches his nose to your hand caress him as before directed, always using a very light, soft hand merely touching the horse, always rubbing the way the hair lies, so that your hand will pass along as smoothly as possible. As you stand by his side you may find it more convenient to rub his neck, or the side of his head, which will answer the same purpose as rubbing his forehead. Favor every inclination of the horse to smell or touch you with his nose; always follow each touch or communication of this kind with the most tender and affectionate caresses, accompained with a kind look, and pleasant word of some sort, such as, "Ho! my little boy, ho! my little boy, pretty boy nice lady,!" or something of that kind constantly repeating the same words with th same kind, steady tone of voice; for the hors soon learns to read the expression of face an voice, and will know as well when fear, love o anger prevails, as you know your own feelings two of which, *fear and anger*, a good horsema *should never feel.*

HOW TO PROCEED IF YOUR HORSE IS OF A STU BORN DISPOSITION.

If your horse, instead of being wild, seem to be of a stubborn or *mulish* disposition; he lays back his ears as you approch him, turns his heels to kick you, he has not the regar or fear of man that he should have, to enabl you to handle him quickly and easily; and might be well to give him a few sharp cut with the whip, about his legs, pretty close t the body. It will crack keen as it plies aroun his legs, and the crack of the whip will affec him as much as the stroke, besides, one shar cut about his legs will affect him more tha two or three over his back, the skin on the in ner part of his legs or about his flank bein thinner, more tender than on his back. But d not whip him much, just enough to scare hin it is not because we want to hurt the horse tha we whip him, we only do it to scare that ba disposition out of him. But whatever you d do quickly, sharply, and with a good deal of fir but always without anger. If you are going t scare him at all, you must do it at once. Nev go into a pitch battle with your horse, and whi him until he is mad, and will fight you; yo had better not touch him at all, for you e tablish instead of fear and regard, feelings resentment, ill-will and hatred. It will do hi no good, but an injury to strike a blow unles you can scare him; but if you succeed in scarin him, you can whip him without making hi mad; for fear and anger never exist together i the horse, and as one is visible, you will fir that the other has disappeared. As soon as yo have frightened him so that he will stand u straight, and pay some attention to you, a proach him again, and caress him a good de more than you whipped him, then you will e cite the two controlling passions of natur love and fear, and then he will love and fe you too, and as soon as he learns what to d will obey quickly.

To be continued.

To Prevent Cows losing their Mil Francis Van Doren, of Adrian, Michiga had a valuable cow that lost much of h milk, and found a preventive in placing a India rubber ring around the teat aft milking. He says this is found effectua

Exchange.

AGRICULTURAL REGISTRY AND AGENCY OFFICE,

RICHMOND, JUNE 1858.

he undersigned offer the following desirable FARMS for sale upon accommodating terms:

1. On James River, in Henrico County, near Richmond, containing 400 acres. Improve- very good. Price $15,000. *Land first rate.*
2. Near this city. Improvements *new*. 185 acres. All, or any part of this, is for sale on commodating terms.
3. 200 acres of very fine land, near a large city, with a well established school, of good age and large income. Improvements all *new*. Price $11,000, including good will of school.
4. In Lancaster county, Va. 1,000 acres. In the "fish and oyster region." The improve- as good as can be. Price $50,000.
5. In Lancaster also. 750 acres, with houses, barns, &c. Price $25 an acre.
6. In Henry county, Va. 850 acres. The dwelling house is worth $2,500. The soil very Extensive facilities for curing Tobacco, with easy access to several markets. Price $20 an This farm will be divided if desired.
7. In Prince William county. Containing 525 acres. The improvements on this farm are ry fine and commodious. The soil produciive. Price $30 an acre.
8. In Fauquier. 265 acres. Very fine buildings. This is a *superb* place. Price $85 an
9. In Fauquier county. Upwards of 500 acres. Soil productive and well set in clover. $20 an acre.
10. In Cumberland. 228 acres. Improvements good. A large manufacturing mill close house, (not belonging to the farm.) This is a cheap and productive farm. Price $3,000.
11. In Caroline county. 500 acres. A very good farm. Price $6,000.
12. In Georgia. A large tract, with extensive improvements, embracing dwelling houses, mills, &c.
13. 2 Farms near Williamsburg—containing 154 acres. Price $4,500; and 130 acres, price 0. The land *highly improved*. "Green sand marl" very abundant. Buildings good. Will be eparately, or together.
14. In Nicholas county, Virginia. 325 acres. Price $1,800. This is a good stock farm, and ll the usual buildings (nearly new) on it.
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16. In Amelia county. 375 acres. 100 acres cleared, balance in good timber. Good s, orchards, &c. Is near to churches of several denominations. Price $10 an acre.
17. Near Richmond. 65 acres. All the buildings in *thorough* repair. This is a beautiful . Price $7,500.
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LSO—2 thorough-bred young STALLIONS.

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une 1858.

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Corner of Grace and Foushee Streets, RICHMOND, VA.

The next SESSION of this INSTITUTION will open on the FIRST DAY OF OCTOBER, 1 and close on the First Day of July, 1858.

TERMS FOR THE SCHOLASTIC YEAR,

For Board,	- - -	$200	For two lessons (of an hour) a week,
For Washing,	- - -	20	For three lessons (of an hour) a week,
For Lights,	- - -	6	For four lessons (of an hour) a week,
For English Tuition,	- -	40	For the use of Piano, - -
For Modern Languages, (each,)	-	20	For Drawing, from Models, -
For French, when studied exclusively of the English branches,	- -	40	For Drawing, from Nature, -
For Latin,	- - -	20	For Painting in Water Colors, -
For Music on Piano, Harp, Guitar, Organ or Singing:			For Oil Painting, - -
For one lesson (of an hour) a week,		40	Primary Department—for Children under 11 years of age, - -

REFERENCES:

The Patrons of the School.—Right Rev. Bishop Meade, Right Rev. Bishop Johns, Right Bishop Elliott of Georgia, Right Rev. Bishop Cobbs of Alabama, Rev. Moses D. Hoge D., Rev. Charles H. Read, D. D., Rev. T. V. Moore, D. D., Rev. B. Gildersleve. The Cl of the Episcopal Church in Virginia.

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All letters to be directed to HUBERT P. LEFEBVRE, *Richmond, Va.* [July '57—

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Copies, with the prices marked against such animals as are for sale, may be had by addressing him as above.

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