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FRANK: G. RUFFIN, EDITOR.

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DEVOTED TO

AGRICULTURE, HORTICULTURE,

AND THE

HOUSEHOLD ARTS.

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THE SOUTHERN PLANTER



Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts. Tillage and Pasturage are the two breasts of the State.—*Xenophon.*

FRANK. G. RUFFIN, EDITOR.

F. G. RUFFIN & N. AUGUST, PROP'RS.

VOL. XVII.

RICHMOND, VA., FEBRUARY, 1857.

No. 2.

PROF. MAPES' LECTURE ON "ISOMERIC COMPOUNDS" REVIEWED.

MR. EDITOR:

In the January number of the Working Farmer, there is an article purporting to be the report of a lecture by the "Senior Editor" of that Journal, Prof. Mapes, before the Farmers Club of the American Institute in New York, which is, to say the least of it, a very remarkable production. The article is headed "Isomeric Compounds," but is, in fact, an attempt to show that the various inorganic substances which are met with in plants, can only be food for the higher orders of plants, *after they have passed through a succession of inferior races of plants.* Or, to use his own words, "every time one of the primary substances enters a growing plant and becomes part of it, it has progressed, and in a manner which analysis alone cannot recognize; and, when from the decay of the plant, the primary has returned to the soil, *it is rendered capable of being absorbed by a higher class of plants, which in its turn, by its decay, renders up its primaries fitted for a higher assimilation.*" It is true the lecturer did refer to one or two supposed examples of isomerism, but as he has evidently mistaken the true signi-

fication of the term, it is not at all surprising that the bodies mentioned are not truly isomeric. I shall not stop, however, to correct the mistake, as what I have to say is in relation to his theory of "progression," or, as he styles it in other places, "progression in the primaries."

The theory is put forth with a degree of boldness and assurance characteristic of the man; numerous examples are given by way of *illustration* as he goes along, and evidently for the purpose of throwing dust into the eyes of the credulous; but when we look for the proofs in support of this new fangled and bold innovation upon what has heretofore been regarded as the true explanation of vegetable phenomena, we look in vain. It is sufficient that the distinguished "Senior Editor and Professor" should have proposed the theory: proof is entirely unnecessary! Since, however, some of us know the gentleman only by *reputation*, we are not disposed to be so easily satisfied, indeed, have the hardihood to think that his position is untenable, and I for one, feel disposed to attempt to prove it so, by reference to some of the illustrations that he has favored us with.

He says—"Nature's laboratory seems able to create differences which escaped

the chemist. In many of our limestone districts, such as Duchess and Westchester counties, N. York the farmers find it necessary to burn the limestone and then expose it to the atmosphere before its use in the soil, until it becomes carbonate of lime, by absorbing carbonic acid; and notwithstanding the fact that their soil is a *debris* of limestone, (at least in part,) still they cannot obtain full and remunerative crops until a new portion thus treated has been added. If, however, they should add a thousand bushels per acre, of lime so prepared, the soil would cease to be fertile. Notwithstanding this truth, we know that the soil of the plains of Athens contains forty per cent. of carbonate of lime, and that many of the chalk-soils of England contain a much larger quantity. Still they are fertile. The chemist will tell us that marble dust, the lime used by the Westchester farmer, the chalk cliffs of England are all of the same composition, and are isomeric compounds; and many have supposed that their effects would be alike. The fact is, that the English soil and the soil of the plains of Athens, with ten times the quantity of lime which would render another soil barren, if the lime were made of our limestone, are still fertile and capable of raising full crops. Thus it is clear that a difference exists, which chemistry alone cannot point out. Still, when the true cause is understood, there is no difficulty in comprehending its action. The plain truth is, that every time one of the primary substances, originally from the rock, and then from the soil, enters a growing plant and becomes part of it, it has progressed, and in a manner which analysis alone cannot recognize; and when, from the decay of the plant, the primary is again returned to the soil, it is rendered capable of being absorbed by a higher class of plants, which in its turn, by its decay, renders up its primaries fitted for a higher assimilation."

In the first part of this paragraph we have the admission that an application of lime to the soils of Duchess and Westchester counties, is of great service, indeed, that "full and remunerative crops" cannot be gotten without such application. Where, then, is his "progressed" vegetation? The lime applied was gotten by burning the limestone, and certainly the gentleman with all his gratuitous assump-

tions, will not assume that that "progressed" by being good for successive races of plants. The lime by which these soils are so much improved, is a true *mineral* manure, and the benefits resulting are just such as the truly scientific chemist would expect; by reference to a geological map it will be seen that the limestones referred to, are the same as those found in the valley of Virginia, and it is a well known fact that the soils which rest upon them, and which result from their disintegration, contain very little lime. I shall not attempt to explain why one thousand bushels of lime to the acre would impoverish the Duchess county soils, while the soils of the plains of Athens, of the chalk cliffs of England, &c., contain so large a per cent. of carbonate of lime, but when his theory is a little farther "progressed" shall content myself with showing that *his* explanation won't do for our latitude.

Our lecturer then proceeds to the assertion, that the fresh *debris* of the rock from the mountain side will not produce the highest class of vegetable growth, and refers to the single and double rose in proof of it. He says the single rose taken from the primitive soil and carried to the garden may be gradually improved to the double rose, and because "the inorganic constituents of the garden have been in organic life many times," and "have thus been rendered fit "*pabulum* for the new comer." If this is the reason for the change, why is the process *gradual*? why is not the single rose transformed immediately, or in a single season, into the full blown double rose? and why will the same rich garden soil produce both the single and double rose side by side, year after year? The truth is, Mr. Editor, that the single rose transplanted to the rich garden will continue to be a single rose, until, by long cultivation, and the application of certain principles which are well known to the horticulturists, the transformation is very gradually effected. This is progression, it is true, but not the "progression in the primaries" that our lecturer is so fond of referring to.

The next example is best given in his own words:—"Every practical farmer, who has a sufficient knowledge of chemistry to observe truths as they occur, knows that the sulphate of lime made from bones by treating them with sulphuric acid, to

render them super-phosphate of lime, is worth many times its weight of native sulphate of lime, known as Plaster of Paris; and that while the one is suited for the use of a higher class of garden crops, the other is comparatively inefficient." The gentleman may be "progressed" chemist enough to have made this discovery, but I will venture the assertion that no one else has. When sulphuric acid is applied to ground bones, the reaction is such that we have sulphate of lime, super-phosphate of lime, neutral phosphate of lime, animal matter, &c., to which some manufacturers add either sulphate of ammonia, or guano. Now when a farmer applies this manure, how is he to know to which one, or how many of the various ingredients present, he is to attribute the benefits to his crop, if any there be? and unless the gentleman gives us a receipt for determining the relative benefits which are to be carried from each and every one of the constituents of the manure. I very much fear that farmers this side of Mason and Dixon's line, will regard the assertion that, "the sulphate of lime in this manure is many times more valuable than plaster," as a purely gratuitous one, made without proof. I confess that I believe that the sulphate he speaks of, if it were possible to determine the fact, would be found to be more immediate in its action than common plaster. It is *precipitated* sulphate of lime, or plaster in an exceedingly fine state of division, and consequently more valuable, and more readily acted upon by chemical agents than common plaster; but I would not like to undertake to prove this by using super-phosphate of lime.

He says further in relation to this same subject:—"Now it is evident that the lime in the bones of the animal was received from its food, which, being a higher class of vegetable growth, could assimilate only such lime as had been before many times in organic form, and therefore, rendered capable of entering the higher class of plants, and of being appropriated instead of being parted with as excreta: for plants do throw off any material held in solution by water, which is not sufficiently progressed to form a part of their structure." If this is all so, will the gentleman be so good as to enlighten us as to the use of *lime*, a strictly mineral manure, or common *plaster*, another of the same sort.

Lime fresh from the kiln, that has not "progressed" a particle, will, after standing long enough to become air-slacked, produce the most surprising effects on many soils, particularly on such soils as are naturally deficient in this substance; and plaster, another manure without "progression," is now justly regarded by many farmers as indispensable to successful cultivation, even when crops of the "higher class of plants" are wanted.

Again,—“The same truth will apply to the phosphate of lime separated from bones as compared with that resulting from the chlor-apatite rock which has not before found a place in organic life. Thus the phosphate rocks of Estramadura, that of Dover in New Jersey, and elsewhere, are composed of phosphoric acid and lime, and in the same relative proportions as in the phosphate from bones, will not fertilize plants of the higher class; nor will they, after treatment with sulphuric acid.” Indeed! and how does he know any such thing? Some farmers are a little incredulous, and would wish something like a show of proof before they can believe quite all that is said in the above quotation. The English farmers differ from the gentleman, evidently, for they are willing to give twenty-five dollars a ton for the mineral phosphate, (excuse me, “chlor-apatite,”) just as it comes from the quarry. Now I say, that if bone phosphate dissolved in sulphuric acid, will benefit any particular soil or crop, mineral phosphate will do the same thing if, similarly treated; they are the very same in *composition*, and identically the same in *form*. Both are *soluble*, and in a condition suited to assimilation by plants; and the lecturer might as well attempt to make farmers believe that the moon is made of green cheese, as to make them, or any other sensible set of men believe, that as long as such is the case, the *very same effects* will not be produced. The gentleman is “progressing” evidently, but the climax is not yet.

If it was a simple question between bone dust and mineral phosphate of lime, then I could argue with the gentleman, so far as to say that the bones would be more *immediate* in their action, and hence, would seem to be more fertilizing. Bones consist of cartilage, &c., containing cells, the latter being filled with phosphate of lime; when they are applied to the soil, the ani-

mal matter decays, leaving the truly bony part very porous, and in such a condition as to be acted upon by carbonic acid, water and other decomposing agencies, and hence, it readily finds its way into plants as food. But the mineral phosphate is hard and compact, and even when crushed is exceedingly insoluble, and very slowly acted upon by the agents which produce change in the soil, and on these accounts it cannot serve as an active fertilizer.

I pass over two equally luminous examples of the gentleman's "progressive" science, and present the reader with the following *tit-bits*. "Does any practical agriculturist believe that ground granite or felspar (the latter containing fifteen per cent. of potassa,) will benefit the growing crop as much as wood ashes?" No, I say emphatically, and I think that I have "progressed" far enough in chemistry, if the lecturer has not, to explain it without being so green as to be cajoled into the belief, that "progression in the primaries" has anything at all to do with it. The truth is, Mr. Editor, the potash in the felspar is in the form of *silicate of potash*, is perfectly insoluble, and is therefore, bound up as with a chain of iron, and must remain perfectly inert in the soil, until the rock, by slow decomposition, yields its potash in a soluble form, or, as *carbonate of potash*; while the potash that is in wood ashes is already in the form of carbonate, is very soluble, and is capable of entering into the circulation of plants from the moment of its application.

"Green manures of a high class, decomposing in the soil, furnish progressed inorganic materials, and although very minute in their quantities, still, from their progressed condition, they will produce larger crops than greater quantities of similar primaries from lower sources. *The manure of the stable owes its value to this truth.*" This is an important piece of information, if true; we can now take all of our stable manure, pile it up, let it *firefang* and dry up, then *burn* it, gather up the ashes, and strew them on the land,—the effect will be just the same as if the manure went on fresh from the dunghheap! What a "good time" we farmers are going to have: no more trouble about the escape of ammonia; no further discussion about the *fixing* power of plaster, &c., and what a saving of time and money, when we

can haul out the ashes of our manure instead of the thing itself! Can you think, Mr. Editor, that the "Senior Editor" really believes all this, or is it all *palaver*? Our farmers think that stable manure is valuable in proportion to the nitrogen it contains, and think that manure which has "progressed" so far as to have lost all of that, is no better than the same weight of chips.

"The whole system of nature has been progressing, and our forefathers could not have had many of the luxuries we now enjoy, simply because the primaries of the soil in their time had not been so progressed as to produce them. *Soils that formerly would produce but a kale and lower class of cabbage, will now grow the cauliflower.*" This paragraph is important in a historical point of view; it is important to know that our forefathers could not have had cauliflowers if they had wanted them, and that when they wanted cabbage, they had to take a "lower class" or a "kale," all because "the primaries in the soil in their time had not been so progressed as to produce" a "higher class". It suggests the idea too, that Cincinnatus, when called from his plough on a memorable occasion, could not have left much after all—only a "lower class of plants"—things had not "progressed in the primaries" to admit of his growing the "higher class," or "first families." To be serious, Mr. Editor, all this is superlative nonsense, and the gentleman surely could not have been so absurd as to suppose that he would find any one who could believe it to be true. I did think of refuting the assertion, but it is unnecessary; the experience of the world, from the time of the patriarchs to the present, is, we all know, opposed to this nonsensical rigmarole about "progression in the primaries."

"Why is it that night soil will produce effects not warranted by its analysis, and such as cannot be imitated by any synthetic-arrangement of its constituents? Is it not because the food of man contains the primaries in a more progressed condition than that of any other animal? Animals are part of the machinery used by nature for the progression of the primaries, and bear the same relation, in their decay, to the supplying of pabulum for a higher class of plants to feed a superior class of animals, as did the rocks to the soil, the

soil to the lower class of plants, those to the higher, and so on to nature's ultimatum, man." Now I am not aware that night soil does produce any effects *not* warranted by its analysis; man lives upon a highly concentrated food, and consequently, what he excretes necessarily makes a very concentrated and powerful manure. Night soil and guano stand side by side, and as well might we say, that the latter produces effects not warranted by its analysis, as to say that the former does. As to the *synthetical* part of it, I must confess I know of no process of getting this manure except in the natural way; but when I get so far in chemistry applied to agriculture, as the gentleman has, and succeed in making a synthetical preparation of night soil, I shall be prepared to enter the lists with it for a fair trial of the two.

In the last part of this paragraph reference is made to the offices performed by animals in the economy of nature, in which the same idea of "progression in the primaries" is brought in, and the whole ends, in quite a flourish of trumpets with "nature's ultimatum, man." I cannot, it seems to me, do better than briefly explain, in this connection, what scientific men *know* to be the true relations subsisting between the animal, the plant, and the soil from whence comes the substance of both. The seed "after its kind" is buried in the soil, it sends out roots to support and draw food from the soil for the plant, stem and leaves, the latter to draw food from the air. Carbonic acid, water, and ammonia, furnish all that is needful for the organic portion of the plant, and the soil supplies the inorganic portion, which enters the plant by its roots, and in a state of solution. How it came in solution, whether from the remains of previous races of plants or animals, or directly from the mineral earth, is of no consequence. The plant matures; is used as food for man and animals; is burned, or decays; but no matter by what process it is destroyed, it returns carbonic acid, water and ammonia to mingle again with the air and the soil, while the mineral matter returns to, and becomes a part of the soil. The animal, during life consumes the vegetable, and returns the same bodies, ("primaries" the Pro. would call them,) carbonic acid, water, and ammonia, together with more or less

mineral matter; and after death, that which remains in the form of flesh, bones, &c., leaves in the soil, and in the air, the very same substances which were originally drawn from them by the growing plants. Thus the death and decomposition of one race of animals and plants, become truly the source of life to succeeding races.

But to return to our lecturer, who, having said all that I have commented upon, and much more, proposes to explain why the chalk soils of England are productive.

"Where did the chalks of England come from? We suppose them all to be coralline or fossiliferous; and hence, to have occupied organic life perhaps *millions of times before they found their place in those soils*. Perhaps we may trace them thus: The decay of organic life caused the primaries to be yielded up in a state more readily soluble than before. Large proportions of these primaries are carried by the streams into the ocean. There the lime may have been appropriated to forming the bones of fishes, shells, etc., and perhaps this process was repeated millions of times before the coral insect used the lime for the construction of its habitation. Finally an upheaval exposed it to atmospheric and other influences, and thus formed the chalk soils of England, which, although isomeric with the soil containing a disintegrated marble, is far different from it for all practical purposes; and this difference arises *mainly from the progression of the primaries it contains*." I, Mr. Editor, have read a good deal of geology, and think with the geologists, that all the strata of limestone, chalk, sandstone, slate, &c., &c., which are spread over the earth, and attain a thickness of thousands of feet, took much longer time to form than most persons are willing to admit. But to suppose that the calcareous matter in the chalk, (which, by the way, is not *coralline* as our author states, but made up of minute shells,) travelled about on the land and in the water, until it had "progressed" so often as to have been "millions of times" in the bones of fishes, etc., before it finally found a quiet resting place in the chalk bed, is *a little more* than I can believe. Why it goes decidedly ahead of the "vestiges of creation" man. Now it so happens that the limestones of Duches and

Westchester counties, also owe their origin to shell fish and corals, so that if the chalk has "progressed" so much and so often, these limestones should have done the same; and yet our lecturer gives them no credit for their "progression." "Perhaps"—to use a word which props the above philosophy at four points—perhaps he don't know that they are as full of fossils as the chalk.

In our first quotation, the limestone soils of Athens are spoken of in the same connection with the chalk soils of England, and the necessary inference is, that whatever would explain the fertility of one, would apply with equal force to the other. So the lecturer thought, for in the paragraph preceding the one last quoted, he says, "let us see if we can comprehend why the chalk soils of England, and of the plains of Athens, are not barren, as would be our soil, if one-tenth the quantity of lime they contain should be added to it." The chalk soils, according to our author, are fertile, "mainly from the progression of the primaries," and "although isomeric with the soil containing a *disintegrated marble*, is far different from it for all practical purposes." Now it is a little strange that the gentleman, before mentioning the soils of the plains of Athens, and giving us the important piece of information that they contain forty per cent. of carbonate of lime, had not also taken the trouble to ascertain that these soils *do contain a disintegrated marble*. Athens and the country around it, is celebrated for the beauty of its marbles, which are highly crystalline in structure; and consequently, the soils resulting from them cannot, according to the "progressive" theory of the gentleman, owe their fertility to "progression in the primaries," although he sets out in the beginning with the assertion that they do. Will the gentleman be so good as to explain this little discrepancy?

According to the gentleman's views, no amount of "progressed" chalk could injure a soil, and therefore, a thousand or two bushels on an acre of common arable land, would do no harm at all. Does the gentleman believe this? Our own marl beds differ from the chalk only in their being more "progressed" than it is; at least we may take it for granted that they are, from the fact, that the shells, &c., of the marl are *larger* than in the chalk; and yet we

all know that an over-dose of marl will injure land.

I might make numerous other quotations from this remarkable production, but my limits admit of but one more. After saying that fossil remains are now supplying us with the phosphates, &c., which were "progressed for the use of man," he gives, us a little of the progressive theory, as applied to animals. "Look at the returns of the Smithfield market of two hundred years ago, and the returns at the present time, and we shall find that the modern ox slaughters are one-third heavier than his predecessors. Even the horses represented in the Elgin Marbles, although beautiful as works of art, will not fill the eye of the horse-breeder of the present day. They are inferior in form and size. And this is true, not of the inferior animals alone, but also of man.

"At the Eglinton Tournament, which occurred a few years ago in England, many of the young nobility appeared in the armor worn by their great grand-sires, and in almost every case these suits of armor required to be enlarged before they could be worn. It is true we hear of giants in the olden time, but we have them, (too-be-sure we have, the "Prof." is one,) also in our day."

The first part about the animals is not very flattering to breeders of fine stock certainly. Here they have been laboring from year to year, and from generation to generation, supposing that by careful attention to the *breed*, judicious crossing, &c. &c., they were improving their stock, when lo! it turns out that both beef cattle and men, horses and *asses*, have been "progressing in the primaries."

In this connection, I would suggest an experiment for the "Prof.," who, I am told is fond of experimenting. Let him import a poor, shuffling, scrawny little "*mustang*" from the un-"progressed" prairies of Texas and ascertain by experiment, how long it would take the animal, living upon the lecturers highly "progressed" farm in New Jersey, to progress so far as to make, not a first rate horse, but one that a decent man would not be ashamed to call his own.

As to man, Mr. Editor, verily he is "progressing;" Homer, Demosthenes, Cicero, and all the other worthies whose names have come down to us, are soon to

be eclipsed, and then hurra for "progression in the primaries," and for lecturers who, by blowing their own trumpets, secure to themselves an unenviable notoriety.

ANTI-"PROGRESSION."

OFF-HAND SHOT BY THE WAY AT
THE "HOME DEPARTMENT."

BRUNSWICK Co., VA., }
February, 6, 1857. }

MR. EDITOR:

The establishment of a Bureau of Agriculture, with a cabinet officer at its head equal in rank with the Secretary of State, of War, &c., at Washington, with all the consequent commissioners to collect, prepare and diffuse agricultural knowledge, the establishment of "Depots for Stallions, Jackasses, Bulls, Boars, Rams, Goats, &c., for the improvement of our stock, and the lending of money by the government to the poor farmers to drain their lands, is indeed a very grand scheme; and it ought, of course to be "put through" at once. But in addition to the above named philanthropic measure proposed to advance the interest of agriculture, I would suggest some others which may be of equal, if not of paramount importance, namely:

1st. A minister plenipotentiary ought, forthwith, upon the formation of this bureau, to be dispatched to the court of the moon to enter into negotiations for better weather.

2nd. Three special commissioners, clothed with all the power that congress can confer, ought to be appointed by the President, to go upon the mountains and upon the icebergs of the ocean, to regulate, if they can, the winds and rains.

3rd. A very imposing standing army ought to be organised, armed, equipped, officered, &c., and sent into the agricultural districts to prevent the inroads and depredations of chinchbugs, bollworms, hornworms, grasshoppers, caterpillars and all other enemies to the interest of agriculture.

4th and last. A conference of all the great powers concerned ought to be called to meet at the North Pole, or some place equally as convenient, to settle, if possible, the difficulties existing between our cattle and swine, and the lice and fleas that are sucking their very blood out of 'em.

But in the discussion of the subject, it

is asserted on one side and denied on the other, that the farmers have to defray four-fifths of the expenses of government. I differ with both, for I maintain that agriculture has to bear all burthens, either directly or indirectly; if I am wrong I hope to be corrected.

It is an undeniable fact, that agriculture is really the source of all wealth. This being the case, it follows as a matter of course, that those engaged in it have to defray all the expenses of government, either directly or indirectly; and this is a necessary consequence, owing to the social relations of society, or rather the dependence of all classes upon agriculture. It cannot be denied that the different pursuits in which the different classes are engaged are so many helps to the interest of agriculture, if all were fairly conducted, which I think is not the case. But to the argument: If the government were to raise revenue by a direct tax instead of raising it by impost duties, and were to tax only the manufacturing class, or all the classes except farmers, it would not in my judgment benefit the latter class a particle, for the reason that most of the pursuits of these classes are indispensably necessary to the interest of agriculture. The manufacturer, if he had to pay more taxes could not afford to give as much for the raw material upon which he operates, or else he would have to sell his manufactured articles at a higher price in order to meet the increase of his expenses, and so it is with the other classes, except farmers: they have to sell at prices to meet expenses.

On the other hand, if farmers only were taxed, the manufacturer could afford to give more for the products of the farm, or sell for less than he did before; and in like manner the physician could afford to reduce his charges, the lawyer his fees, &c.

Now, for the government to impose a tax of an indefinite number of millions of dollars, which would be so much taken from agriculture, to accomplish for it some extremely uncertain good, would be simply, to say the least of it, a reckless proceeding. It is very true that agriculture has and does suffer, but from a very different cause from that ascribed by Mr. Mapes, when he says that "it is for the want of the fostering care of government." The reason why other classes have

advanced faster in knowledge and wealth than the farmer, I intend to make the subject of another letter, and after that propose a plan which to my mind is one of easy execution and entirely effective to raise the farming interest to that position which its importance demands. My views may be wrong, however, and if so, I shall be pleased if some one will correct me.

OLD CLOD-HOPPER.

From the Boston Cultivator.

NEW ARTICLE OF FUEL.

Messrs. Editors:—Among the novel transactions of this fast age, is the use of "corn in the ear" for fuel. Some of the prairie farmers of this vicinity are actually burning corn, as a measure of economy, for warming their houses. It may strike some of the eastern farmers with horror—the idea of using one of the great breadstaples in place of wood or coal, but such is the fact. Corn-cobs have long been used for fuel, and for summer use they make excellent and quick fires, but corn makes a more elastic and hotter fire, throwing off a greater degree of heat on account of the oleaginous element which it contains.

Corn, then; has inaugurated for itself in the "Sucker State" a new use; the hearthstone is cheered and enlivened by its heat-imparting qualities. Merriment, not that kind produced by the "worm in the still," but social merriment, is now a new offspring of its already manifold uses; the family is not only fed from its farinaceous properties, but is also *warmed*. We recline upon its husks, which form a bed that the Emperor Nicholas might court, and we extract from it a fluid for our lamps, while its use for fuel, as figures will show, is cheaper than wood or coal.

Wood and coal at the door cost \$6.50 per cord, or \$6.50 per ton. Corn, 75 lbs., is worth in market 25 cents, at home twenty. A bushel will burn nearly or quite as long as a bushel of coal, or wood of corresponding value. Thus you see that in point of expense and agreeableness, the figures incline to the side of corn at present prices.

What think you, farmers of New England, could you sit by the enlivening heat imparted by a substance which enters largely into the formation of bone and sinew, the muscles of our bodies, and the growth and profit of our animals?

Such is the ease with which corn can be grown here upon the prairies, that when the price falls below twenty-five cents, it is cheaper than anything else for fuel. Farmers here raise from one to many thousand bushels, cultivated mostly by horse-labor, save in picking; so that corn possesses a value smaller to us than to you of New England, where it enters largely into the great bulk of breadstuffs.

Sandwich, Ill.

FIDELITER.

THE GREAT SNOW STORM OF JANUARY, 1857.

In publishing the following interesting report of Lieut. Maury of the National Observatory, we beg leave to call attention to one fact which has enabled us at least to "breathe purer and deeper." We had heard that Lieut. Maury had stated that we were to have some sixty or seventy winters like the present and last. We felt it our duty to "demand the authority on which the assertion was made." We are happy to say that Lieut. Maury denies having ever made it.

Report to the Navy Department.

OBSERVATORY, WASHINGTON, }
February 5, 1857. }

SIR: Letters in answer to the circular issued on the 23d ultimo from this office have already been received from the States along the Atlantic seaboard. They contain statistics enough concerning the great snow storm of January, 1857, to justify a preliminary report of its march over this part of the country.

The hour when it commenced and the hour when it ceased to snow constituted very notable features by which the march of this storm could be traced. The precise moment of the commencement, however, was not very well marked; for there was a light fall of snow, which, after an hour or two, increased into a very heavy fall. Hence observers at the same place are sometimes found differing an hour or so in their reports as to the commencement of the snow fall.

There has not yet been time to receive full returns from the States south of Virginia. So far, however, as returns have been received, the fall of snow, with a furious north wind, appears to have commenced simultaneously in Virginia and North Carolina. The storm then marched against the wind through Virginia into the New England States. It did not reach as far as Hamilton, Canada, on one hand, but

on the other it is known to have extended into Nova Scotia, if not further.

The following tabular statement has been compiled by Lieut. BENNETT from the reports, so far as they have been received. It will serve to show the parts of the country from which further reports are most wanting, and perhaps induce all who

keep a meteorological record to send extracts from it for the week commencing 14th January, 1857. [The Editors have not found it convenient to insert the table in its full dimensions, as it was too broad for their columns. They give, however, what they conceive to be the most interesting portion of it:]

Beginning of storm.	1857—January.	Wind.	Thermometer.	Depth of snow.	Ending of storm.	Thermometer.
Edisto Island	2½ p. m. 18	West.	†34°	½ inch.	5½ p. m. 18	†21°
Augusta, Georgia	8½ a. m. 18	West.	†38	7 do	Night. 18	†8
Nor'l College, N. C.	9 p. m. 17	N. E.	†10	18 do	Night. 18	-6
Roxobel, N. C.	9 p. m. 17	South.		12 to 15	9 a. m. 19	†7.5
Providence, Va.	8½ p. m. 17	North.	†12		Noon. 19	†10
Bowling Green, Va.	8 p. m. 17	S. W.	†32	15 to 18	3 p. m. 19	†18
Augusta county, Va.	8 p. m. 17	N. E.	†24	12 to 15	19 p. m. 19	†2
Kanawha Salines	17	W. & N. W.	†5	10 to 12	19	-13
Jasamine county Ky.	5 p. m. 17	N. N. W.			11 a. m. 18	
Middleburg, Va.	7 a. m. 18	N. E.	†4	12 inches.	12 m. 19	†6
Leesburg, Va.	7 a. m. 18	N.	†6	10 to 12	Evening. 19	†12
Berryville, Va.	7.45 a. m. 18	N.	†5	8 inches.	8 a. m. 19	†11
Martinsburg, Va.	9 a. m. 18	N. E.		10 inches.	Noon. 19	
Perrymansville	3 p. m. 17	N. E.	†4		Night. 18	
Sarou Creek, Md.	7 a. m. 18	N. E.	†4		1 p. m. 19	†18
Monrovia, Md.	7.25 a. m. 18	N. W.		18 inches.	12 m. 19	
Hagerstown, Md.	8 a. m. 18	N. N. W.	-6	8 to 10	8 a. m. 19	-0
Cochranville, Pa.	10 a. m. 18	N.		9 inches.	12 m. 19	
Philadelphia	1 p. m. 18	N. E.	†7	24 inches.	3 p. m. 19	†16
Bristol, Pa.	1 p. m. 18	N.	zero.		Morning. 19	
Willingboro', N. J.	1 p. m. 18	N. E.	-1	7 to 8	10½ a. m. 19	-3
Lambertsville	2½ p. m. 18	N. W.	†2	16 inches.	12 m. 19	15.5
Morri-town, N. J.	3½ p. m. 18	N. N. E. to N. E.	-2	9 to 12	5 a. m. 20	†18
Newark, N. J.	2 p. m. 18	N.	-4		3 p. m. 19	†13
Newark, N. J.	3 p. m. 18	N.	-2½	13 inches.	3 p. m. 19	†18
Brooklyn, N. Y.	2 p. m. 18		†7.5		Evening. 19	†14
Babylon, L. I.	4 p. m. 18	N. E.	†1		19	
New York	Noon. 18	N. W.	†1	9 inches.	19	13
Blackwell's Island	3 p. m. 18	N.	†3	24 inches.	1 p. m. 19	10
Wheeling, Va.	No snow.	N. E.*				
N. E. Dutchess county	Night. 18	N. N. W.	-10	24 inches.	Night. 19	
New London	8 p. m. 18	N.	†5		Morning. 20	11
Smithfield, R. I.	7 p. m. 18	N. E.		24 inches.	Evening. 19	
Harvard College	5 p. m. 18	N. W. & N. N. E.	-4	17 inches	9 p. m. 19	8
Boston	7½ p. m. 18	N.	†2½	18 to 20	12 m. 19	13
Salem, Mass.	8 p. m. 18	N. E.	-5	18 inches.	4 p. m. 19	19
Do.	Evening. 18	N. E.	†5	8 to 9	Evening. 19	12
West Roxbury	5 p. m. 18	N. N. W.	†2		Night. 19	14½
Lynnfield Centre	Evening. 18	N. W. to N.	zero.	4 feet.	3 p. m. 19	8
North Bridgewater	Morning. 18	N. W.	-1		Daylight. 19	
Worcester, Mass.	9 p. m. 18	N. E.	-1	10 inches.	Evening. 19	9
Newburyport	7 p. m. 18	N. E.	-2	12 inches.	19	9
Troy, N. Y.	9 p. m. 18	N.	-7	20 inches.	8 p. m. 19	5
Cooperstown	0.30a. m. 19	N. E.	-10		Sunset. 19	1
Rochester, N. Y.	19	N.	†17		20	21
Charleston, N. H.	Daylight. 19	N. N. E.	zero.	18 inches.	5 p. m. 19	12
Portland, Me.	10 p. m. 18	N.	-3	12 inches.	2 p. m. 19	12
Do.	10.30p. m. 18	N. N. W.	-6	12 inches.	Evening. 19	
Gardiner, Me.	00. 19	N. E.	-2	10 inches.	9 p. m. 19	-0

*Indications of snow, very cold, and thermometer at Zero.

From Bertie county, North Carolina, to Washington the course of the storm was due north, and the time three or four hours. From Washington to New York it was about fourteen hours on the march, with a furious gale right in its teeth; to Boston it flew at railway speed, making the distance in six hours; and thence it arrived at Portland, Maine, at 11 P. M. of the 18th; thus making its march in the "wind's eye" from North Carolina to Maine in about twenty-six hours.

The cold, the wind, and the fall of snow, all of which were marked by violence, appear, each to have had its own rate of march.

How far this storm may have been felt out at sea is not yet known, for there has not been time to receive reports from the vessels that are co-operating with us in these investigations. It is known, however, that the storm extended as far as Nova Scotia.

The fury of this storm has been unequalled for many years. Never since the establishment of railroads has there been such an interruption of travel or hindrance to the mails. It illustrates in a very striking manner the necessity—if we wish thoroughly to investigate the laws which govern the movements of the great aerial ocean in which we live—of extending our meteorological researches from the sea to the land. What though this storm may have had its origin on the land, it caused many and dreadful shipwrecks along the shores and made disasters at sea.

The appliances which, in the progress of the age, have been placed within the reach of men of science would, had the power of using them been possessed by these men, have enabled them to give timely warning of the approach of this storm of many whose lives such warning would have saved.

If the system of daily weather reports through the telegraph which you have recommended for the Observatory had been established, New York and our shipping ports might have had from eighteen to twenty-four hours' warning in advance of this storm; the industrial pursuits of the country and the convenience of the public, as well as the shipping interests, might all have had the benefit of such foreknowledge; for the telegraph, the press, and the mails, in a country like this, can

outstrip the wind, and spread the news of the coming gale faster than it can fly.

Are you aware that at this season of the year the average number of shipwrecks is about one American vessel for every eight hours, and that the total value of the losses at sea for the month of January is set down at something like four millions of dollars?

How many of these losses would have been spared the country could a few hours' warning have been given of this storm alone, to say nothing of others?

It is quite practicable to give such warning. The magnetic telegraph offers us the medium, and the "associated press" the channel for doing it. By extending to the land the system of meteorological research which is carried on at sea, and by establishing a plan for receiving daily by telegraph, and discussing promptly a series of weather reports from all parts of the country, warning might be given, as well to the husbandman as to the mariner, of the approach of almost every general storm, while yet it was a great way off.

The government has wisely sought to mitigate the disasters of shipwreck, and money has been humanely appropriated for the purpose; but, notwithstanding these efforts, great suffering has been encountered, as in the case of the ship *New York* last December, after the crew and passengers had been rescued from the wreck.

Both the Long Island and Jersey shores are curtailed for many miles by a narrow slip of land which is separated from the main by a sound or strip of water from one to several miles in breadth. There are very few houses on this slip of land, and it sometimes happens that ships are driven ashore, as in the case of the *New York*, and that the people on the main cannot cross over the sound, by reason of the ice and cold, to the scene of disaster. It has been suggested by Mr. W. F. Brown, a Senator in the New Jersey Legislature from Ocean county, that if a few hours' warning of these storms could be given by telegraph, a force in advance of every storm might be collected on this narrow strip of land ready to afford succour at once and as soon as a vessel should find herself ashore.

I propose, with your leave, when all the answers to the call for the statistics of this storm shall have been received, to go into

a regular discussion of it, and to illustrate its march and progress by plans and drawings. Respectfully, &c.,

M. F. MAURY.

HON. J. C. DOBBIN,

Secretary of the Navy, Washington.

OATS AS REMEDY FOR WILD ONION OR GARLICK.

In the last number of the Planter we stated, incidentally, in an article on the subject of oats, that three successive crops of oats would subdue wild onion without impoverishing the land. That this is no new thing, will be seen from the following, copied from an old Almanac of the year 1770, which was lately sent us by our antiquarian, but not antiquated, friend, Dr. John Mayo, of Westmoreland.

This almanac was owned by a gentleman of that county, and it is remarkable that the information it gives on this particular subject has died out entirely. Whilst writing this article, a gentleman from the almost adjoining county of Caroline, who is very much troubled with garlick, confesses that he had never heard of it. And it is somewhat curious, that from the year 1770 to the present day, only one man in Virginia is known to have adopted this remedy.

Where the evil is intolerable we tell every one so annoyed that he can easily get rid of it.

A method to destroy WILD GARLICK, communicated to the aforesaid Society, by Mr. HOLLINGSWORTH of Pennsylvania.

The following experiments that I made to destroy the wild garlick, a weed very pernicious to grain, and with which the country is in many places infested, I have found to be very effectual.

In 1753 I fallowed and sowed with wheat a field of about 50 acres, the greatest part of which was very full of garlick. I fallowed in May, stirred in August, and sowed in September. In April 1754, I perceived the wheat much choked with garlick, and at harvest found in many parts of the field almost every tenth head was garlick, which rendered the wheat unfit for use, until by immersing it in tubs of water the garlick (which floats,) was separated from it; but though the wheat, if carefully dried, receives little injury from this immersion, yet the trouble attending it is so great as to discourage farmers from raising large crops. In April 1755 I planted the same field with Indian corn, and

had a good crop. In April 1756 I sowed the same field with oats, in August I ploughed down the oat stubble, and in September sowed a crop of wheat. In April 1757 I was agreeably surprised at seeing but very little garlick, and that small and dwindling; and at harvest there was scarce a head to be found, except along the sides of the fences. The success of this culture, which was merely accident, and done without any view of destroying the garlick, induced me to try the following experiment.

In April 1758, having fixed on a field for my next fall crop, which had produced Indian corn the year before, and was equally full of garlick with that I mentioned before, I sowed part of it with oats, the other part I fallowed in June, and stirred in August, at which time I ploughed in the oat stubble as before, and sowed the whole in September, causing the same ridges to pass through part of the stubble and part of the fallowed land. In April 1759 there was a very perceivable difference. The stubble part was green with wheat, but the fallowed part was of a blueish color, occasioned by the quantity of garlick, and at harvest was full of large heads, while in the stubble part there was not one to be found.

Since that I have continued to sow oats in the garlicky lands designed for wheat, and find I have succeeded so well in destroying the garlick, that, after three years culture in that way, the lands may be fallowed and sown with wheat in the usual manner, without any danger from that noxious plant.

Several of my neighbors have pursued the same method, and find it answers. As the advantage of a crop of oats is more than equal to the difference between fallow and stubble ground wheat, (where the land is tolerably good) I would recommend it to all who are troubled with garlick, to make a trial. The only disadvantage will be the impoverishing their lands, which, if they have manure, may be easily remedied. At the same time I would observe that the stubble which is ploughed down, serves for a manure, and nearly repairs the waste occasioned by the crop of oats.

If it be asked why oats destroy garlick, I must confess I am unable to resolve the question. Perhaps ploughing in the month of April, when the greatest part of the

oil of the root or clove is in the shoot, and turning it under at that time, destroys the roots more effectually than at any other season; and the mowing the oats, which is the method pursued by us, destroys the heads that would otherwise come to seed later in the year. Possibly the same tillage in the same season, without sowing oats, might answer the end proposed; but having never made the experiment, I can say nothing certain on that head.

WHAT KENTUCKY CAN DO!

Every one has heard of the limestone and blue grass region of Kentucky. But those who have not seen it can form no idea of its extreme beauty, nor of its fertility. Of its beauty we shall not attempt to speak, further than to say that we do not believe there exists upon the globe a country of more lovely and refreshing aspect. Of its fertility we are able to speak with statistical definiteness, which will doubtless be more acceptable to our readers than whole pages of "word-painting."

There are about sixteen counties lying in an easterly direction from Louisville, which resemble each other in soil and general aspect. The surface undulates just enough for good drainage. The blue limestone rock lies about ten feet below the surface in continuous horizontal layers. Above the rock lies seven feet of ferruginous clay above which lies the soil *three feet deep*—and such a soil! It is what one of our farmers would be most likely to call *red land*; but it is more properly a dark brown or chocolate colored land. It is the richest loam—having a clay body largely intermixed with organic matter, and just enough of lime and sand to make it all that could be desired for the plough or the hoof. Take the whole body together, and it has no rival on our hemisphere, perhaps not on our globe. Such at least, is our humble opinion.

Wishing to offer to our readers some high standard to work up towards, we sent to an acquaintance, who has a farm in Fayette county, Ky., the following questions concerning his land and its productions, which he kindly answered. We hope that we are not trespassing too far, in mentioning that the estate referred to belong to the Rev. R. J. Breckinridge, D. D. Our readers will agree with us, that

he has no cause to be ashamed of his farm, at least, we should not be, if we owned it!

QUESTIONS ABOUT DR. BRECKINRIDGE'S FARM.

1. Whole number of acres?
2. Number acres cleared land?
3. " " woodland pasture?
4. " " native forest? (natural state.)
5. " " commonly cultivated?
6. What crops?
7. Product per acre of each crop?
8. Kind and number of stock kept on the farm in a single year?
9. No. hands necessary to operate the farm.

ANSWERS TO MR. RUFFNER'S QUESTIONS.

1. 600 Acres.
2. About 400 acres of *cleared land*—the balance in open woods well set in blue grass.
3. 200 acres, therefore, of woodland pasture.
4. Native Forest, nearly as much trouble and expense, and time to bring it into good grass, as to bring it under cultivation: down timber to clean up—undergrowth to cut out—shade trees to be cut out and burned—all sorts of weeds to be extirpated—the grass seed to be sown and taken care of, &c.: all this is frequently done, by little and little, during a long course of years, and so not estimated at its real difficulty. A fine woodland pasture is a highly artificial state of the land, and is in no respect the native forest, except that a part of the finest trees are left standing; there is very little native forest in its natural state, in the central region of Kentucky.
5. 300 acres commonly cultivated—embracing everything but *pasture land*.
6. Corn, hemp, wheat, rye and oats, vegetables, meadow, orchard, &c., &c.
7. Somewhat variable and uncertain—corn, about 60 bushels to the acre, often 75 bushels; wheat and rye, about 20 bushels, often 30 bushels; oats very variable, I have 100, and again not over 30 bushels: hemp, 3 acres to 4 acres—produce a ton of 2240 lbs.—the most variable of our crops, both in quantity and value.
8. I have at present, (May 30, '56,) 50 head of horses, of all ages; 87 mules, all adult; 55 head of cattle, of all ages; 4

head of lack stock; 200 head of sheep of all ages; 70 hogs and pigs; total, about 464 head.

9. For all the purposes of the plantation, I have 10 men, 7 women and 4 boys—besides which there are a number of slaves too young, and a few too old to work, and some household servants. This year I have about 120 acres in corn, 80 acres in small grain, 50 acres in hemp, and 50 more in meadow, orchard, vegetables, &c., leaving 300 acres in grass, of which 60 acres are clover. To cultivate the farm, I require 6 oxen, 12 work-horses and mules, &c., &c. Of the farm hands, one is a carpenter, and one a stonemason—the latter engaged about half the year in putting up stone fence—the former about the same time repairing post and railing, &c. Of my horse stock 25 are horses, generally bred to the jack; all my cattle, except the work oxen, are thorough-bred Durham; my sheep are in three flocks, one Saxon, one Cotswold, and one Southdown, the first being much the largest. Hemp is now worth \$135 a ton; wheat \$1 a bushel; corn \$1 a barrel, (5 bushels;) wool 25 cents per lb., in the grease. My farm is worth \$75 or \$80 per acre; and live stock of all kinds are high. The present condition of the agricultural interest with us is highly prosperous.—*Virginia Farmer.*

WHAT ROCKINGHAM CAN DO.

It would be folly to offer the best county in Virginia as a competitor in agricultural capabilities, with any of the sixteen counties in the blue limestone region of Kentucky—but our Valley region has many points of resemblance to it, although on each point inferior. We have for some time supposed that the lands on Linvill's creek in this county, more nearly resembled the Kentucky lands referred to, than any other section in Virginia. From reliable sources we have obtained the following information concerning the home farm of the late Charles C. Spears, of Linvill's creek. This farm, superior as it is, does not surpass a number of others on the same creek. It will be seen that this land falls but little short of Dr. Breckinridge's. We give an account only of the cleared land, because the timber land is not here, as in Kentucky, used for grazing.

C. C. SPEARS' FARM.

1. Acres of cleared land, 350. 2.

Average number of acres cultivated each year, 140. 3. Staple crops, corn, wheat and grass. 4. Product per acre, wheat 25 bushels, corn 50 bushels, hay 1½ tons. 5. Live stock kept on the farm in a single year, cattle 75, cows 5, young cattle 10, horses 14, sheep 25, hogs 100. 6. No. of hands 5. 7. Price asked for the land, \$100 per acre.

Were our country of fertility equal to this, we should have no occasion to envy any part of the world; but the average production of our Valley lands scarcely reaches half that of Linvill's creek. We have obtained the information given below, concerning what the owner estimates as an average Rockingham farm, although we think it above the average. The farm alluded to belongs to Mr. W. R. Warren. It consists of 280 acres of cleared land. He has this year in cultivation, 80 acres in corn, and 120 acres in small grain. The common product per acre, is 35 bushels of corn, and 10 bushels of wheat. When full stocked the owner keeps 15 horses, 35 cattle, 5 cows, 20 sheep and 90 hogs. Price of the land is \$50 an acre; just half the price asked for the Spears' land.

We might make several reflections upon these facts—but we leave our readers to their own thoughts on the subject.—*Virginia Farmer.*

THE DWARF PEAR CONTROVERSY.

Our readers know that a difference of opinion has existed for many years in relation to the value of dwarf pears. More than ten years ago, a distinguished western pomologist predicted that in ten years dwarf pears would be among the things that *had been*. At the same time they had many strong advocates, and the trees have been widely disseminated and planted. With a large number, dwarfs have succeeded, and with probably a still larger number, they have proved at best, partial failures. There still remains a great difference of opinion in relation to them, and the controversy has of late rather increased than diminished. The inquiries, consequently, are repeatedly coming from all quarters, "Do you regard dwarf pears a humbug?"—"Why do so many fail with them?"—"What is the reason that doctors disagree so much in regard to their merits?"

The answers to these questions are not difficult. One great reason that the dwarf pears fail with so many, is founded in a general and erroneous opinion, that fruit trees of all sorts, young and old, *will take care of themselves*. They alone, of all cultivated garden or farm crops, are expected to flourish without attention. First of all, perhaps, they are planted in a grass sod. The farmer who would deliberately plant a crop of corn or potatoes among grass, would be looked upon as an idiot. The gardener who would set out his cabbage plants, or sow a crop of beets in the tough sod of a green meadow, might be sent to the lunatic asylum. Yet young fruit trees are often set in the turf of door yards, or in weedy, uncultivated places, although their first cost is fifty times as great as the value of the seed for the farm crop or cabbage plantation. We have seen plowmen destroy valuable young trees worth a dollar each, by running over them, so as to avoid an adjacent hill of corn or potatoes, worth about seven mills currency. Trees generally have the last of all chances—they stand at the sag end of the list of all objects for cultivation. This is the feeling entertained towards them by most planters. A Rhode Island Greening, a Roxbury Russet apple tree, or a Kentish Black Heart cherry tree, will withstand a great deal of abuse or neglect, and hence, with all this bad treatment they succeed tolerably well. But with most other kinds of fruit, such treatment will end in failure, or at least, afford but a poor return. Until planters come to regard fruit trees as worth at least as much attention as they always expect to bestow upon their fields of corn, we shall hear sad stories about humbugs, and of the hazardous business of attempting to cultivate the finer sorts of fruits. It appears to us really astonishing, that some very sagacious and well informed men on almost every thing else, should not see at once that this is the great leading cause why we hear so often that dwarf pears are a failure. Every skillful fruit raiser knows that nothing is easier than to raise good *strawberries*; yet men may be found by the hundred, who, having planted beds of the most productive sorts, and then wholly neglected them, gravely announce their opinion that, "There is no use in trying to raise strawberries—we never had any luck with them." A bed

of beets or parsnips, similarly treated, would unquestionably lead them to the conclusion, that "beets and parsnips are very tender, difficult, and uncertain crops to raise"—for they will not grow under thick weeds a foot high, and if treated as fruit trees are, will certainly prove failures.

There is another reason why dwarf pears have, in many instances, not met the expectations of planters. There are only a comparatively small number of sorts which appear to be perfectly at home on the quince stock, and to which dwarfs should always be confined, unless for experiment. Other sorts make but feeble growth, and do not live long after the first heavy crops, and those should be avoided. This subject has, however, been often before our readers, and we need not enlarge upon it here.

Some *localities* appear unfavorable to the successful growth of dwarfs, and we have known instances where the occupants of such localities, having not succeeded, have coolly decided for all other localities from these limited experiments.

Every thing should be kept in its proper place. Nothing should be claimed for any fruit, or any mode of growing fruit, which does not properly belong to it. A strawberry will always be a *strawberry*—needing certain management, and affording certain results—and nothing else can be made of it. It needs *garden culture*—yet this garden culture may be extended over large fields. The same remark will apply to the dwarf pear. Hundred-acre orchards may be planted with it, provided it receives its proper treatment. The man who would set out fifty acres with strawberries, who had not previously become well acquainted with the peculiarities of their management on a smaller scale, might find it a costly experiment. The same result might take place in planting largely of dwarfs. We have known some who have done so, knowing little of their peculiar requirements, and with the supposition that they would grow without care. They of course found ultimately that dwarfs were a "humbug." The same summary decision would no doubt have been pronounced, had the attempt been made for the first time, and with no previous knowledge whatever, to raise watermelons or cabbages. It was a hundred years after the introduction of the

potato into England, before its cultivation, uses, and value were well understood, and it was well that it was not hastily rejected.

We have never yet witnessed the failure of a dwarf pear orchard, where these three requisites had been combined, viz: 1. Good cultivation, or as good as squashes and pumpkins receive in order to flourish well. 2. Selection of those sorts which have proved best for the purpose. 3. A previous trial on a small scale to prove their adaptedness to the particular soil, and locality where planted. One of the best and largest orchards of dwarfs we ever saw, with large thrifty trees, and affording an average of some hundreds of dollars per acre annually, had indeed good enriching treatment; but after all, the cultivation and amount of manure applied did not exceed that given to good cornfields by our best farmers.

We have sometimes had a strong hope that the introduction and culture of dwarf pears might be the means of a reformation in the treatment of fruit trees, and that by actually *driving* cultivators to give proper attention to the one; from absolute necessity in the case, they might acquire an improved habit in managing trees generally. This good result has undoubtedly taken place already, to a considerable extent, and there is no question that the diffusion of intelligence on this subject will extend the improvement already commenced. The discussion and controversy now existing must, as a matter of course, result in important benefit by eliciting facts, and developing new truths, and those are what we all earnestly look for and desire.

It is sometimes intimated that self-interest alone prompts the recommendation of dwarf pears. So far as the writer of these remarks is concerned, this cannot be the case, as his self-interest leads in an exactly opposite direction, but the desire of arriving at the truth, irrespective of any selfish motives, to place these trees precisely where they belong, and to avoid those extremes in deciding questions which many are always prone to fall into, have been alone the suggesting motives for these remarks.—*The Horticulturist*.

POOR MAN'S CAKE.—One cup of sugar, half cup butter, one cup sour cream, one egg, flour enough to make a good batter, half teaspoonful saleratus.

COVERED vs. UNCOVERED MANURE.

There is, there must be, Agricultural as well as Political Economy, and the one is as much a science as the other. An experienced writer has heretofore said in the columns of the *RURAL*, that "whoever seeks a solid basis for individual and national wealth must look for it in the *manure heap!*" From this grand centre radiate all the avenues in which man is fed and clothed, here must he resort for the supply of life's necessities. When we reflect that without the application of vegetable or animal manures to the soil farming must cease, and the prospects not alone of agriculturists, but the world, become clouded, we must be convinced of the importance which should be attached to any means that will increase the quantity, or render of greater value the quality of this life of the soil. *Manure and skillful, well-directed labor* are the first, last and only requisites to agricultural success.

The subject of sheltering manures has often been brought before our readers and various plans and conveniences for the successful prosecution of such object given. Yet farmers are sometimes lax in effort, and as a consequence will *endure a good deal of preaching*. Some are willing, but doubts arise, and expenditures, born of the brain and a fertile imagination, drive the idea from the mind. Others talk largely of "walking in the path their father's trod," and that with all our new-fangled notions and book-farming neither we nor they can get the crops raised of yore. Others would drain from good old mother earth the last drop and still, leech-like, cry give! give! A change must be had, and anything and everything that tends to enrich the soil must, not only of itself be saved, but the various processes through which it passes in decomposition, and fitting for application, narrowly watched so that none of its qualities may escape and be lost. In agricultural establishments where the importance of manure is duly appreciated, every means is taken for its production and the utmost precaution used in its preservation. If we wished an index to the manner of conducting operations on the farm we would desire nothing but a glance at this department of farm economy, and could easily gather therefrom an insight into the affairs of the

owner, pecuniary and otherwise. The farmer who feeds his land may expect to be fed by it, but he who starves the soil must expect, sooner or later, to be put upon short allowance himself.

To the ammoniacal properties of manure, must, in a high degree, be attributed its enriching quality—hence, the value is in proportion to the amount of this salt contained. As this constituent has a great affinity for water, rains and moisture will soon carry it off and after leeching it is rendered comparatively worthless. Almost the entire components of farmyard dung are soluble. Potash, soda, &c., are likewise taken away and the *insoluble and valueless only are left to promote the elements of fertility.*

Experiments and analysis all prove the intrinsic value of sheltered manure. One made by the English Agricultural College, shows that the nitrogenized portions in the sheltered, were double that held by the exposed, and while the latter contained of potash and soda, only .08 per cent. the former had fully *two* per cent.

In the Journal of the Royal Agricultural Society of England, we have a series of experiments all of which strongly attest the superiority of covered manures. From two extensive and carefully conducted trials made by Lord KINNAIRD, we are enabled to make an estimate of its advantages. Twenty acres of a rich loam, naturally dry and in good heart, was selected, divided into two equal portions and manured at the rate of twenty cart loads to the acre. The whole was planted to potatoes, the seed one kind, each receiving the same attention. Planted first and second weeks in April. There was no apparent difference until about the first of July, when the part upon which was spread the covered manure manifested the benefits conveyed by its superior enriching material. The crops were taken up from first to fourth of October, and after careful measurement and weighing of two separate divisions, the result was as follows:

WITH UNCOVERED MANURE			
Measurement.	Tons.	Cwt.	lbs.
One acre produced	7	6	8
do. do. do.	7	18	99
WITH COVERED MANURE.			
Measurement.	Tons.	Cwt.	lbs.
One acre produced	11	17	56
do. do. do.	11	12	20

As soon as possible after the potatoes

were harvested the field was plowed and wheat drilled in at the rate of three bushels per acre. In the spring a dressing of three hundred weight of peruvian guano per acre was applied to the whole field. Shortly afterward the wheat on that portion manured by the covered dung took the lead, and retained it during the entire summer, ripening four days the earliest. Each portion was cut and stacked by itself. After threshing, the same careful sub-division and measurement was carried out, and the experiment resulted as follows:

WITH UNCOVERED MANURE.			
Product in grain.	Wt. per bus.	Product in straw.	
Acre. Bush. lbs.	lbs.	Stones.	lbs.
1st. 41	19	61½	152 of 22
2d. 42	38	61½	160 of 22

WITH COVERED MANURE.			
Product in grain.	Wt. per bus.	Product of straw.	
Acre. Bush. lbs.	lbs.	Stones.	lbs.
1st. 55	5	61	221 of 22
2d. 53	47	71	210 of 22

The advantages to be derived from the use of manure with which proper care has been taken can easily ascertained by the above figures, and the subject should receive from the American farmer the attention it so richly merits.—*Rural New-Yorker.*

A CATTLE FEEDING ESTABLISHMENT.

We have an engraved plan of feeding establishment, with estimates of cost, etc., from our friends of the Little Giant family at Cincinnati. Unfortunately the cut is too large for our page, and we must content ourselves with only giving the argument of the projectors, who say:

A building with all the fixtures, viz: corn crusher, cooking apparatus, cistern, piping, water troughs, feed boxes, truck-wagon, etc., in the most complete order for feeding one hundred head will cost from \$700 to \$1000, according to price of material at its locality, and not exceeding that sum at any place in Ohio, Indiana or Kentucky.

More or less cattle may be provided for by extending or leaving off the wings of the building. With this arrangement one man with one horse could grind and cook all the feed, and attend to 100 head, and have ample time to keep all the stalls clean and the whole place in complete order.

It is believed that farmers do not appreciate the advantages of cooked food. From experiments made, it is found that two bushels of crushed corn is equal to three bushels in the ear, and two bushels crushed and boiled, is equal to four bushels in the ear. In feeding milch cows, the difference is found to be even greater in favor of crushing and cooking.

80 lbs. of water and 20 lbs. of corn cob meal, will make when boiled 100 lbs. of stiff mush, 20 lbs. of which is a large feed for a steer weighing say 1000 lbs. Three feeds or 60 lbs. of this feed per day, with a small quantity of hay, say 5 lbs., will increase the weight of an ordinary sized bullock at least 300 lbs. in three months, if carefully and regularly cleaned, watered, etc.

The actual weight of meal in this 60 lbs. of mush is 12 lbs. Now suppose 100 head of cattle, averaging 1000 lbs. each cost 2 $\frac{3}{4}$ cts. per pound, or	\$2,750 00
100 head consume 6000 lbs. of mush per day for 90 days, which is equal to 1,574 bushels of ear corn, counting 68 lbs. to the bushel, which at 30 cts. per bushel, costs	476 40
22 $\frac{3}{4}$ tons of hay costs say \$6 on the farm	135 00
Use of horse 3 months	33 33
One man's wages 3 months	90 00
Cost of building and fixtures	1,000 00
3 months' interest on the above sum, at 6 per cent.	67 27
	<hr/>
	\$4,552 20

The 100 head of cattle at the end of 3 months gained 300 lbs. to the head, making in all 130,000 lbs. of fat cattle, worth say 4 $\frac{1}{2}$ cts. per pound	\$5,525 00
From which deduct the whole cost as above	4,552 00
Allow nothing for the building and fixtures, and we find a profit of	\$973 00
Add the building and fixtures, which are worth all they cost	1,000 00
And we find the handsome sum on the 3 months' business in net profit	\$1,973 00

Ohio Cultivator.

PEAT AND PEAT CHARCOAL AS ABSORBENTS OF AMMONIA.

The use of charcoal in stables and barnyards for the absorption of ammonia, is a standing recommendation in several of our agricultural papers—especially of some of the pseudo-scientific journals, which, in spite of the exposition of their numerous errors, still continue to retard the march of agricultural improvement, by publishing statements that cannot fail to deepen that contempt felt by many good practical farmers for every recommendation issuing from the laboratory of the chemist, or the sanctum of an editor. The power of charcoal as an absorbent of ammonia has been greatly overrated. It is true that in the experiments of Theodore de Saussure, charcoal absorbed ammonia equal to ninety times its volume. In other words, a cubic yard of charcoal would absorb about one hundred pounds of ammonia—or equal to the quantity contained in ten tons of ordinary barn-yard manure. The adherents of charcoal as an absorbent of ammonia, base their recommendation on this experiment—forgetting to state one important fact connected with it. The charcoal on which Saussure experimented was heated to redness, and while red-hot was plunged into mercury, and when cool, without being exposed to the atmosphere, was plunged in ammoniacal gas. If charcoal could always be heated red-hot and cooled under mercury, it might be a valuable absorbent of ammonia. But this cannot be done. The charcoal which is used for this purpose, has generally been exposed to the atmosphere for some time before it is used, and its pores are filled with air and moisture. The practical question is not whether charcoal can be placed in such a condition as to absorb ninety times its volume of ammonia, but whether it will absorb it in the condition in which it is usually employed. On this point recent experiments throw much light.

Allen and Pepys found that beech wood charcoal increased in weight, by a week's exposure, 16.3 per cent. The matter absorbed consisted principally of watery vapor, which is greedily imbibed by newly made charcoal. It follows from this that charcoal mixed with the soil, or exposed to the air, would soon become saturated with moisture. It has been supposed that ammonia would displace water in

charcoal, but the experiments of Prof. Way have led him to a different conclusion. He says:

"Great misconception exists in regard to the powers of charcoal. Charcoal is known to have the power of absorbing ammonia and other gasses, and that to a very considerable extent; it is taken for granted, therefore, that its power exists equally under all circumstances; but such is not the case. It absorbs ammonia, by virtue, principally of its great porosity—by a kind of surface attraction—an attraction possessed by all solids for gasses, and having relation of course to the quantity of surface—hence, charcoal, in common with all porous bodies offering in a given weight a large amount of surface, has a great absorptive power for gasses. But this power is also possessed in an eminent degree by water—more especially is this the case where gasses largely soluble in water are in question. When, therefore, we treat charcoal saturated with ammoniacal gas, with water, the superior attraction of the water comes into play, and the ammonia is transferred from the charcoal to the solution. In the opposite case, that is to say, when a solution of ammonia is filtered through charcoal, its strength cannot be sensibly diminished. Indeed this fact has been experimentally demonstrated by Dr. Anderson, who published a series of trials, proving the want of power in charcoal to remove ammonia from solution, and I have myself made experiments of the same kind with a like result."—*Journal of the Royal Ag. Society, vol. 15, page 158.*

Dr. Davy has recently published the results of his experiments with peat and peat charcoal as absorbents of ammonia, from which it appears that fermenting urine mixed with peat charcoal, lost three-fourths of all the ammonia it contained, while the same urine mixed with the same peat *not charred*, lost no ammonia by several days exposure to the atmosphere.

"These experiments," says Dr. Davy, "show that peat charcoal (contrary to the many statements which have been made by its advocates,) has very little power of absorbing and retaining the ammonia of excrementious matter when mixed with it; whereas, peat possesses this remarkable property in an eminent degree, and absorbs and retains it in a most striking manner." *Genesee Farmer.*

COOKING FOOD FOR STOCK.

MESSRS. EDITORS:

The remark of a late correspondent, that "when the practice of cooking food for our animals becomes as customary as for ourselves, the thing will be done upon principle," induces me to hand for publication the following statements, extracted from a work now before me, as having been verified by carefully-conducted experiments by Mons. Reaumur, that might aid essentially the labors of those who may consider the undertaking both rational and natural—a class, that I confess much inclined to join myself to. It is said, with the view to the feeding of poultry on cooked food—

Mons. Reaumur caused four pints of each of the six grains following to be boiled until they were well bursted, and he found that the increase of bulk of each sort was as follows:

4 pints of oats, after boiling, filled 7 pints.			
4 do. barley,	do.	do.	10 do.
4 do. buckwheat,	do.	do.	14 do.
4 do. Indian corn,	do.	do.	15 do.
4 do. wheat,	do.	do.	10 do.
4 do. rye,	do.	do.	15 do.

Rice was not tested, but swells much more than either of the above: it is seldom, however, used for the above purpose.

On experiment, it was found that poultry were not uniformly partial to boiled grain, although occasionally a preference was shown for it; nor did it appear that they entertain a decided partiality for one species over that of every other; wheat, however, being sometimes preferred and rye disapproved of; it therefore follows, that we might make choice of that grain which happens to be most plentiful or cheapest, always excepting rye, which must not be used unless other sorts cannot be had.

Other experiments were made, to ascertain whether there be any economy in feeding with boiled grain, and this was done by knowing, first, how much dry grain sufficed for one or more fowls, and then boiling the same quantity, and trying how much in that state would suffice for a meal. The result was as follows: Rye, although so very considerably increased by boiling, instead of being more satisfying, becomes less so, more of it being consumed when boiled than when dry. Oats, although increased by boiling nearly one-half, are not, on this account, more satisfying for poultry,

which, if in two days they will consume four pints of dry oats, will, in the same period, eat seven pints when boiled; so there is no economy in the additional trouble. Mowbray is of the opinion that oats scour, although they are supposed to promote laying, and are in many places used for fattening. Buckwheat swells still more than oats by boiling, but poultry will consume fourteen pints boiled, in the same space of time that four would be sufficient, and it is thought to be an unsubstantial food. But Indian corn is more profitable when boiled than raw, the saving being one-third, or near it; while the fowls which ate two pints of barley in its dry state, consumed but three pints of the boiled grain; therefore, as ten pints of boiled barley are produced from four pints of dry grain, the experience in dry barley is to that of boiled, as ten-fifths to six-fifths, or as ten to six, or five to three; amounting to a saving of two-fifths by giving boiled instead of dry corn; thus it is far more profitable and effective when boiled than raw, and, if fed to the poultry while warm, it will hasten materially the period of laying, promoting in a high degree the health and thrift of all kinds of poultry. Wheat, as shown in the above table, increases in bulk on boiling, nearly the same as barley; and these experiments go to show that the use of boiled wheat, barley and Indian corn is a matter of economy, while on the contrary, in the boiling of oats, rye, and buckwheat, you have the loss of fuel, time and trouble, out of pocket.

These things are worth remembering, especially at the present time, when the fattening of poultry is carried to so great a length, our steamboats and railways requiring such quantities to feed their passengers, poultry being, in so many ways, the standing dish of their public tables. For the *keeping* of poultry before fattening, no food is at all to be compared to boiled potatoes, mixed with a small portion of *boiled* barley, the process of which is very much expedited, if the grain is broken in the mill before cooking; but in that state it will require stirring while boiling, to prevent it from burning.

It is found by actual experience, that there is no saving in the substitution of bran for grain; some persons take the trouble to boil this, but it does not even

increase its bulk, and not at all its quality. Two measures of dry bran, after boiling, will not go so far as one measure of *boiled barley*, thus showing a striking difference in favor of barley, even in point of ceremony. *Boston Cultivator.*

QUALITY OF MILK.

How much milk is required to make a pound of butter, is a question often asked. From the statements herewith submitted, it appears that the average quantity of milk of five different cows required to make a pound of butter, is $9\frac{1}{4}$ quarts. The quantity varied from 8 to $11\frac{3}{4}$ quarts to the pound.

We have heard that a pound of butter has been made from 4 quarts of milk, and have heard likewise of cows, 14 quarts of whose milk were required to make the same quantity. It is probable that every dairy farmer of common intelligence in the management of his business, has discovered that a certain quantity of milk in the autumn months will produce much more butter than the same quantity from the same cows will in June or July. Will not this fact account in some measure for the great variety of reports we hear from the owners of cows on this subject?

We are of opinion that there may be found in almost any herd of twelve cows, a difference of three or four quarts to the pound in the capacity of their milk for producing butter. To arrive at an answer to this question, there should be a trial made, during one year, in four or five dairies.

From the statements made by the competitors at this time, as also from our own experience and observation, we conclude that a fair average may be nine quarts of milk to the pound.

Is the man to be found in Massachusetts, who has cows for sale, which he will guarantee to give a quantity of milk comparing well with that given by our native cows, the quality being equal to 4 quarts to a pound of butter, the trial to continue through one year? If not, do not such reports mislead those who are seeking to improve their herd of cows by the purchase of the best animals? They may find to their cost that they have turned off better cows to give place to those boasting a distinguished foreign ancestry. It is not

probable that thirteen cows of the foreign breeds can be found in this county, comparing favorably in productiveness with the natives that have been exhibited at the Society's show this year.

There is undoubtedly great room for improvement in our domestic race of cows; and would it not be well for some of our amateur farmers to consider the expediency of appropriating a portion of the money they are now investing in imported stock to raising up an improved domestic or American race of cows, so that in future years their descendants may point to a native and purely American breed, which shall as far surpass the Durhams, Devons and Jerseys, as American Ploughs, Reapers and Printing Presses now surpass those of England and France. [Charles P. Preston, Chairman of the Committee on Cows for the Essex Agricultural Society. *Boston Cultivator.*]

MILK COWS AND ESCUTCHEONS.

When Guenon's theory of determining the value of milk cows, by the growth of hair on its thighs, above and adjacent to the bag, was first introduced, the idea was received with a good deal of scepticism. Time has wrought changes. At a late convention by the legislative club of the State of New York, one of the speakers gave the evidence in relation to Guenon's theory:

"M. Guenon, a French writer, has discovered certain indications which he claims to determine the milking qualities of cows. This he calls "escutcheons," being the hair which grows upwards, (contrary to the general rule, on the udder, thighs, and hinder part of the body. It is easy to distinguish the escutcheon by the upward directions of the hair which forms them. I cannot go into detail here upon the system, but would refer to the work of M. Guenon itself. But to show that it is esteemed worthy of notice, I will allude to the testimony of those who have given attention to it."

Mr. John Haxton, in a work published in 1853, entitled "How to choose a good Milk Cow," in reference to the indication of a good milk cow, p. 178, says, "The writer has examined many hundred of dairy cows in Britain, and the conclusion arrived at in regard to Mr. Guenon's

test of judging of the milking properties of a cow, by the development of the *ecusson*, is that in a very large majority of cases, it is borne out by facts." In a London dairy, belonging to Mr. Riggs, 31 Edgware road, where about 400 cows are kept, and where nine-tenths of them are far above average milkers, the *development* or *upward* growth of the hair on the posterior part of the udder, thighs, and perinæum, was too remarkable to be accounted for by accidental causes. As well might it be said that all other tests, such as length of head, softness and flexibility of skin, and wide quarters, were accidental, and had no reference to the milking properties of a cow. When a phenomenon presents itself over and over again, accompanied in a majority of cases by certain results, we may be certain that it is not accidental, but natural; and while we may be unable to account for these results upon satisfactory grounds, it is neither philosophical or prudent, to deny or ignore the connection between the one and the other, and thus to forfeit the advantages which the fact itself is calculated to afford."

The late Mr. Phinney, of Massachusetts, a very careful and critical observer, made examination of a large number of milk cows, and found in a majority of them that were good milkers, these developments well marked. He conversed with a large number of intelligent gentlemen when he was abroad in 1851, in Great Britain and France, and found but one opinion as to the general character of the animals which possessed these developments. And so far as we have learned the views of gentleman in this country who have given attention to this subject, the result has been the same.

"I think it may with safety be affirmed, that this 'one principle' is established—that all things being alike, as regards shape, texture of skin, &c., cows with well developed escutcheons, will, in a large majority of cases, be found to be the best milkers, and above an average; while, on the other hand, those with very small escutcheons, will be found under, or at most, not above an average in their milking properties.

"In calves the escutcheons show the shapes which they are afterwards to assume. They are more contracted only because the parts which they cover are

slightly developed. They are easily perceived after birth, but the hair which forms them is long, coarse, and stiff. After this hair falls off, the escutcheons of calves resemble those of cows, though of less size. This will enable the farmer to save such calves as will probably serve him as good milkers.—*Farmer and Planter.*

WIRE FENCES vs. SNOW-DRIFTS.

EDS. RURAL:—In your issue of April 5th, I noticed a sketch entitled "Novelties of Farming." Among the things spoken of were Wire Fences, which the writer utterly condemns. Differing in opinion, I have some remarks to make.

Judging from my own experience, I am ready to speak a few words in favor of wire fences, both in regard to their appearance and durability, if properly built. I do not hesitate to recommend them for lane and road fences, as they are a sure preventive of snow drifts. There would be no necessity of widening the roads or making the road tracts near the "east fence," as a correspondent in the same number of the RURAL recommends, were these fences in use. I have a lane that is only 20 feet in width, running north and south, that was of little or no use to me during the winter, until I built a wire fence, and when all the roads have been drifted "to the full," this narrow lane has been entirely free.

My manner of building wire fence I will describe, and think if they were generally constructed in this way they would be something more than "just no fence at all." Set the posts eight feet apart, and strong anchor posts every fifteen rods. Set them two and a half to three feet deep, then put a brace two by four inches from the top of the anchor posts to the foot of the second post beyond, and spike it fast. Place a rail on the top of the posts two by four inches, spiking it, and put a board one foot wide at the bottom: There should be five horizontal wires, size No. 7; the first one four inches from the bottom board, the second five inches above that, the two next six inches apart; the division between these and last one seven inches. This will make a fence four feet two inches high from the top of the rail to the bottom of the board. There should be two perpendicular wires,

No. 13, between each of the posts, wound round the horizontal wires, and fastened to the rail and bottom board. The horizontal wires should be fastened to each post by staples made of No. 9 wire. By anchoring every fifteen rods, the wires do not contract enough to injure the fence, for I have seen it tested. Another great advantage in this fence is, it gathers no wind to rack or loosen the posts. Let others think as they may, I am well pleased with what I have built, and intend to construct 150 rods more the coming summer.

E. H. GIFFORD.
Phelps, N. Y., 1856.

Rural New Yorker.

HIGH PRICES FOR HORSES.

Porter's Spirit of Times, in quoting the sale of "Lexington," from the Louisville Journal, says:

"It is possibly true that Lexington has been disposed of by Mr. Ten Broeck, for \$15,000, but the idea expressed that this is the highest price ever paid for any horse in the United States, is not only propesterous but ridiculous. Delivered here, Priam cost over \$25,000. Rodolph sold for \$18,000!—yes, Rodolph, the humbug. Monmouth Eclipse sold for \$14,000! and was worth about twenty shillings. Post Boy, who was the Northern champion, and run against John Bascombe, (getting jolly well beaten,) was sold for \$18,000! Neither he nor Bascombe were worth "shucks," and neither has been the sire of a winner fit to start for sour butter-milk. At the time of their death, he and Bertrand would have brought respectively, \$35,000, though the latter was the far superior horse, and so proved the fact. Shark and Medley sold for \$10,000 each; the former, when aged, got Mariner, (Fashion's half-brother,) and Medley got?? The first was originally worth, as a stallion, twenty shillings; the second not the powder and shot that should kill him."—*American Vet. Journal.*

Land Paying for itself in one Crop.—The late sheriff of Spottsylvania county, Va., Robt. C. Duerson, sold a farm of 200 acres for \$800. The purchaser put 8 acres in tobacco, which he cured and brought to Richmond, and after paying all expenses, carried home \$1,000.

R. Dispatch.

THE CATTLE TRADE AND MEAT SUPPLY AT HOME AND ABROAD.

The supply of animal food and of fresh meat for our population is an important item of production and trade, and the traffic necessarily increases with the growth of the population, the increasing aggregated masses in large towns, the higher wages now earned by the labouring and manufacturing classes, and the more general diffusion of wealth among the bulk of the people.

The efforts of the graziers, important and progressive as they have been, are quite inadequate to meet the increasing demand, and hence we find that the livestock imported increases year by year. In 1850 we imported 217,247 head of all kinds, while on the average of the last three years, the number imported from the continent has been 326,206 head annually. But it is chiefly in the cattle (oxen, cows and calves) that the increase is manifest, the number imported having risen from 66,462 in 1850 to 97,525 in 1855.

Confining our attention at present to cattle, and using the imperfect data at command, we may enter into a few calculations which will prove interesting at this season. In 1851 the cattle in Great Britain were estimated to amount to 4,500,000. For the present year we have the returns for Scotland and Ireland, which amount in the former country to 974,816, and in the latter island to 3,584,723 head. It is generally considered that about a fourth part of the entire stock is annually slaughtered for consumption, and we may therefore take it at two million head of cattle. It is to the large towns that cattle, live or dead, are chiefly brought for consumption. The number of beasts shown at the Great Christmas Cattle Market has not very largely increased, but the weight and quality of meat are widely different from what they were some years ago. If we take the second important town of the kingdom—Liverpool—we find the cattle trade there of a very large extent; upwards of 1,000 beasts are killed there weekly, besides other stock. The Liverpool cattle market is chiefly supplied from Ireland; the number of cattle and calves imported there by sea, in 1852, amounted to 176,000. In addition to these, large quantities are brought by railway from

Scotland, and a few driven in also from the immediate neighborhood. At Newcastle the cattle brought to market the last few years have averaged about 39,000 head; at Manchester, about 91,000 head; at Glasgow, 32,000; and at Wolverhampton, 25,000 head in the year.

We are speaking only of oxen and calves. In Newgate and Leadenhall markets the supplies of meat now reach about 70,000 tons per annum, whilst throughout the kingdom the aggregate weight of butchers' meat consumed cannot be less than 750,000 tons a year.

Mr. Ormauby, so official on the London and North Western Railway, computed, in 1853, the cattle traffic passing over all the lines of railway of the United Kingdom at 1,253,353 oxen and 181,925 calves, the aggregate value of this stock being over £14,000,000; this is omitting pigs, sheep, dead-meat, &c. In many things connected with food our knowledge is but conjectural, from the want of precise data, or any means of procuring accurate statistics: but whenever correct returns can be obtained, it is exceedingly desirable to place them on record, for future comparison and reference.

Our neighbor France has been increasing her imports of cattle and sheep, for while the number of oxen and cows received in 1854 was 90,946, in 1855 they numbered 113,469 head; so with sheep the increase was from 272,610 to 308,961. There was, at the same time, a large increase in the imports of meat, fresh and salted. The quantity imported in 1854 amounted to 59,805 metrical quintals: in 1855 it had increased to 105,028 quintals.

Although double the number of cattle are slaughtered yearly in France that are killed in the United Kingdom, yet, comparing the weight of meat, the proportion is largely in favor of British cattle. M. de Lavergne, in his recent work on our rural economy, estimates the average weight of British cattle at 625 lbs., and those of France at only 250 lbs. At 5d. per lb. the value of the beef produced in France annually would be but £16,000,000 whilst that consumed in the United Kingdom would be worth more than £20,000,000. One hundred and fifty years ago the average weight of a beast at Smithfield market was not above 370 lbs., now it exceeds 800 lbs.

The gradual increase in the price of meat in France has been very great. From 1700 to 1763 the price of meat for 2lbs. was 5 sous; from 1763 to 1812, 9 sous; from 1826 to 1846, 11 sous; 1846 to 1853, 18 sous; and since that period there has been a further increase of nearly 50 per cent. The government has, therefore, been directing its efforts, by regulating prices and revising the tariff, to keep down prices. Compared with the British prices of meat, those in France are, however, low: but then the quality of the meat is most inferior. The duty on salt meats was also reduced, and larger importations have been made into France. There are about 600 butchers in Paris, and they are under great restrictions. A code of government regulations fixes distinct prices periodically for the various parts and joints of the same carcass.

The average quantity of animal food of all kinds consumed in France is stated, on good authority, that of M. Payen, to be as low as one-sixth of a pound per diem to each person. Even in the cities and large towns, especially Paris, the amount of food upon which a Frenchman lives is astonishingly small. An Englishman or an American would starve upon such fare. In France, in 1840, 3,699,200 cattle and calves were slaughtered. The population of Paris may be taken at 1,250,000.

If we cross the Atlantic, we find the city of New York, with its population of 600,000 souls, consumes on an average half a pound of meat a day to each person, or nearly 49,000 tons of flesh annually. Some returns given in the New York papers state the annual average consumption at 184,826 oxen, 12,014 cows, 543,445 sheep and lambs, 41,844 calves, and 281,051 swine. The number slaughtered in 1853 was 191,766 oxen and cows and 32,738 calves; the beef cattle averaged net about 575 lbs., and the meat fetched 8 cents a pound. In proportion to its population, New York annually consumes as nearly as possible the same quantity of meat as London; more beef, however, is used, and less mutton, and the latter fact may be accounted for by the comparative inferiority of quality. Some of the cattle grazed on the prairies of the Western States are splendid animals. The average weight of each animal of the fine cattle herds usually brought to New York mar-

ket from the Far West is stated to be 1,400 or 1,500lbs.; but some reach nearly double that weight. A Mr. B. F. Harris, of Champagne, Illinois, recently sent to Albany by the Central railroad 34 head of stock, averaging 2,400lbs. In the year 1849, this gentleman stall-fed nearly 1,000 head of cattle, taken in from the rich prairies of that State, and in 1853 he fed and sold a hundred head of cattle which averaged 1,966lbs.; this lot having carried off the first premium at the New York Show. The weight of meat will, however, seldom exceed half the live weight. In New York bullocks are seldom or never put upon the scales to determine the price to the butcher. The average weight of cattle, properly termed "beeves" in the New York market, is now about 700lbs.

In 1855, the quantity slaughtered was 172,000 oxen, and 10,720 cows and calves, and the price of meat was 9½ cents a pound. Philadelphia slaughters about 90,000 head of cattle, and the total number of cattle consumed by the town population of the United States is set down at about 800,000 head, valued at £8,000,000.

The statistics we have given of slaughtered animals presents a startling and sanguinary array of facts of especial interest to the grazier; for we have in the present instance looked chiefly into the cattle trade. Few of us think, as we sit down to our rump-steak or pork-chop, our sirloin or leg of mutton, of the awful havoc of quadrupeds necessary to furnish the daily meals of the millions. If the hecatomb of animals we have each consumed in the years we have lived were marshalled before us, we should stare aghast at the possibility of our ever having devoured the quantity of animal food, and sacrificed for our daily meals the goodly number of well fed quadrupeds of the ovine, bovine, and porcine races.

British Farmer's Magazine.

From the Farmers' Magazine.

WHEAT AND ITS PREPARATION FOR BREAD-MAKING.

Of all the bread-stuffs, wheat is the most important, and is that to the preparation of which the attention of millers is chiefly devoted. It is to the amount of gluten contained in it, and the large per-centage (as compared with the other bread-stuffs) of flour obtained, that wheat owes its val-

ue as a bread-maker. But it so happens that fashion has dictated that the whitest flour is the best, and that the best loaf is that which is purest in color. This, unfortunately, has an evil effect of a twofold character—namely, driving the baker to use sundry compounds, to obtain this fictitious appearance, which pure wheat-flour, be it noted, does not possess; and the makers to get rid of that portion of the wheat which happens to be more nutritious than that which is retained; this riddance being effected at considerable cost, through the agency of expensive machinery, which to a certain extent enhances the cost of the flour. The result of ordinary grinding is twofold—flour and bran. The former is that which is retained; the latter that got rid of, given to the pigs, or used in some way or other, but not in conjunction with the flour. This bran, which forms a large percentage of the wheat, is, according to Professor Johnston, (see "Chemistry of Common Life," vol. i., p. 99) "somewhat more nutritive than either the grain as a whole, or the whiter part of the flour. . . The whole meal, by simply grinding the grain, is equally nutritious with the grain itself. By sifting out the bran, we render the meal less nutritious, weight for weight; and when we consider that the bran is rarely less, and is sometimes unavoidable more, than one-fourth of the whole weight of the grain, we must see that the total separation of the covering of the grain causes much waste of wholesome human food." The same authority gives a series of illustrations showing the structure of a grain of rye, which in constituents very closely resembles that of wheat; from which it may be observed that the gluten of the husk, or that which forms the bran, is found in the interior covering, the exterior covering containing little of this essential. By removing this outer covering, the grain will yield purer and whiter flour than when it is left. Hence the attempts which have been made to effect this, previous to the grinding, or the preparation of the corn or grain in such a way that the process of grinding detaches only the worthless and coloring, and leaves the nutritive part. It is to the description of a plan on the latter principle, that we propose to devote a few remarks. The plan alluded to forms the subject of a patent granted recently to

Nicholas Auguste Eugene Millon, and Leopold Moulin, of Algiers, Africa, for "certain improvements in the treatment of corn and other grains, and more especially in all that concerns washing, drying, grinding, curing, and preserving them." The remarks by M. Moulin, both in the specification of the above patent, and in a pamphlet published by him, are so pregnant with hints and suggestions on the above important subjects, that we trust no excuse is necessary for here offering a digest or resumé of them. It may also add to their interest when it is stated that the process is peculiarly applicable to the grinding of "hard wheat"—a variety of wheat containing a larger proportion of gluten or nitrogenous principle than soft, but which our millers have not yet been able to treat with the same degree of success which is obtained on the Continent, where, be it observed, the flour obtained from it is of a finer quality, and brings a higher price, than that obtained from soft wheat.

In the preparation of good sound flour, the cleaning of the wheat from all extraneous particles forms an important part of the process. On this point the patentee remarks—"The mechanical cleansing of wheat, if performed as it has been up to the present time, leaves much to be desired. The foreign matters which the atmosphere contains incrust the surface of the grain, and deposit destructive germs on it. In certain countries the corn, which is trodden upon the ground under the feet of horses or mules, gives a grain less clean and pure; and if to these alterations in the grain all those which develop themselves during its preparation and its transport be added, sieves and ventilation will be greatly wanting. On the other hand, in consequence of the mechanical cleansing, the skin of the grain is not thoroughly detached in grinding, and the large pellicles of bran which it produces carry away the visible parts of the nutritive matter of the grain." In view of this, washing the grain has been recommended; this, however, is attended with dangerous results, if not properly managed, and the thorough-drying immediately carried out. But this drying of the grain is, even under the most favorable circumstances—with good and economical arrangements—a most expensive and te-

dious process. The rapid clearing of the moisture from the surface of the grain—for under no circumstances should it remain long enough in the water to allow it to penetrate the interior—is effected by the patentees by the use of the “hydro-extractor,” or “centrifugal machine.” A short description of this machine, and its mode of operation, will be found in the article on “Grain Drying.” But the grain is not thoroughly dried; it still remains to a certain extent damp. This, however, is no disadvantage, but, on the contrary, brings about a condition of the grain of the utmost value in the after-grinding processes.

In the treatment of *hard* wheats, it is necessary to damp or moisten the grain previous to grinding, the object being to soften the outer integuments, which in the grinding becomes detached; if this is not attended to, its adherence results in a large portion of the nutritive portion of the husk coming away with it. In the damping, the grain receives at its exit from the hopper a small jet of water, which raises its weight some one or two per cent. This wetting, however, does not cleanse the grain from all extraneous matters, as is desirable; on the contrary, it rather tends to make them more adherent. Again, the damping is very irregular; and to enable the moisture to spread from the parts of the surface well wetted to those dry, or comparatively so, the grain is allowed to remain for a certain period in sacks, until a uniformity of dampness is obtained. All this is, as will be obvious, very uncertain; and the result frequently is that the wet penetrates to the interior and makes damp flour. Where the dampness or moisture reaches to, or exceeds, 20 per cent, the grinding cannot be carried on. Now, by washing the grain in properly-arranged apparatus, and immediately putting it into the “hydro-extractor,” not only is it thoroughly freed from all extraneous and deteriorating particles, but the amount of necessary moisture required is regulated to a considerable degree of nicety. Nor is this all; the most important results remain to be described. “When the grain which has been in the cylinder (hydro-extractor) in the condition which we have just defined is taken to the mill, its products present the following modifications: The water which has

principally damped the external and woody pellicle of the skin, detaches it, and makes the ordinary bran; the grinding allows the small slight transparent scales to escape, and of a lightness never attained hitherto: this is the entirely woody and cortical portion of the skin. The principal azotes so abundant in ordinary bran, exist here only in a very reduced proportion. It is the same with the aromatic and sappy matters. This bran retains no trace of farina; by a microscope even, some nutritive grains can hardly be discovered. For the same reason that the results are so perfectly accomplished, the proportion of the superior products of the grinding is increased also: besides, the bran, which acquires a greater elasticity, does not break; the flour and the groats become free from impurities; the double result is obtained of having the products finer and more abundant.” But another valuable result is obtained by the principle of “essorage,” as it is termed by the inventors (from *essoreuse*, the French name of the centrifugal machine.) On washing the wheat until the water runs off clear, it may be considered free from impurities; but on being subjected to the action of the hydro-extractor, “a thick and colored liquid is expressed, which on evaporation yields a considerable residue.” This extraction of coloring matter shows that a purifying effect is due to the centrifugal force, detaching from the surface of the grain matter which escapes the longest washing. Even the coloring matter which lodges under the epidermis of the integuments is carried off; how much more likely, then, are the obnoxious particles on the surface of the grain to be removed!” This purification the inventor thinks of great importance in the preservation of grain, as he has observed that grain essoraged, even although damped with the water, has kept longer and better in bags and close vessels, than grain not subjected to the process. This is in itself a most important result. It is also applicable to the restoration of unsound grain. M. Millon mentions that barley refused by horses, has been eaten by them with avidity after a small cold washing and passing through the *essoreuse*.

We have already shown that the bran, the product of grinding on the ordinary plan, contains a large proportion of glu-

ten. M. Millon, in a table in his pamphlet, gives some interesting details respecting the value of the bran the result of essoraged and non-essoraged wheats. Thus, the large bran of hard wheat, watered, winnowed, and ground on the ordinary plan, gives a per-centage of 12.32 of gluten; the same essoraged, only 6.17.

The grinding must follow the essorage immediately, "or it loses its peculiar properties, we have discovered in hot weather fifteen to twenty minutes will be sufficient for the skin to become again adherent; it must then be submitted to the action of the drying cylinder and the grinding."

In the application of the process to soft wheats, M. Millon is inclined to believe, from the sponginess of their inter-integuments, that their absorbing powers will be greater than hard, and that a preliminary drying will be necessary. When the wheat, whether hard, semi-hard, or soft, contains a large per centage of water, drying will be necessary before the essorage can be effected. Again, where it contains insects, mouldiness, or other deleterious matter, they should be got rid of by repeated washing, and the extra water reduced four or five per cent, by passing it through a drying apparatus.

We do not consider it necessary to describe the washing apparatus, the drying apparatus, or the hydro-extractor used by the inventors: our object has been to direct the attention of our readers interested in the matter to a principle which we consider contains much that is valuable, both as regards the *preparation* and the *preservation* of grain. R. S. B.

THE AMERICAN HARVEST.

For many reasons British farmers take a lively interest in the progress of the grain crops of the United States. First, because a large proportion of our agricultural labour is annually abstracted, to till the newly cleared lands of the United States; secondly, because we always receive some portion of our food supplies from America; and, thirdly, because the large interchange of produce and manufactures renders a prolific harvest on the other side of the Atlantic an earnest of increased orders to our manufacturers and merchants, and gives additional employment to British and foreign tonnage.

Last year 1,278 ships, registering nearly one million and a quarter of tons entered our ports from the United States; and as many, or more, cleared out. In the same period 270 British-owned ships, measuring 167,586 tons, also entered our ports from the United States; and

417 vessels, of 297,717 tons, cleared out for American ports. Furthermore, from 6 to 6½ million cwt. of American cotton is yearly required for our mills, while we only receive about one million and a-half from other sources. For another article of large consumption—tobacco—we also depend chiefly upon our American brethren; for of about 39½ million pounds of manufactured and unmanufactured leaf imported in 1855 nearly 38,000,000 came from America. We also draw from thence large supplies of cured provisions, breadstuffs, and products of the forest. We had occasion, a couple of months ago, to enter into the statistics of the American flour trade, and we have now sufficient reliable data before us to go into details as to the late wheat harvest there, and the general produce and export of breadstuffs. American estimates, both before and after harvest, are generally much inflated, and so widely irreconcilable that it requires very careful analysis to generalize and arrive at any safe deductions. The most extravagant reports of the wheat crop were put forth last autumn, and estimates ranged from 175,000,000 to 230,000,000 bushels; while some writers were sanguine enough to suppose that the United States would have about 125,000,000 bushels to spare for export!

The total wheat shipments, in bushels, including flour, figure as follows during the last 8 years:

Year ending June 30.	To Great Britain. Bushels.	To all Foreign Ports. Bushels.
1849,	5,841,855	12,068,109
1850,	2,170,811	7,535,901
1851,	5,616,498	12,438,400
1852,	9,709,827	16,691,235
1853,	10,514,573	18,494,731
1854,	16,189,508	28,148,595
1855,	1,344,775	6,821,584
1856,	18,000,000	26,314,759

The shipments of flour have continued pretty steady; but reducing the whole to wheat, the exports this year are less than in 1854 by about ten per cent.

Instead, therefore, of about 125,000,000 bushels of wheat to spare for shipment, the American imports will only reach about 30,000,000 bushels this year, although a decline in prices has somewhat stimulated shipments lately. While rates in this country have kept up remarkably well, there has been a fall of fully 33 per cent. in prices on the other side of the Atlantic. Flour, which in 1855 fetched 7d. 8c. to 8d. 5c. per brl., this year only realizes 5d. 7c. to 6d. 10c., and the decline in wheat is from 2d. 20c. per bushel last year to 1d. 30c. to 1d. 60c. per bushel this year. Twelve per cent. of the crop of wheat seems to be about the average shipments that can be looked for usually from America. Wheat is much more generally used in the States than formerly, the consumption being now fully 120,000,000 bushels;

so that even with a crop of 150,000,000 bushels there would be little more than 30,000,000 bushels for export—the amount shipped this year.

A careful review of the statistics of production for the last few years shows that vegetable food has not increased in the United States in proportion to the additional population; and, therefore, the unlimited power of America to supply Europe with food must be looked upon in a qualified sense. Two facts may be urged as a reason for this, namely, that the manufacturing and commercial classes in the States are increasing in a more rapid degree than those engaged in agriculture, and the town populations are also fast out-numbering those of the country and rural districts.

Comparing the decennial returns we recently published, the ratio of production of wheat had only increased 20 per cent., while the population in the same period had increased 36 per cent. Indeed there was a deficiency shown in all the crops except maize—that is, there was less raised than there should have been, in order to make the amount correspond with the increase of population. A large quantity of Indian corn (some 15 to 20,000,000 bushels) is annually used for making whisky, which does not enter therefore into food at all; and a considerable quantity is also consumed for fattening hogs and feeding other farm stock. Maize seems, indeed, to be the only great and reliable American staple in breadstuffs, which keeps up and goes beyond the increase of population.—From 1840 to 1850 the crop improved 57 per cent., from 377½ million bushels to 592,000,000 bushels; and it has nearly doubled again in amount since then, the probable crop this year being about 800,000,000 bushels—worth, at half a dollar a bushel, more than £80,000,060 sterling.

Two-thirds of this, immense yield will come from the Ohio Valley and its prolongations, embracing Western Pennsylvania, Western Virginia, Ohio, Kentucky, Tennessee, Indiana, Illinois and Missouri. For the last two years the United States have exported 7 to 8 million bushels of Indian corn annually; in 1848 the shipments were about double that quantity.—Should the habit of consuming Indian meal become general throughout Western Europe, like that of potatoes and tobacco, the export of this grain might be largely increased. There are few parts of Europe in which Indian corn can be grown, and therefore the main supply must always come from America. The soil and climate of every cultivated part of the U. States seems to be admirably adapted to the culture of one or other of its numerous varieties, the short and intense summer of the North being sufficiently long to mature the short-stalked and yellow-grained species; while the longer season of the South ripens the tall and white-grained corn, in general use in the lower latitudes.

It is considered probable that at no distant period the United States may be able to export annually 150,000,000 of bushels of Indian corn, which would realize about £20,000,000 sterling, and prove a greater source of wealth than the golden harvest of California. When we reflect upon the fact, that the production of this grain in the States has nearly trebled in fifteen years, there is nothing unreasonable in anticipating that it will find a more extended market in other countries as it is brought into more general use. The price has fluctuated very considerably in the last 7 or 8 years, having been as low as 27 cents per bushel in 1849, and as high as 95 cents last year; while now the quotations are about 61 to 62 cents in New York.

We do not anticipate that Russia will be able to supply much wheat to Europe for a year or two; the drain on her population by the late war—the havoc committed on the Black Sea shore and the Sea of Azoff—the withdrawal of effective labour for military display, and to swell the ceremony of the recent coronation, will materially check production, and retard the progress of cultivation. The Danubian provinces may, however, still have a surplus to export; but France, Prussia, and other countries will look there for supplies, as the harvest of the Peninsular is very deficient.

The great irregularity of prices is one of the drawbacks to the extended culture of wheat in the United States, which cannot, like Indian corn, be turned into cattle and hogs for export.

Available labour, probable demand, and remunerative prices are essential elements of consideration in the calculations of the cultivator; and as the agriculture of a country cannot be changed in one or two years, it seems evident that we must not depend on America for any larger amount of wheat supply.

We require, on the average, about 3,000,000 quarters of foreign wheat to make up our supplies, and as much more of other grain, besides about 3,000,000 cwt. of flour; and it is doubtful whether the United States can furnish us with the quantity, unless prices are more remunerative. The nearer markets of the Baltic and the Black Sea will probably in subsequent years still be drawn upon pretty freely.—*British Farmer's Magazine.*

From the Valley Farmer.

HINTS TO HOUSEKEEPERS.

The short meats of the hog killing have now been mostly used. Western farmers, by way of economy and variety, about this time kill their beeves. It is likewise the general custom of such gentry, to place the meat-house and its stores in the care of their *helpmeets*. Remember the dismay with which we entered on our first service in this department, we submit a chapter on Beef, trusting it may be a grateful contribution to the wives of our enterprising young farmers; although it may

have but the value of waste-paper to the initiated and notable.

We will compliment the lord of the manor with the presumption that a beef of just maturity, well fattened and nicely butchered has been provided. If so, the outside will be covered with an inch thick coat of fat, white as cleanest wool; the flesh smooth-grained, light red and tender to the touch. And now while the "gude mon," or some experienced hand proceeds (not with the old axe and kitchen-knife but with cleaver, and saw, and proper blade,) to cut up the carcass into smooth, presentable pieces, we will go with the young mistress and the maid of all work, or many maids of work, to care for what is loosely termed the offal, something that, with us, is frequently thrown to the dogs, but will be found on the tables of high life constituting an indispensable part of their luxuries.

The Gall should be emptied into a clean bottle. It is a good application for bruises, cuts, or sores. A spoonful put into a bucket of water in which clothing of fading colours can be wet, will set the dye permanently.

Rennet.—This is the beef's stomach: it should be emptied, washed clean, in cold water, wiped dry, covered with salt, and stretched on sticks to dry, in a cool place: or, after salting, rolled up, wrapped securely in a cloth and hung up in a dry, cool place, ready for cheese-making.

The Liver and Kidneys are used for boiling, frying, or stewing. The liver can be sliced off as needed. The kidneys should be split and soaked in salt water an hour or so before cooking.

The Heart.—The ventricles should be removed—it should then be thrown into water for a night; after which it may be stewed or stuffed and roasted as a fowl, or prepared with the tongue, either for mince-meat or smoked with the tongue and used as a relish.

The Tongue should be washed clean and wiped dry; then to one pint of salt add one tea-spoonful of salt-petre, one table-spoonful of cloves or alspice, two table-spoonfuls of brown sugar; rub the tongue (and heart if desired) well with this every morning for a week, and smoke afterwards incessantly for a couple of weeks more. Both tongue and heart may be dropped into the barrel of pickled beef for ten days, and afterwards well smoked.

Feet should not be skinned, but having the hoofs removed, be scalded and scraped perfectly free from hair; they may then be washed and soaked in spring water for a day or two, if designed for jelly; but if to be used otherwise they can be kept in salt water, changing it frequently.

Tripe.—The Tripe should be cut open while warm, emptied, washed and spread out so that strong lime may be sprinkled over its inner coat thickly. After a few minutes, the slimy inner coating may be easily scraped off with the back of a knife. The tripe should then be

washed repeatedly, and put into moderate salt water until wanted for cooking. If convenient, soak it for a day and night in buttermilk, and then for the same space of time in fresh water before cooking.

Suet.—Reserve as much of this as you wish for cooking purposes. Wrap it in a clean cloth and keep it in your meal tub. It is shred fine and free from strings, and used for some kinds of pastry—it is sometimes substituted for lard or butter in buiscuit, and makes an excellent pudding. The rest is rendered up into tallow. Cut it into small, thin pieces, and having put a few ladles of melted tallow into the bottom of a clean, large kettle, stew it moderately until the cracknels are brown and mash easily. When cool, strain it at once into vessels to mould, or into a keg for market. If for home use, at any convenient time put your tallow into a kettle which will allow of your putting in it a sufficient quantity of weak ley, in which it should be boiled for an hour—when cold it will cake on the surface, and should be cut out in cakes, scraped free from sediment, and when ready to mould, stewed until it ceases to snap.

One lb. alum and 1 lb. of salt-petre dissolved in six gallons of water, will cleanse tallow by boiling it in the water for an hour.

The cracknels boiled in moderate ley, will yield some tallow worth saving, if they are not needed for soap-grease. The ley process is best for bleaching tallow.

Pomatum is made by rendering beef marrow into clear grease, and straining it; then mix 1 ounce of marrow, 1 gill of oil of almonds, and any agreeable perfume.

Bologna Sausage, may be made of any good, lean parts of the beef. Chop 4 lbs. of lean beef, 2 lbs. of fresh, lean pork, 2 lbs. of suet, well; free from lumps or strings and mix thoroughly. Season with 2 ounces of salt and as much powdered pepper and cloves as suits your palate. Stuff them in beef-skins, nicely prepared; drop them into the pickle barrel for two weeks, and then smoke them well. These are used with or without cooking, and are very common resource for travelers who have to be their own commissaries. Sausages made of beef only, prepared just as pork sausages, form an excellent variety for family use.

Beef Pickle.—To each gallon of water allow 1 1/2 lbs. of salt, 1-2 lb. of brown sugar, or molasses, 1-2 ounce of salt-petre. Boil and skim until it ceases to throw up scum. When cold, pour it over your beef and place a weight on the beef to keep it under the pickle. Boil this pickle over once a month, adding a small quantity of salt and a little sugar, and return it cold over the beef, and you may have pickled beef the whole year without fault.

And now the body of the beef being ready to dispose of, it will not be amiss to remind our young friends that salt is desirable only

as seasoning,—that if used to preserve meat, it but impairs the flavor of what is used as fresh meat, if used in the least excess. While your beef is frozen, or the thermometer ranges near the freezing point, there is no danger of losing it if not salted at all. The soup pieces and steak should not be salted at all before cooking. The roasting pieces, the day before being used, should be rubbed with salt sufficient to season them, as you would a fowl. If your meat is frozen, it must be laid in fresh spring water long enough to thaw it thoroughly before cooking.

The Head, Tail, Shanks, and Neck, are usually used for soup. To those whose habits require soup and fine sauces frequently, it is a good practice to make up these parts into soup-stock, as directed in cook books, and put it up in jars or cans, carefully excluding the air. It can then, on short notice, be served up as plain beef soup, or used as the foundation for any of the fine soups or sauces, of which it is the foundation.

Steaks are best kept in ice in summer, but for any length of time in cold weather, and for three or four days in winter, they may be kept by packing in some vessels about six inches of meal or flour, then spread on a cloth or paper—cover them with a cloth and pack on another layer of meal, and so on until all are put in. The pieces should not be nearer the sides of the vessel than four inches.

Roasts.—The sirloin (which may be kept whole or divided into two or three pieces) and the middle and fore ribs are the choicest pieces for roasting.

The Round is dressed *a-la-mode*, a grand dinner or party dish. It is sometimes used for steak. It may be corned, and is the part used for chip beef. When used for that purpose, it should be cut lengthwise into four pieces,—rubbed every morning for two weeks with the preparation directed for smoked tongue, and then smoked briskly for a month; or it may be dropped into the pickle for two weeks, and then smoked.

The remainder of the beef, if not kept fresh for use, as it may be now, for roasting or stewing, is usually pickled or corned. For either purpose it should be soaked a half a day, wiped dry, sprinkled lightly with salt-petre and laid on a shelf to drain for twenty-four hours. That designed for pickle may then be put in as directed; that for corning should be well rubbed with salt and kept in a cool place.

A half hour is usually allowed to each pound of beef for cooking. But tough beef and bad fires set all rules at defiance.

HETTIE HAYFIELD.



Make the soil rich, pulverize it well, and it will be productive.

THE CONSTRUCTION OF CHIMNEYS.

Much trouble is experienced everywhere with smoky chimneys, but more in some parts of our country than in others. Thus we have been informed by a practical mason residing in Illinois, that no part of his business has bothered him so much as the construction of chimneys for farmers' houses on some of the prairies in that State. He has tried various plans of constructing them, to improve their draft, but during high west winds none of them draw well, and he would like to know the reason why. A smoky chimney is certainly a great affliction, and we pity all those who suffer from such an evil.

One question to be considered in building a chimney is its height. The principle involved in this is, "the greater the height the better the draft." Why? Because, when the column of air is forced out of a chimney by the smoke, the vertical pressure against the ascending smoke, is removed in proportion to the increased height of the chimney.

The testimony of mechanical and civil engineers respecting the chimneys of steamboats, and those of factories, is uniform in regard to an increased draft being obtained, with an increase of elevation, and this opinion is founded on scientific data.

But another principle is also involved in the construction of chimneys, namely, that of maintaining the heat of the smoke or combustion gases, until they make their exit at the chimney top. The ascending force of smoke or heated gas, in a chimney, is just according to the difference of density between it and the column of air outside—the elevation of the temperature of the smoke above that of the air.

By reducing the temperature of the gases in a chimney to that of the air outside, its draft may be entirely destroyed. This explains the cause of retarded draft in new and damp chimneys, and flues, also in tall factory chimneys, in wet weather; the moisture absorbs the heat of the gases rapidly, and reduces their ascension force. The advantages of a tall chimney, may therefore be nullified by the rapid cooling of the gases in it, during their ascent.

There is a variety of opinions respecting the relative area of common chimneys, in proportion to their height, but not a single author that we have consulted gives a rule or rules positively reliable.

We do not know why the chimneys of farm houses on the Western prairies of Illinois render the houses smoky, but we suppose it must be owing to the cold and high winds which sometimes prevail in those regions, cooling the smoke rapidly while it is in the chimney. The chimneys in the West, we infer, are no better built than those in the East. In general their walls are too thin; their interior rather rough; they are not sufficiently protected from absorbing moisture, and they radiate their heat too rapidly. Brick—the common material employ-

ed in their construction—is a tolerably good non-conductor, but very porous. The sides of a chimney should be made as thick as possible, plastered smooth inside, and coated outside, to prevent the absorption of moisture. By thus constructing chimneys of the common height and diameter, and using inverted conical cowls or caps on them, or any of the most common caps, we are of opinion that most of the smoky houses, not only on our Western prairies, but other regions, may be effectually cured.

A wash containing one pound of the sulphate of iron to a bushel of lime, is very excellent for the outside of chimneys.—*Sci. Amer.*

IMPROVING OLD APPLE ORCHARDS.

It may be said that it is easier and cheaper to get new trees from the nurseries. We would not discourage any one from planting young trees of good varieties; we believe that a properly managed apple orchard, of the right sorts, is one of the most prolific sources of wealth upon a farm; but still, those who have vigorous trees of worthless sorts had far better re-graft them than to cut them down, or to let them remain as they are. More fruit can be obtained in a given time from one of these re-grafted old trees, than from a young tree; for it is a well established fact that grafting a young twig upon an old stock has the effect of making it flower earlier than it would otherwise do, in consequence of the accumulation of sap in the old stock becoming beneficial to the twig, and giving a check, at the same time, to its tendency to produce leaves. "As an example," says McIntosh, "if a seedling apple be grafted the second year of its growth on the extremities of a full grown tree, or even on a stock of five or six years from the seed, it will show blossom buds the second or third year; whereas, if it had remained ungrafted it might not have shown buds for ten or twenty years." Another advantage of this mode of grafting is, that the organizable matter deposited in the roots and the trunk of the old tree is thrown with great force into the scions, causing them to make strong and vigorous shoots. The late George Olmstead, of Hartford, Ct., stated in an early volume of the *Horticulturist*, that by re-grafting an old apple-tree—beginning to graft the top of the tree first, and so working down, and completing the process in three successive years—he had obtained from this single tree, in six years from the time he began to graft, twenty-eight and a half bushels of excellent fruit.

There are many old apple orchards in the country, which, though of good varieties, yield no profit to their owners, simply because they have been neglected. Such orchards may easily and speedily be restored to abundant and profitable fruitfulness. Some time before the sap begins to flow in spring, thin out the heads of the trees by lopping off all decayed, stunt-

ed, diseased, crooked, or superfluous branches, but avoid the common error of cutting off large limbs, when it is not absolutely necessary.—Then in the spring, if the orchard has been in grass for some time, put on a good dressing of manure, and plow it under as deep as you can go without disturbing the roots of the trees.—The best way is to throw a thin furrow slice up towards the row of trees turning towards you and finishing in the centre between two rows. The plow can be put a little deeper each furrow as you recede from the trees.

If you have not manure to spare, spread on old leached ashes, at the rate of about one hundred bushels per acre, or half the quantity of unleached ashes; and if a bushel or so of plaster, and ten to twenty bushels of lime were added, so much the better. Let these be harrowed thoroughly in, and the ground worked into as good tilth as possible. Then sow the land to peas, and when in blossom, plow them in. The ashes, lime and plaster furnish all the mineral elements required by the trees—and of which the soil has probably been impoverished by the removal of the fruit—and the peas will supply a large amount of organic matter. By growing nothing among the trees for a year or two, and keeping the ground clean, sowing a non-exhausting crop and plowing it under, the soil may be rendered very rich, and the orchard fruitful.

We have been asked whether Peruvian guano would be good for an old apple orchard, the soil of which is sandy. We have no doubt it would prove beneficial. Peruvian guano, however, though it contains more or less of *all the elements of plants*, is comparatively deficient in potash and soda. Many sandy soils are naturally poor in these alkalies, and the removal of the apple crop from year to year, and of the other crops which are—but should not be—raised and removed from the land, also carry with them large quantities of potash and soda, so that it is probable that, relative to other plant food, these sandy soils on which apple orchards have stood for many years, are deficient of that which Peruvian guano; of all naturally manures, supplies in least quantity. If the orchard could have a dressing of fifty bushels of unleached ashes, per acre, and an equal quantity of lime plowed under early in the spring, and then a top-dressing of two hundred pounds of Peruvian guano, sown broadcast and harrowed thoroughly in, and be then sown to peas, which are plowed under when in blossom, or eaten off, on the land, by hogs, the soil would be more speedily enriched than if the guano had not been used. Still, plowing under a good coat of barn-yard manure, will, in most cases be a cheaper mode of renovating the site of an old orchard than any other plan we can think of.—*Genesee Farmer.*

AGRICULTURAL SCIENCE—MANURING.

It has been taught by Professors of Agricultural Chemistry, and apparently on reasonable grounds, that the very worst way to apply manure was to spread it out on the field and leave it exposed. It was argued that this exposure caused a loss of ammonia by evaporation, hence farmers were taught to plow their manures under as soon as they were spread upon the soil, under the penalty of losing a great deal of their fertilising properties. An essay on this subject, by Dr. Voelcker, Professor of Chemistry, in the Royal Agricultural College, at Cirencester, England, contains statements that will surprise our farmers. He asserts that no loss arises from spreading manure on the surface of a field; on the contrary, he asserts, that if spread upon the field and allowed to lie until it is washed with rains, it is more beneficial than to plow it in at once. When spread out on a field, fermentation is stopped, and volatile matter ceases to escape. In the case of clay soils, he remarks, "I have no hesitation to say, that the manure may be spread even six months before it is plowed in, without losing any appreciable quantity of manuring matters."—This is important information to our agriculturists, if correct.

The foregoing is from the *Scientific American*; but we are pleased to say, that the statement of the "Professor of Chemistry" will not surprise our farmers. The system favored by Dr. Voelcker, is not new here in Pennsylvania, at least it is a good deal older than the Doctor's lecture. It has been pursued here, as we have repeatedly stated in our columns, for a number of years, by our best farmers, who are convinced, by careful experiments, that the application of manure broadcast, in late autumn, to the ground intended for spring crops, is better than any other mode of application. It produces larger crops as a rule, and leaves the land in better condition for succeeding crops. A communication in our paper last week refers directly to this mode of manuring. The *S. A.* is "behind the light-house" for once.—[*Editor Telegraph.*]

SHARPENING OLD FILES WITH ACID.

Make up some strong soap-suds in a pail and steep the files in it for half an hour. After this take and brush them well in the suds to remove all the grease and dirt from the creaser, after which they are to be rinsed in clean soft water. Now, make up in a clean pail or stoneware crock, which is better, an acid liquor composed of one pint of sulphuric acid to ten or twelve of soft water, and stir it well. Put the files perpendicularly in this for an hour, and examine them two or three times during the operation. The liquor must cover the files from the point to the shank. The acid attacks both sides of the file ridges, and eats away a portion of the steel, thus making them sharper. If the liquor is heated, the action of the acid

is more rapid, and intense, but no person should pour sulphuric acid into hot water, as it is liable to spatter out in the face of the person pouring it in. This action does not take place by pouring the acid into cold water. Many accidents of burning with vitriol have resulted to inexperienced persons from want of knowledge regarding this phenomenon. When the files are properly *bitten* by the acid, they must be rinsed in soft water containing some urine, or a little dissolved sal soda; they are finally rinsed in warm soft water and are fit for use.

[*Scientific American.*]

HOW TO CHOOSE FURNITURE.

There should be a correspondence in the furniture of a room. People who have never thought of this, would be surprised at the beautiful effect of harmony in color that can be secured by proper attention. They are pleased, but they do not know why they are pleased. I well recollect the impression made upon my mind years ago by a simple parlor furnished in the most economical manner. The wood-work was painted cream color. The paper was of a small figure, buff and white. There was a sofa in the room. The chairs had mahogany-colored frame and cane seats. There were various other seats made of soap-boxes and shoe-boxes, covered with brown and buff striped furniture calico. The effect was exceedingly beautiful.

"What a pretty room this is!" was the exclamation of almost every visitor. There were but two colors in the room, although there were various shades of them, brown or buff. These afforded an agreeable contrast, and harmonized admirably together.—*Amer. Agriculturist.*

BLACKING FOR HARNESS.

Melt four ounces of mutton suet with twelve ounces of beeswax, and twelve ounces of sugar candy, four ounces of soft soap dissolved in water, and two ounces of indigo finely powdered. When melted and well mixed, add half a pint of turpentine. Lay it on the harness with a sponge, and []ish off with a brush.

ANOTHER RECIPE.—Take three sticks of the best black sealing wax, dissolved in half a pint of spirits of wine; to be kept in a glass bottle, and well shaken previous to use. Applied with a soft sponge.

Another receipt for black varnish is the following:—Best sealing-wax half an ounce; rectified spirits of wine, two ounces; powder the sealing-wax, and put it with the spirits of wine into a four ounce phial; digest them in a sand heat or near the fire, till dissolved. Lay it on warm with a fine hair brush. Spirits of turpentine may be used instead of spirits of wine.

ENGLISH STATISTICS OF SHEEP.

The sheep of the British Isles are believed to number about 35,000,000. England alone possesses about 27,000,000; Scotland, according to the agricultural statistics of 1854, has 4,787,235; and Ireland, in 1853, had 3,142,656. Calculating the 35,000,000 as worth 30s a head, the sheep stock of Britain is worth £52,000,000. About 10,000,000 sheep, weighing on an average, 80 lbs. each, are annually slaughtered for food. This furnishes 800,000,000 lbs of mutton, which, at 6d per lb., is worth £20,000,000 sterling. Professor Low estimates that, allowing for the deficient weight of the wool of slaughtered sheep and lambs, each fleece averages 4½ lbs., and the total annual produce of wool will, therefore, be 157,500,000 lbs. Fixing the value at 1s. 3d. per lb., the total yearly value of the wool of Great Britain is nearly 10,000,000 sterling. Besides this large home growth, about 40,000,000 lbs., are annually received from Australia, and about 10,000,000 or 12,000,000 lbs., from the Cape of Good Hope and British India.—*North British Agriculturist.*

HOW TO CLEAN ANIMALS AND PLANTS OF VERMIN.

The *Agricultor* publishes a letter from M. Raspail, giving an account of a plan for destroying vermin on animals, and also trees and plants. The process he recommends is to make a solution of aloes, (one gramme of that gum to a little water,) and by means of a long brush to wash over the trunks and branches of trees, with this solution, which will speedily, he says, destroy all the vermin on them, and effectually prevent others from approaching. In order to clean sheep and animals with long hair, they must either be bathed with this solution, or be well washed with it. The writer mentions several trials which he had made of the solution with the most complete success, and very strongly recommends it to general use.—*Paris Correspondent of Morning Advertiser.*

A PREVENTIVE.—Many affections, such as bowel difficulties, cramp in the stomach, and the like occur in the night; and persons are often kept awake by an approaching diarrhœa, without knowing what is the matter till it comes on. Many of these afflictions may be obviated or prevented, by simply *lying upon the face*, when the pain or uneasiness occurs. The warmth of the bed, thus applied to the

seat of the difficulty, in the same manner as heat applied in season to the seat of a cold, will completely dissipate it. A knowledge of the above fact has been of good benefit on a multitude of occasions to a person of our acquaintance.—*Prairie Farmer.*

BRITISH STATISTICS OF GUANO AND BONES.

By official returns of the Board of Trade for the first three months of the past year, it appears that in Great Britain the imports of guano, bones, &c., are nearly 100 per cent. greater than during the first three months of 1855.—During the first three months of these two years, the imports were, of

	1855.	1856.
Guano,	35,570 tons.	62,265 tons.
Bones of animals,	5,157 "	9,741 "

Great Improvement in Soap.—The wife of an American agriculturist has been experimenting in soaps, and finds that the addition of three quarters of a pound of borax to a pound of soap melted without boiling, makes a saving of one-half in the cost of soap, and of three fourths the labor of washing, improving the whiteness of the fabrics; besides the usual caustic effect is thus removed, and the hands are left with a peculiar soft and silky feeling, leaving nothing more to be desired by the most ambitious washerwoman.

Powder for Razor Strops.—Take equal parts of sulphate of iron, (green copperas of commerce,) and common salt; rub them well together, and heat the mixture to redness in a crucible. When the vapors have ceased to rise, let the mass cool, and wash it, to remove the salt, and when diffused in water, collect the brilliant scales, which first subside; these, when spread upon leather, soften the edge of a razor, and cause it to cut smooth.

Scientific American.

To Keep a Stove Bright.—Make a weak alum water, and mix your "British Lustre" with it; put two spoonfuls to a gill of alum water; let the stove be cold, brush it with the mixture; then take a dry brush and lustre and rub the stove till it is dry. Should any parts, before polishing, become dry so as to look gray, moisten with a wet brush and proceed as before. By two applications a year it can be kept as bright as a coach body.

Valley Farmer.

From the Ohio Farmer.

THE CULTURE OF DOMESTIC ANIMALS.

Written for the Ohio Farmer, by one of the most experienced Breeders in America.

1—I propose, with as much brevity as is consistent with a close statement of the principles and results involved, to state the conclusions at which I have arrived, after a long and large experience, and after the best information I could obtain, both from living men and from books on the subject of *The Culture of Domestic Animals*.

2—I have been for more than 30 years a practical farmer—though not *exclusively* devoted to that noble calling; having been before I commenced farming on my own account, raised in the country, on a very extensive farm. My operations have been carried on somewhat largely, on a farm of between six and seven hundred acres, in one of the finest regions of the earth.—Every species of domestic animal has been the object of my experiments; but what I have to say will relate, mainly, to quadrupeds, as being the most important. As I design to write anonymously, and as I do not intend to enter into any controversy, I have thought it right to state this much, as a good deal I may say, may not accord with the experience or opinions of others. Perhaps those who will consider what I say, may find it to their interest.—It would have been greatly to my interest, many years ago, to know many things which I can now state with great confidence.

3—Perennial grasses are the true basis of agriculture, in the highest condition of that best employment for man. Grasses which are not perennial, are of immense value, especially as one of the shifts in the ordinary rotation of crops, suited to the agriculture of the great upper or northerly portion of our continent, all of it above the *cotton* line, concerning which crop, and all south of it, I do not speak in this paper. But it is the grasses which are perpetual, that I chiefly allude to, and amongst these, emphatically the *Blue Grass*, as it is called in the regions where it flourishes most. Whoever has limestone land, has *Blue Grass*; whoever has *Blue Grass*, has the basis of all agricultural prosperity; and that man, if he have not the finest horse, cattle and sheep, has

no one to blame but himself. Others, in other circumstances, may do well: he can hardly avoid doing well, if he will try.

4—All these statements imply, that the *handling* of domestic animals is a necessary part of the business of an agriculturist so situated, though their *breeding* may not be. But it is of their breeding and rearing, that I am to speak, rather than of fattening them, and trading in them. That which will grow without culture, is better than that which requires culture; and therefore *grasses* is above all other crops. That which increases in value of itself, over and above all our labor on it, is the best form of property; therefore live stock, properly managed, is the perfection of productive property. Live stock and perennial grasses, are the surest, as well as the most beautiful form, in which man may eat bread from the sweat of his brow.

5—It is ordinarily true, that an acre of land, in *Blue Grass*, will support as much animal life, during the six months from November 1st to April 30th, as during the six months from November 1st to April 30th, as during the six months from May 1st to October 31st. Of course, that which is intended for winter grazing, must not be grazed in summer; and *vice versa*. Moreover, to keep the land clean, and the grass perfect, it must be *grazed clear* once, and but once, every year. Excessive falls of snow, may occasionally disturb the regularity of this reliance, but not much, if at all; for the increase of grass by the snow is a full compensation. This statement is designed to show how it is, that of all parts of rural economy, the handling of stock requires, proportionately, the best agricultural labor, and is attended with the largest and least expensive improvement of the land itself. Of all estates, those that graze the most, are managed with least labor, and enriched with least experience. In the meantime, their profits are great and sure, and their superintendence the most gratifying form of toil.

6—We have witnessed, in the West, an immense change in the value, an immense rise in the price of domestic animals. I need not stop to point out the causes of this. It is enough to say, they are permanent. There is hardly a possibility that prices should fall, even temporarily, to a scale, which all middle-aged men remember as their former ordinary range; and

there can be no doubt that this will, perhaps slowly, but steadily and permanently go higher, in time to come. It requires four or five years to produce the horse for market; nearly as long for the bull, or the cow to come to a tolerable maturity, from the time it was begotten; still longer for the utmost protection of the bullock.—Even the hog and the sheep demand a period longer than any annual crop produced by tillage. The culture of domestic animals, therefore, is the most stable part of our national agriculture—the least liable of all to sudden changes.

7—Let me, however, make one sweeping declaration. All I have said, depends upon your absolutely refusing, upon any pretext, or under any temptation, to meddle with *mean animals*. No doubt, in many countries, the cape goat is a treasure to the poor—a single cape goat to a single cabin. No doubt the miserable scrub cow, which supplies the poor man's children with milk, is most valuable to him. These, and all the gifts of God, are good—all good, there He allots them.—But all the peculiar heritages of poverty, the natural resources of want, are wholly out of place, when relied on as a means at once of increasing in wealth, of developing the resources of national prosperity, and of indulging, in our proper lot, a taste for what is generous and beautiful. Animals of *mean kinds*, had better be let alone, for very few persons are competent to the improvement of a mean kind of animal, and the process is at once tedious, expensive, and uncertain, to the most competent. Animals which are of good kinds, but which are individually mean, had better be let alone also: it is nearly impossible to make them remunerative, and in the mean time, they eat the food and require the care, which would have made better animals highly remunerative. The apothegm which teaches us to *avoid bad company*, does not spend all its force against mean animals of the human race.

8—What I have said in the 4th paragraph, about winter grazing, on pastures of perennial grass, is liable to be misunderstood, as I see, on reading it. I do not mean to say, by any means, that grazing is the *exclusive* condition of the culture of live stock, nor that *winter grazing* is the *exclusive* method of their support in winter. All animals ought to be kept in good

condition always—the extremes of great fatness and great leanness being alike injurious to all, and especially to the young, and to breeders. Grass is the natural, the best, and the cheapest means of doing what is required. AGRICOLA.

TREATMENT OF BROOD MARES.

A common cause of accidents to mares in foal is improper working. This may arise from carting, going in the threshing mill, or ploughing of hard headlands, or still soils, or harrowing land where the horses' feet dip, producing over fatigue or heating the system. Mares, for at least three months previous to foaling should not be carted or worked in a threshing machine, or called to perform any labor involving any shaking or straining of the body. Nor should they be pushed beyond the space they are inclined to stop at when performing even light work. Ploughing, from the draught being steady, and the labor not exciting, is the most suitable. At this kind of work mares may be continued up to the time of foaling, and without injury, provided they are gently treated and regularly fed and wrought. During wet days or even showers, they should not be exposed. If they get wet, they should be rubbed dry, and a warm mash allowed upon returning to the house.

For at least one month prior to the expected period of foaling, the mare should be placed in a loose box. This may be formed in the end of an open cattle shed, provided it is made comfortable by boards or straw kept in position by strong bars and common fence railing. The general absence of a loose house on the majority of farms renders such temporary erections often necessary. The mare should be loose, not tied to anything, and all harness, etc., removed during the night to prevent accidents from cleeks.

If the mare is turned out to a park, previous to or after foaling, it should be to one free of all places dangerous to the foal. Old quarries, deep ponds, ditches or water holes of any kind are dangerous, even if the foal is some weeks old, but more particularly during the first few days after it begins to move about. Nothing is more painful to the feelings of the owner than the loss of a promising foal by accidents arising from causes which might

have been prevented. If no suitable park or paddock is convenient for the mare and foal, an out-house, or still better, an open shed, should be set apart for the mare and foal. Many superior horses have been reared in this manner, which have never been depastured at all.

After the mare shows indications that parturition is at hand, she should be watched, but not disturbed. The most reliable indication is, that at the points of the teats there will be observed a waxy exudation. Sometimes the milk will drop from the teats a day previous to foaling, but generally the gummy exudation is the only symptom. When this appears, foaling will usually take place in forty-eight hours.—The mare is seldom long in labor, and the foal is generally dropped when no one is present. The mare should be disturbed as little as possible. Nature usually, when left to itself, overcomes any difficulty.—Occasionally, however, the foal bed requires to be broken, to allow the foal to breathe. The foal, if strong, will gain the use of its limbs within two to five hours of being dropped. It readily finds its way to the milk vessel. Sometimes, however, this is so tight that it does not readily catch the teats. The dam occasionally, from an over-excitability, prevents the foal from sucking. In such cases, the foal should be assisted by drawing a little milk out of the udder, and kept in a position to suck; and, if essentially requisite, a halter may be put upon the mare to keep her steady for the first and perhaps the second time the foal sucks. If there is a scarcity of milk, the mare should receive bran mashes, boiled linseed, hay, etc., anything indeed to increase the flow of milk. If this cannot be effected, the foal may be reared on cow milk. Two of the best horses we ever reared were so nursed.—Both of these horses, as regards condition and form, were superior. One Clydesdale, entire, was purchased for Ireland, where he obtained several premiums and was a source of great profit to his owners.

As to treatment, we again repeat, the mare should be disturbed as little as possible, and persons with whom she is not familiar should not go near her for the first few days, as the foal is sometimes injured from the state of excitability in which the mare is for several days after foaling, besides sometimes dangerous to strangers

going near her. From the ninth to the twelfth day the mare should be stinted, and, if possible, the same horse as the sire of the foal should be used.

The food of the mare foaling should be soft, to increase the lactic secretion; and, in the absence of green food, which is by far the best, such as is usually given to farm horses, with an allowance of carrot, turnip and hay, with at least two half-feeds of dry corn daily till abundance of green food is obtained. The change from the dry to soft food should be gradual. We may further state, that it is advisable not to put the mare upon grass previous to foaling, as we have known cases where injury arose from this cause.—*North British Agriculturist.*

ON THE SENSITIVE FACULTY OF A HORSE'S FOOT.

The sensitive faculty of the foot is to be found in its nervous and membranous tissues; for it is well known that the hoof, solé, bars and horny frog, are insensible, the medium through which the sense of touch is developed or aroused.

By this wisely planned arrangement, a horse can, with considerable degree of accuracy, ascertain the nature of the ground over which he is travelling, and thus regulate the action and force of his limbs, so as to favor his feet, and lessen the concussion, which if he were destitute of this sense of feeling, must occur throughout the whole animal fabric.

As a familiar illustration of this peculiar sense of touch, suppose a person places in contact with his teeth, a piece of ice, or applies warm water to the same, he immediately experiences a sensation of heat or chillness, as the case may be. This occurs, simply by contact or touch; the teeth, like the hoof and its horny appendages, being devoid of sensibility; yet both have nervous filaments on their interior surfaces. Within the tooth we find the dental nerve, and within the hoof is also found a similar arrangement, only on a more extensive and magnificent plan.—The teeth and hoofs, therefore, may be said to be analogous in function, so far as the transmission of sensibility is concerned, and at the same time they offer a wall of defence and protection to nerves which are too delicate to come in contact with crude matter. Therefore, a horse's hoof

is to the foot, just what the tooth is to the dental nerve.

Some horses, however, appear, while travelling over the road, to be governed by the sense of hearing, as well as that of sensation. Mr. Percivall has remarked, that "blind horses are observed to lift their fore legs in a manner that would indicate they are sounding the ground, after the fashion of a *blind man* with a stick; therefore, they may be said to see with their feet.—*Am. Vet. Journal.*

From the Maine Farmer.

CUTTING FODDER FOR STOCK.

For many years we have used a straw-cutter for preparing food for our horses, but a less time for neat stock. I think we have realized the greatest benefit from giving cut hay or straw and ground provender to our farm or work horses. When the team comes in weary and hungry after a hard day's work, instead of standing up half the night cutting hay and grinding whole corn, (I believe all who are acquainted with feeding and driving horses admit that it is unhealthy to give meal in any considerable quantity with long hay,) it can eat its mess of cut fodder and meal, well mixed and moistened with water, in a couple of hours, and have the remainder of the night for rest and sleep. In the morning a similar mess is put before the horses and soon disposed of; and, as they take but little drink when fed in this way, they are in trim, good condition, well rested, and all ready early in the morning for another day's work. Unlike the horse who has stood at his crib more than half of the night and morning, hard at work, cutting his hay and grinding his corn, requiring buckets full of water to wet the dry mess with which his stomach is crammed. In this condition the team is harnessed, and if put immediately to hard labor, (as the cut fed team is prepared for,) will soon be injured, and ere long ruined.

Our trough (made of pine boards) for mixing feed for three horses, is 6 feet long, 2½ wide, and 2 feet high. Put the hay in and sprinkle about half a bucket of water for each horse, and stir well with a light, fine tined fork, before putting on the meal, as well as after, that the whole may be evenly mixed.

Care must be taken that the trough and

cribs are kept clean, particularly in warm weather, as a little left in them will sour and injure the health of the animal.

A little fine salt, used daily, preserves health, especially in warm weather. Four quarts of cut carrots are frequently fed to each horse at noon, with very little hay and meal.

We feed meal made from corn, corn and cobs, (ground fine,) barley, oats and peas, vetches, wheat bran and shorts, and buckwheat. All do well, and are fed as we happen to have on hand or can procure the easiest. There is a strong prejudice with many, against barley for horses.—Before cut feed came into use with us, barley was mostly given as provender to our horses. Boiling water was put to it 12 or 24 hours before feeding. Barley meal with cut hay is wholesome, and has been the cheapest grain for provender, until within a year or two—the *beer drinkers* having raised the price.

Another advantage in cut feed is, when hay is scarce, the coarsest straw of grain, cut and fed with meal, with or without a mixture of hay, will keep a team at one half or less the cost of hay and grain.—The man (a careful and observing one, too,) who drives my team this winter, and has driven it much of the time for fifteen years past, is decided in the opinion, that in the use of cut feed over long, there is a saving of more than 33 per cent. in expense of keeping,—and a corresponding increase in health, strength, and power of endurance at hard labor.

This may be considered an extravagant statement to those unacquainted with feeding in this way, but I think any candid mind will come to the conclusion that this is not far from the truth, on a brief review of the question. Thus the animal has several hours more each day for rest and sleep. Food prepared in this way is in best condition for the stomach to act upon as to rapid digestion, and the nutriment, when extracted, is ready to be taken by the blood to every part of the body, imparting strength for immediate action.

Quite different from this is the condition of the horse for hard service that has taken double the quantity—as he usually will—of dry hay, then grain or meal, lying in a compact lump in the stomach, with three or four pails of water to complete the distension of the stomach to its utmost

capacity, which is nearly twice as large as that of the horse on cut feed.

Cut food is a preventive or cure for heaves. Some ten years since, a friend of mine had a fine young horse that was attacked with the heaves so badly as to be almost useless for work. The owner but him on cut feed, which very soon restored his wind. From that time to the present, he has been in constant service, and few are the roadsters that can beat him on the road.

But visible or tangible facts are stronger proof than all the conclusions or arguments that can be drawn from such a head and pen as mine. I will mention one, and have done with this part of the subject.—In 1855, I gave away to a friend whom I knew would treat kindly and had but little to do, one of our team horses, 24 years old, that had been fifteen years in our service, and much of the time at very hard labor. He was a kind-tempered, but very high-spirited animal, and what he found to do he did with all his might. (I mention this fact that it may not be said he lived to a good old age through laziness.) This horse was sound in wind, and smooth in every joint and limb, and spirited and active as a colt when he left us. I recently heard from him, carrying a good load over the hills to Bangor and back, "by daylight," a distance of 25 miles out and in.

For hay, we use one of Ruggles & Nourse's machines, with spiral knives, set in cylindrical form, and cutting upon another of green hide. For corn fodder and straw, for cattle, one (I do not know the name of the inventor,) with cast iron cylinders with open slaughts to let the cut fodder go free, which is preferable to the first mentioned, for this work.

Cut fodder is fed dry to our cattle, (as we seldom feed any meal), with wurtzels or ruta bagas, and is usually eaten up clean, with the exception of the coarsest of the corn butts. Some of the dry seasons just past, when our hay crop was short, and we did not like to reduce our stock, we had recourse to mixing straw with hay, even late in the spring, with a little meal in addition to roots. They never left the barn in better condition, and with very much saving of expense.

We have never given cut fodder to our flock of sheep, as we have hand cutters

we can spare, from the help we employ.

My friend, W. D. Dana, of Perry, Washington Co., informs me that Edmund Lincoln, of Dennyville, favorably known to the public for his extensive farm, well arranged buildings, and good management, has his large flock fed wholly with cut feed, to good profit. The flock is kept in the basement of a large building, the hay above, where it is cut and fed down into cribs; and the whole arrangement is so constructed as not to chaff the wool, or in any way disturb them. M. TABER.

Vassalboro', 1st mo., 14th.

From the Farmer and Planter.

CIRCULAR SAWS.

Mr. Editor:—The brief essay I now have to offer you, in conformity with a promise long since made, has remained in embryo for several months; but as the public could derive no benefit from a knowledge of the cause, time need not be wasted with unnecessary apology for its delay.

In discussing the subject under review, I bring to my aid, fifteen years' experience in cutting lumber, and a general knowledge of the various kinds of mills, as well as many of the wheels now in use, without the slightest personal interest in doing *other* than justice to their respective merits, so far as I may attempt to treat of them.

If quantity or quality of lumber to be produced be a desideratum, then a fifty-two inch circular saw, or one about that size, is the very thing, surpassing any other, to accomplish the object. If properly put up and rightly managed, it will cut more than two verticle or crank saws, worked after the most approved manner; it matters not whether they be propelled by the modern reaction, or the old fashioned flutter-wheels, under high heads of water, and driven to their utmost capacity. It is better adapted than any other for cutting all kinds of ordinary sized timber—except, perhaps, ranging timber, in which case a gang of verticle saws, to make a clear finish of the stick at a single through, may be preferable. But this is a question not yet settled fully to my satisfaction. It is true, a circular saw does not cut seasoned timber with the same facility that it does green; but I have not yet

found anything in the shape, or of the texture of timber, that it will not cut with apparent ease. Oak and hickory yield to it nearly as readily as the harder kind of yellow pine; and the knots in the upper cuts of the latter never retard its progress, or cause it to diverge from a true line, like they do the verticle saw. The upper cuts universally work up easier than the lower ones. The circular runs with such velocity that it has not the time or the inclination to fly the track, for a knot, like the verticle saw, which too often adopts the false rule of making "the furthest way round, the nearest way through."

I have recommended a fifty-two inch saw as a maximum size to begin with, but a smaller one will do. The one I am now running was originally fifty-two inches, but has worn down to about forty-six; and yet we encounter very little difficulty in reducing the largest trees into any kind of building material—either scantlings, boards or laths, of any required dimension. If it does not cut through the first time, a little help with an axe will bring off the first slab; then the log must be turned, the face down, and in like manner a slab and plank may be taken off of the next side; this being done, turn down the last made face, as before, and continue the process of taking off, until the timber is so reduced that the saw will cut entirely through it. After the log is worked up, the rough-edge plank may be put on the head blocks and converted into square-edged boards, as wide as their faces will allow, or they may be run into laths. To one unacquainted with the process just mentioned, much difficulty may be found, but it will not be verified in practice. There need be very little waste of timber, as the saw is capable of reducing nearly all of it into some useful material.

Common sized timber is managed differently. The best plan is, to take the first slab off of the side bowing outwards, and the next opposite to it. Then turn down and saw into the required thickness. If the bottom face should not be large enough to keep on the head blocks until the log is worked up, as is often the case, when necessary, turn it over to finish the last line or lines, as the case may require.

One of these large circulars will not

only do double the work of a verticle or crank saw, but do it better, and with a less expenditure of water—if water be used, and rightly applied, as the propelling power. The same may be said of steam, or any other motive. This assertion is sustained by theory and verified by practice.

The circular has an onward motion, nothing retarding it but the resistance of the wood it has to sever. The teeth are so shaped as to *cut* and not *tare* their way, like those of a verticle saw. The latter, being worked by a crank, has to reverse its motion—comes under the law of action and reaction, every stroke it makes; its teeth must break instead of cut the wood they have to remove. The sash, the carriage, the crank, bound down as it must be, all encounter much friction; while every part of a circular mill can be put in motion by the strength of a man. Hence, in the one there is little, while in the other there is great friction, and consequently loss of power. These are some of the reasons to be advanced, illustrative of the superiority of the one over the other. More might be advanced on the subject, but as it is not my purpose to theorize, I will proceed to give facts.

In 1852, I substituted a circular for a verticle saw. Since then, we have doubled our previous operations. The crank saw required steady driving, throughout the day, and often part of the night, to make an average of 2000 feet of square-edged boards; but now, the circular, moderately worked, produces 4000 feet, of a superior article. It is capable of turning out much more, but I have used such figures as we endeavor to work up to. They may look large to a man that knows nothing of the powers of such a mill; but to some others, well acquainted with the operations of circular saws, I am sure they will look small. Be it so; yet, many will be ready to acquiesce in the opinion that it is pretty fair work—especially in hard pine. I have never made the attempt to see how much we could cut in a day. But many a log, 20 feet long, squared to 12 or 14 inches, have I seen run into plank, at the rate of less than a minute per line, including running back and setting.

Two men and two small boys are required to attend to it. They draw in the

logs, saw and put the lumber out of the mill. Another does the stacking away, (so as to be made up afterwards into rafts, and sent down the Edesto, to the Charleston market.) The operatives are all negroes—trained by myself. With the aid of a little supervisory direction, from me, they keep the mill in good condition; and since we have been running the present *one*, I have had less trouble to keep all right, than I formerly had to keep the *other* in working order. Hence, the change has been to me not only advantageous pecuniarily considered, but it has also relieved me of a great draft upon my time, by requiring less of my attention.

The power I use is water, applied to a breast wheel, 12 feet in diameter, and 10 feet long; the maximum head, including fall, is about 12 feet; the head above the apperture is 350 square inches; it is divided in the middle so as to allow of two gates; the wheel is also divided by a middle rim, giving greater strength to it, and each side receives the water from its corresponding gate or shute. The water is let on the wheel by two hand levers, easily worked. The man that controls them, also manages the levers giving direction to the carriage. He opens one gate, letting half the water on the wheel, by the application of his hand to the lever; the saw starts, then, with his foot, he presses down another lever, whereby the carriage is put in motion, and it brings the timber in contact with the saw; the other gate is then opened, in like manner as the first, giving the saw its maximum power; the timber is speedily severed, and then, as the saw clears itself of the labor, the first gate is closed; the motion of the carriage is reversed, by the application of the foot and the hand of the man to the two levers under their respective control; in this way, the carriage is run back, the other gate being closed in the mean time, and all done by the same man. Thus the whole of the water is shut off, during the five or six seconds required to run back and arrange the timber for the next line. This process is repeated, for each line cut, consequently there is no unnecessary waste of water, or unnecessary wear and tear of machinery; the saw, though continuing to run, does so from its previ-

ously acquired momentum. It is geared to make about 900 revolutions per minute, under full speed, out of timber.

On one side of the water wheel, to a strong wooden rim, seven inches thick, are firmly secured ten cast iron segments, constituting a driving wheel, with 140 cogs. This works into a cast iron bevel pinion, with 34 cogs; it being fastened on a wooden shaft, working vertically, and extending to the upper story of the house. On the upper end of the shaft is a cast iron bevel cog wheel, with 70 cogs, driving a pinion of 28 cogs, on an iron shaft, of five inches diameter, working horizontally; and on this latter shaft are cast iron arms, (called a spider,) to which is affixed a wooden drum, seven feet in diameter, which, with the aid of a leather belt, 13 inches wide, and about 36 feet long, the saw is driven. The drum on the saw shaft is of two feet diameter; and these several pieces of gearing give a very satisfactory motion and power to the saw.

The gudgeons to the water wheel ought to be of about six inches diameter, and run on wooden boxes set so as the work to be against the end of the wood. It will be found to answer as well as any thing else, for the parts just named; but the lower end of the verticle shaft should have a socket gudgeon, in which to affix a toe of caststeel, of two inches diameter, and it should be run in a composition step, of hard, anti-friction material. Copper, zinc, tin, and lead form a good compound—the first being about ten to one of either of the others. I am not certain that I am giving the best proportions—perhaps I have over-stated the latter two, but I cannot refer to proper authority just now. The step should be two or three inches deep, so as to resist the lateral pressure of the gearing, which, at this point, is very great. It will only require a few pounds of the composition, for when prepared it should be set in a cast iron saddle and leaded fast. The boxes for the iron shaft had better be of babbet metal. I have found these several materials to answer better for the places I have assigned to each, than anything I have tried. Upon the lower cogs I use water, and on the upper ones tar and grease; which I have found to be the next best lubricator. I prefer wide-faced cogs—

some of mine are five and others six and a half inches—the latter width I think most economical in the end, if not in the beginning.

The mill with all the machinery I have in use, I had made to my own order, in Baltimore; and although prices *then* may not be the same *now*, yet they may serve as data from which to estimate the cost. But iron was lower then than now, and the heavy castings cost me only three cents per lb.

The mill, with 28 feet carriage, 56 feet ways, 52 inch saw, boxing, packing, and shipping, cost,	\$398 00
Castings and machinery for driving it, cost,	160 00
Thirty-six feet belting, at 80 cents per foot, cost,	28 80
	<hr/>
Freight and incidental expenses, (say about,)	13 20
	<hr/>
Total cost delivered in Charleston, So. Ca.,	\$600 00

The mill was made by Messrs. George Page & Co., whom I have found very gentlemanly in their dealings, as well as skilled in their profession as machinists. They also manufacture Engines, and likewise horse-powers for working their mills.

But there is no longer any necessity for going so far from home to be supplied with all the machinery required to work a circular saw. There are establishments in Augusta, Georgia, and Columbia, in our own State, where such mills are now manufactured. Recently Messrs. Glaze & Co., of the Palmetto Armory, having completed their large contract of arms for the State, have turned part of their attention to the building of Engines, circular saw mills, &c., and, if we are to judge their claims to public patronage, from their past success in all that they have heretofore undertaken, we may assign to them a bright future, as well as greater distinction in this newly chosen field for the exercise of their great mechanical talents.

Believing, Mr. Editor, that I have already written as much as you can afford to *press* in a single number of your useful journal, I must defer what I would say of *other* modes of running a mill, of keeping the saw in order, and of many

simple, yet useful matters relating thereto, for some more suitable period, if you should think it of sufficient interest for me to resume the subject.

Lexington Dist., S. C.

P. Q.

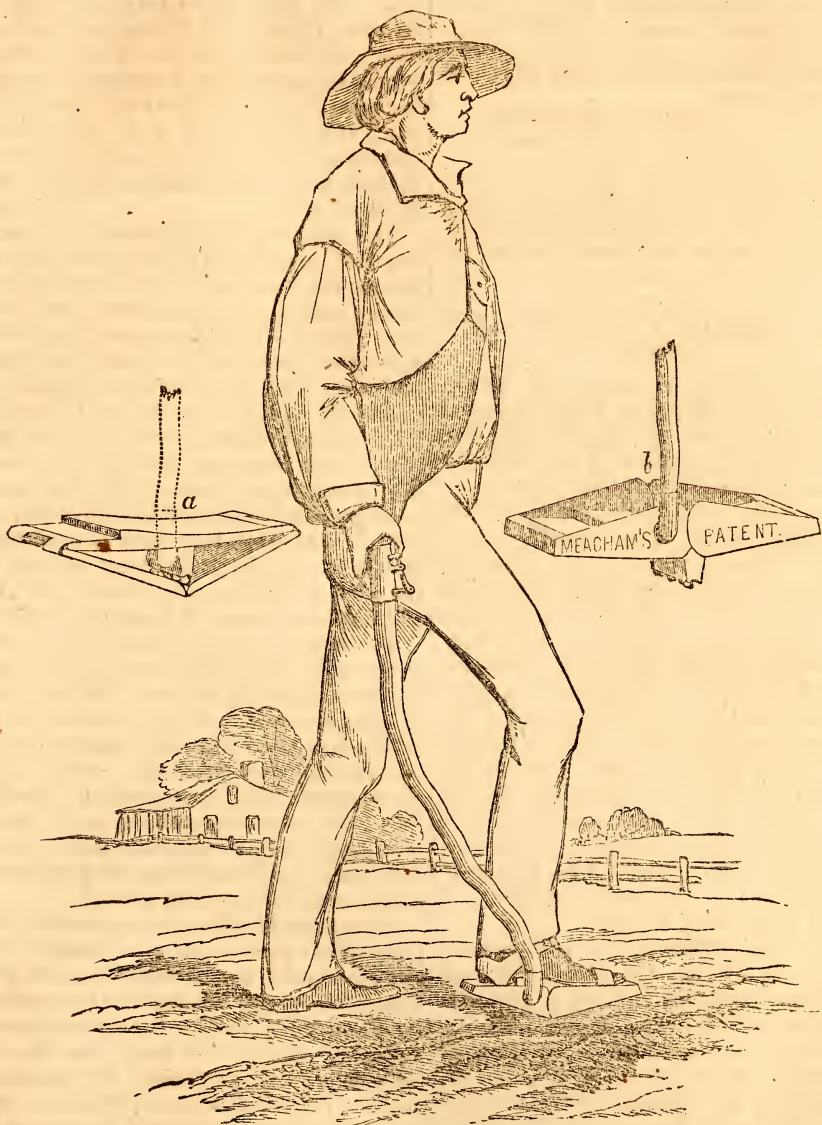
TOBACCO.

It may not be generally known that Tobacco is quite extensively and profitably grown in Connecticut. The variety is somewhat different from that commonly cultivated in Kentucky and Missouri, and is mostly used for making cigars. It is grown upon old land which requires considerable outlay for manure, while it receives more labor in cultivation than is usually bestowed upon the crop with us. A writer in that excellent agricultural paper, *The Homestead*, published at Hartford, Ct., gives the items of the average expense for *manure* and cultivating an acre, which we publish below, with the hope that it may afford some hints that will prove profitable to some of the western growers of the weed:

First plowing,	\$2 00
Thirty half cords manure, at \$1; one-half for present crop,	15 00
Carting and spreading \$14; one-half for present crop,	7 00
Second plowing,	2 00
Preparing ground by harrowing and rolling,	75
Marking out and hilling,	2 50
Cost of raising plants in seed-bed,	1 00
Setting out and resetting,	6 00
Dressing out and hoeing,	9 75
Worming, topping and suckering,	8 00
Ten days cutting and securing,	10 00
Two and a half days use of team in securing,	2 50
Interest on land, (\$150 per acre,)	9 00
Shed room,	5 00
Twine,	50
Eleven days' stripping,	11 00
	<hr/>
	\$92 00

The product per acre was 1790 lbs. The average yield is set down at 1700 pounds, and the highest maximum yield is rated at 2600 lbs. per acre. The crop of the present year is reported to be selling at 12 to 18 cents per pound.

LEMON BUTTER.—Twelve eggs, 6 lemons, 2 pounds white sugar, 2 oz. butter. Rub the butter and sugar to a cream, beat the whites and yolks separate, grate the rinds of the lemons; mix the yolks with the butter and sugar over a slow fire, then stir in the whites, and it is ready for use. Set away until cold; it makes a very nice sauce.—D. J. W.



MEACHAM'S PATENT FOOT CORN PLANTER.

This machine for which a patent was granted June 10th, 1856, is the *first* and *only* machine ever invented for planting corn by the foot.

By this method the weight of the operator is made to perform the whole labor of planting and no time is lost, as one can plant as fast as he can walk.

The feeding apparatus connected to this machine is the most simple and correct of any ever used in planting, as it is entirely under the control of the operator, and is so arranged

as to deposit an equal quantity of seed in each hill, at the option of the farmer.

The machine is attached to the foot by means of a strap, or by a screw to the boot of the operator, and is so arranged as to plant at any depth desired.

The seed is carried in a bag attached to the farmer by means of a strap passing over the shoulder; a tube leading from the lower part of the bag to the machine conveys the corn directly under the plunger which forces it into the earth at every step.

The many advantages of this machine over all others can readily be seen, and their sim-

plicity and cheapness cannot fail of bringing them into general use amongst all farmers.

Price \$3 50.

For machines or County or State Rights, apply to the patentee,

GEO. A. MEACHAM,
290 Broadway.

Offices, 12 and 13, New York.

N. B.—These machines are warranted to plant more corn in a day with less labor than any hand planter, and will plant more correctly than any machine ever invented, and are less liable to get out of repair.

THE AMERICAN SHOVEL.—D. AMES.

In the last century, most of the shovels in use, in the Northern States, were of wood—shaped out by the farmers, and then “shod” or edged with iron or steel, by the blacksmiths. About four score years ago, in Bridgewater, we think, Mr. John Ames, began the manufacture of shovels. He used American iron, and the bars were brought from neighboring forges by his own son, carrying the load before him on horseback—say two bars at a time. The rolling, shearing, hammering, etc. was done at his shop; the handles were made by cabinet-makers. At this period a Mr. Dyke was also engaged, in North Bridgewater, in the same business. During the Revolution, there was a great demand for guns, and Mr. Ames contracted to furnish these to the Continental army. After the struggle was over, he turned his ingenuity to the fabrication of knives and forks, and scythes, then much needed.

It was about 1800 that the youngest son of John, Mr. Oliver Ames—who, though more than threescore and ten, is still hale and active, and at the head of the firm we shall refer to presently—re-commenced the making of shovels at Bridgewater.—He changed his location several times, having his shop in Bridgewater, Plymouth, and Easton, respectively, until 1814, when he settled permanently in the latter town. From 1814 to 1820 he turned out from 8 to 10 dozen per diem. In 1821–22 there were but two shops. A want of water led to an increase of the number; and privileges were obtained, and a shop built in Braintree in 1822, in West Bridgewater in 1829, and in Canton in 1848, carrying nine trip-hammers, and five grindstones, which still belong to the concern, being tributary colonies to the central establish-

ment. In 1845, Mr. Ames took two of his sons, Oliver and Oakes, into partnership. Several of the third generation are employed as clerks and overseers; so that the manufactory is a sort of “family affair,” and is managed with consummate system and skill, and is made, indirectly at least, to produce something besides material wealth.

The village of North Easton, in population and prosperity by far the largest portion of the town to which it belongs, is in Bristol county, about 22 miles from Boston. There is nothing specially attractive about the place, and the editor of “Harper’s Gazetteer of the World” appears to have been ignorant of its chief glory, as it has not a syllable about the shovel factory. As a matter of fact here is a thriving community, of some 2,000 souls, quite homogeneous, comfortable and independent—made what it is, with its cottages, churches, schools, etc., almost entirely by the wise enterprise, and mechanical skill and business talent, of a single family.

The main building of the factory is two stories high, 525 feet in length, with an L 95 feet and an engine room 40 feet, built of stone obtained hard by. Another stone edifice has been recently erected, where ten trip-hammers are put in operation by a steam engine of 250 horse power. Besides these main structures, there are six hammer shops, (all the hammer shops give 24 trip-hammers,) one grinding shop with five stones, and one shearing shop.

It requires 24 different processes to complete a first quality cast steel shovel. All these processes are performed on the premises, except the making of the handles; these, of white ash, are made in Pennsylvania and Maine—the wood from the latter State being preferable for its closer grain. The advantage derived from machinery and the division of labor may be judged of, from the fact, that a shovel is finished in about one hour and a quarter; and, 300 men being employed, shovels are produced at the rate of one in every *fifteen seconds*, or 200 dozen a day; that is, 2,400 shovels in ten hours—720,000 in a year!

There are seven different qualities of shovels—among which is the long-handled, pointed-blade shovel, preferred by Californians. The stock used in one year is as follows:

Best Swedish Iron,	900 tons.
Cast Steel,	400 "
Fuel,	2,000 "
Grind Stones,	85 "
Emery,	18 "
Vitriol,	5 "
Glue,	3 "

The amount of sales, the last year, was \$600,000. The average price of shovels per dozen, is about \$10.

At this establishment are manufactured one-third of all the shovels (six hundred dozen a day) made in the United States. So it is the banner shop, followed at a considerable distance by about thirty other shops, the principal of which are at Philadelphia and at Pittsburgh, Pa.

We look upon the establishment of the Messrs. Ames as something better and higher than a successful business operation, and as having other relations besides its relation to the business world. It illustrates the fact, that the right and enlightened pursuit of individual interest may be truly philanthropic in direct and indirect results, and it symbolizes the progress of civilization. There is that about North Easton which indicates the presence of a positive regard for the welfare of the little community, and a positive public spirit. But without adverting to this, the place is an evidence how the interests of employers and employes are identical, and how all prosper together.—At a rough guess we may say that fifteen hundred persons are dependent upon "The Shop"—and "The Shop" takes care of them all. Some of the operatives have been steadily at work for years, and earned a competence. One man, if he lives till next November, will have been engaged in shovel-making, under Mr. Ames, for half a century; and he has naturally enough, identified himself with the "concern," and feels that his connection with it is something to be proud of. Should his life be spared till he rounds off the fiftieth year of his service, he ought to have a jubilee and a testimonial!

But besides the benevolent working of this free-labor institution—where every man who respects himself may preserve his independence and put the wages of his own toil into his own pocket—it tells also of social advancement. You may despise a single shovel, but when you reflect that more than *two millions* of shov-

els are demanded annually from the makers of the United States alone, the shovel, we submit, becomes amazingly significant.—*Plough, Loom and Anvil.*

CULTIVATING HILLSIDE ORCHARDS.

I have a young orchard of sixty apple and peach trees; the ground is too steep to cultivate, as it will wash during heavy rains. The hole for each tree was dug seven feet in diameter, twenty inches deep, and filled up with top soil. How shall I cultivate them?

If the hillside is so steep that it *cannot* be cultivated, our correspondent will hardly expect us to tell him how to perform an impossibility. His trees appear to have been uncommonly well set out, and it would be quite a loss, if the ground could not be kept mellow and free from weeds and grass, by hillside plow or harrow. An annual crop from the ground is of less consequence than the orchard.

In accordance with the very general opinion among careless cultivators, that fruit trees must take the last chance on the farm, although they cost more and will return more, than almost any thing else that the farmer can raise, we often hear the advice to plant orchards on steep hillsides, or in rocky ground, "*where nothing else will grow.*" Our advice is invariably just the reverse—put the orchard and fruit garden on the very best piece of land that can be had, and where the trees can be easily and constantly cultivated.—An orchard on rich, well-tilled ground, will grow at least *ten times* as fast, as on poor neglected ground; so that, if thirty years are required to bring the latter into tolerable bearing condition, *three years* will accomplish the same amount of growth under the best management. If we had a young orchard planted where it could not receive the best tillage, we should immediately remove it to a more favorable position.—*Country Gentleman.*

Wheat in East Tennessee.—The Knoxville *Whig* states, that from the personal observation of its editor and others, it is thought that from the amount of wheat sown, and its fine appearance, that there will be more than three millions of bushels produced in the thirty counties of East Tennessee the next session, should the weather continue favorable.



SHORT HORN BULL HIGHLANDER, No. 579 A. H. B., AT 16 MONTHS OLD.
The property of Mathews and Sanders, Wythe County, Va.

PEDIGREE.

Highlander, 579, A. H. B., red and white, bred by Abram Renick, Clarke Co. Ky., calved November 14th, 1853, the property of Mathews and Sanders, Wythe Co. Va., got by Renick 903, out of Flower by Young Comet Halley (1134), gr. dam Miss Franklin by Franklin

(3334), gr. gr. dam imported Harriet by Young Waterloo (2817), gr. gr. gr. dam by Hero (1110).

Highlander received the 1st premium as the best one year old Short Horn Bull, at the show of the Union Society at Petersburg, and at the State Show at Richmond, fall of 1855, and 1st premium, as best two year old bull at Wythe Show 1856. The open numbers refer to Allen's American Herd Book, those in parenthesis to the English Herd Book.



CLARISSA PARVIN AT 30 MONTHS OLD.
Short Horn Heifer, the property of Mathews and Sanders, Wythe Co. Va.

PEDIGREE.

Clarissa Parvin, roan, bred by James Renick, Bourbon Co. Ky., the property of Mathews and Sanders, Wythe Co. Va., calved August 23rd, 1852, got by Buena Vista 299, out of Illustrious, the 2nd by Franklin (3834), gr. dam Lady

Paragon by Paragon of the West (4649), gr gr. dam, imported Illustrious by Emperor (1974), gr. gr. gr. dam Peeress by Snowdrop (2653), gr. gr. gr. dam Countess by Sir Charles (593), gr. gr. gr. gr. dam Princess St. Albans (2584), gr. gr. gr. gr. dam Blossom by Cupid (177) gr. gr. gr. gr. gr. dam by Simon (590), gr. gr. gr. gr. gr. gr. dam Ly Punch (531), gr. gr. gr. gr. gr. gr. dam by Bolingbroke (86.)

GRAND CONTEST BETWEEN THE CORN
AND COB MILLS "LITTLE GIANT"
AND "EXCELSIOR YOUNG AMER-
ICA."

(LEAVIT'S PATENT.)

By special agreement, a trial of these mills took place in the afternoon, and notwithstanding the constant rain, a large concourse of people were present to witness it. This, we believe, is the second contest had this spring between contending mills. The premium was two silver goblets valued at \$60. The judges were appointed by Brutus J. Clay, Esq., President of the Bourbon Agricultural Society, and were composed of the officers of the Society and extensive stock feeders. The following is the report of the committee:

The undersigned having been appointed a committee of judges, members of the Bourbon County Agricultural Society, to determine (under rules prescribed for their guidance,) the relative merits of the Corn and Cob Mills of Messrs. Scott and Hedges, Cincinnati, known as the "Little Giant," and of Messrs. Douglass, Smith & Co., of Zanesville Ohio, named "Excelsior Young America," (Leavit's Patent.) The trial took place at Paris, Ky., on the 5th and 6th days of May, 1856.

The Little Giant, in one hundred revolutions, ground *twelve and a half bushels* of meal, at an average draft of 460 pounds by the *dynamometer*. Young America, with the same number of revolutions, ground *four and three-eighth bushels*, at an average draft of 190 pounds. One half bushel of the meal ground by each mill was run through a number 4 and number 6 sieve. The quantity of cobs left in the number 4 sieve, from the meal ground by Young America, was double the amount of that of the Little Giant. The meal of the Little Giant was of more uniform fineness than that ground by Young America. Though the mills are of equal diameter, (20 inches,) the Grinding surface in the Little Giant is supposed to be *five times* greater than in the Young America mill.

These tests, and an examination of the construction of the mills, led the committee to the opinion that the Little Giant is the superior mill, and best adapted to the use of the farmer, and they therefore award to Messrs. Scott & Hedges the two silver goblets.

BRUTUS J. CLAY,
W. R. DUNCAN,
B. B. GROOM,
C. T. GARRARD,
R. HUTCHCRAFT,
W. C. LYLE.

The committee state that the grinding surface of the Little Giant is five times greater than that of the Young America, of the same diameter. That this may be understood by those of our readers interested in these mills, we will remark that Mr. Hedges has recently

made important improvements in the Little Giant. Instead of a single cone and concave, an extra shell or cone has been added, presenting surfaces which act between the single cone and concave of the mill as formerly made. This combines important advantages. The corn and cob when broken down, after leaving the hopper, passes into two grinding spaces, instead of one, as in the old mill, and hence is more easily and thoroughly ground, while the resistance, or pressure upon the mill, is distributed over a larger surface, and consequently is less liable to breakage. By the report it will be seen that the power required to run each mill, is about equal to the amount of work done, without regard to time. The execution of the Little Giant No. 1, (20 inch mill,) with the improvement, is equal in its capacity for grinding, to No. 4, as formerly made. By turning a screw the extra grinding surface is unengaged, and is thus reduced to a single mill, and may be run with one horse.

Our readers know that we are advocates of "*fine meal*," and it may be due to the manufacturers of this mill to state that Mr. Hedges is not only an ingenious mechanist, but a most excellent pattern maker, and we believe that if he will, he can still improve the "Little Giant" so that its execution shall reach our standard of fineness. Such a mill, at a price that will place it within the reach of every farmer, will be of more importance to the country than almost any other implement of the age.

CORN IN TURKEY, WALLACHIA, MOL-
DAVIA, AND HUNGARY.

In order to give my friends an idea of the capabilities of the Danubian Principalities, and the importance of the Allies having the Danubian question clearly and soon settled, as also the great importance of having a free port at the mouth of the Danube, I beg to subjoin a few remarks, taken from the circular of a highly respectable firm at Galatz, which I recommend to their careful perusal and attention:—

"All corn grown in Wallachia is shipped at Ibraila, and that grown in Moldavia at Galatz. All corn shipped *via* the Danube from Bulgaria, is exported from Matchin, in spring, when the Danube is very high; sometimes vessels proceed as far as Silistria to load Bulgarian wheat, and to Giurgivo, to take in Wallachian wheat. All corn sent from Bessarabia is shipped from Reni and Ismail. Notwithstanding the many hindrances, the export from Moldavia and Wallachia, in 1852, was, from Galatz, 187,555 qrs. wheat, 820,279 qrs. maize, 96,900 qrs. rye, 468 qrs. barley, total 614,202 qrs.—From Ibraila, 343,584 qrs. wheat, 725,250 qrs. maize, 1,296 qrs. rye, 80,278 qrs. barley, and 5,180 qrs. tares, forming a total of 1,155,595 qrs., or a grand total from Galatz and Ibraila of 1,769,799 qrs. grain. In addition to this there was exported, *via* the Danube, from Bul-

garia, 200,000 qrs., and from Bessarabia, 400,000 qrs. grain.

"The greater portion of the produce of Bessarabia goes to Odessa for shipment, on account of the low sea freights to Odessa; if, however, the Danubian freights stood like those of Odessa, the whole of the grain from Bessarabia would be shipped *via* the Danube. The greater portion of the grain is shipped from Ismail, and the exportation from Ismail and Reni together, amounted in 1852, to 400,000 qrs. Although Ismail is on the Sulina mouth of the Danube, all the vessels that visit this port go to sea *via* the Salina, and would choose the St. George's mouth, were it in a better condition than the former. The production of Moldavia and Wallachia is rapidly on the increase, and were there a free port, it would, by the lowness of the sea freight, become still greater, and it is to be calculated that in ten years it would, with tolerable certainty, stand as follows:—Wallachia, 2 millions; Moldavia, 1 million; Bulgaria, 1½ million; and Bessarabia, 1 million—together, 5½ million qrs."

This points out the advantage of having a free port at the mouth of the Danube, instead of having to go *via* the Sulina, as at present; this would give great stimulus to the trade and agriculture of the Lower Danube. As to the manner in which corn is put on board the sailing vessels, I observe that corn shipped from Galatz is sent to this port by waggons. In Ibraila, however, only a fifth part comes by land, the rest comes from the Upper Danube, Kalafat, Iskas, Giurgivo, Calaruch, &c., by small lighters, called *kerlatzes*, but lately the Vienna and Danubian Shipping Company have brought now and then corn from the Upper Danube in iron lighters, &c. The Bessarabia corn comes, without exception, by land to Reni and Ismail. From Bulgaria, part is shipped from Silistria in small vessels, which are sent up in spring, when the water is high, the rest is shipped in the so-called *kerlatzes* from Widin, Rustochuck, Sistova, to Matchin, in order to be shipped from thence, and lately there have been warehouses erected there.

Belfast Mercantile Journal.

PORTABLE FENCE.

MESSRS. EDITORS.—Several persons having applied to me for information respecting the fence referred to in a recent number of your paper, you will perhaps confer a favor on them and some others by inserting the following:

The plank fence can be made of lumber of any length or breadth desired, according to the place and purpose for which it is designed.—My own is in pannels of 14 feet in length, and 4 feet 10 inches high. Five planks are used as rails, the bottom two are 7 inches wide, the next two 6 inches, and the top one 5 inches; these are nailed to the edges of vertical pieces, 4 feet 9 inches high, 5 inches wide, by 1½ inches

thick; one of these vertical pieces is placed at the middle of the pannel, and one at 5 inches from each end. A plank 6 inches wide is nailed on the top of the pannel, covering the vertical pieces and the top rail, and is sawed with a level at the end, which will be more or less acute, as the fence has more or less "worm." I have given mine 5 feet "worm;" shorter pannels would of course, require less. The pannels are connected together by means of hooks made of stout wire, fastened into the cap plank by a broad headed riveting nail, and catching on a similar nail in the next pannel.

If the fence is designed to be permanent, I dispense with the cap plank and hooks, and fasten the pannels together by nailing a short piece of six inch plank on the top of the two end posts. Against the side of the bottom of the middle post I nail a plank 5 inches wide and 4 feet long, extending 2 feet on each side of the pannel, and at right angles to its direction, which stiffens the fence very much. Pannels 10 or 11 feet long require no middle post.

In my Picket Fence, I use slats 3 inches by ½ inch or ⅝ inch thick, and of different lengths, according to the stock to be guarded against; three feet is high enough for hogs, five feet for any decent animal. These are nailed to the edge of plank 11 feet long, 4 inches wide and ½ inch thick, put one foot from the bottom and top, and left 2½ inches wider apart at one end of the pannel than at the other, so that the rails of one pannel fit between those of the next; an inch auger hole is bored through these rails where they thus join, about 5 inches from the end of each, and a good, durable wooden pin inserted. By removing these pins any pannel can be opened as a gate. If you wish to turn rabbits or small chickens, put your pickets 1½ inches apart and nail a 6 inch plank against the bottom of them. Four feet "worm" is enough for this fence. When no bottom plank is required, the position of the pannels should be reversed whenever they are moved—the end which was on the ground being put uppermost.

In constructing this fence, I take two trussels, bore, near one end, two inch holes, 1½ inches apart, and at whatever distance you want your rails apart, bore two other holes 1½ inches apart; put pins in these, coming as high above the trussel as your rail is wide. These pairs of pins should be wider in one trussel than they are in the other, by twice the thickness of your rail, in order, as I mentioned before, that one pair of rails may fit between the other pair. These trussels should be set exactly parallel with each other, and as far apart as your rail is long. The rail is put edgewise between the pins; the pickets nailed on with two six-penny nails at each end, and when one pannel is completed, it is removed and another made.

In making the plank fence, two trussels 14 feet long, were used, in each of which three

sets of pins were put, between which the vertical pieces were placed edgewise. Two hands can load a pannel of either of these kinds of fence, on a wagon coupled sufficiently long.

When I have leisure I will give you a plan for a Moveable Gate, which one man can take down and set up again in a few moments, and which, I think very serviceable when persons desire to have temporary access to an enclosure.

Yours, truly, F. B. S

Hazleside, Marion Co., M.

P. S.—Will some of your correspondents give us some further information about Barley, its varieties, culture and preparation for market.—*The Valley Farmer.*

CULTIVATION OF CELERY.

The principal difficulty in raising large and well bleached celery is to get the plants early, and sufficiently stocky. This is best accomplished by sowing them early in the spring in a hot bed, and when an inch high, transplanting them into a cold frame, and afterwards transplanting them into a warm border where they can remain till the trenches are ready for them. This will seem more labor than most people are willing to bestow, but frequent transplanting is the only way to get strong, healthy plants that will receive little check when planted in the trenches during our hot June and July weather.

In making the trenches the soil should be thrown out at least two feet deep, and twelve inches wide at the bottom; the first six inches being placed on one side, so that it can be used for covering the manure. Good leaf compost, or "spit manure," as the London gardeners say, from old hot beds, or, what is still better, the liquid and solid droppings from a manure cellar well composted with thoroughly decomposed peat should be put at the bottom of the trench about six inches thick, and covered with about six inches of rich, light, surface soil.—Let the plants be well watered 24 hours before transplanting, and take them up with a ball of earth round the roots, and they will receive little or no check. Good super-phosphate of lime either in solution or mixed with the soil before transplanting has a very beneficial effect, in giving the celery an early start. We have also used with great advantage Peruvian guano, applied in a weak solution, say a teaspoonful to two gallons of water. Celery is a gross feeder, and revels in ammoniacal manures, and the well decomposed organic matter or humus of dung, leaves, peat, &c. The soil should be kept constantly stirred till the plants have got a good start, and it is not well to be in too much hurry to commence earthing up.

It is, indeed, a disputed point whether it is best to earth up at several times during the season as the plants grow, or to do it at once, when they have nearly done growing, late in the fall. We have always adopted the former

practice, and have had good success; and, on this account, are inclined to recommend it. In earthing up, care should be taken that the soil does not get between the stalks, and it is not well to press it too tightly round the plants at first.

In England, celery is allowed to remain in the ground all winter; but from the greater severity of our winters, it is better, here at the North at least, to take it up after it has done growing, and stow it away in the cellar.

[*Country Gentleman.*]

From the *Genesee Farmer.*

CULTIVATION OF PEAS, &c.

EDS. GENESSEE FARMER:—Your article, headed "Premiums for Short Essays," has just attracted my attention. Among the subjects suggested by you, I observe one "on the cultivation of peas." I have had singular success in the cultivation of that vegetable, and if others will adopt my method, they will find it a most advantageous one. It is as follows:

Dig a trench of one foot deep, and then fill it again with good soil taken from the surface, to within six inches of the top. This, of course, leaves the trench still six inches deep. Plant the peas in the trench thus prepared, and cover them with six inches of good soil, also taken from the surface. By the time the peas come up, the trench will have settled about two inches, and this is to be brought nearly even by subsequent hoeings. I say nearly even because there should always be, in our dry climate, a hollow left to catch and hold the rains.

Now for the results. The peas will make their appearance notwithstanding the great depth of planting; there need be no fear about that. They will grow rapidly when started, will not be affected by drought, and will bear three times as long, and more than three times the quantity of peas planted in the ordinary way. There will be blossoms and mature fruit on the vines at the same time, and the vines will not put on the usual yellow, sickly appearance at the roots which is so soon followed by the drying up of the whole stock. If the soil is free from clay, it is better to cover them eight inches, even, rather than six.

Let those try the experiment who have been accustomed to plant in the ordinary way, and they will rejoice that they were subscribers to the *Genesee Farmer.*

Now, Mr. Editor, will you or some of your readers, inform me of the best method of preparing and using the white shell marl so common in this State. I have a large, and I have no doubt valuable bed of it on my farm, but I have injured almost everything I have put it on, because I did not know how to prepare it. I have been told that by letting it lie two or three years exposed to the sun and frost, that it will be valuable; but if any of your readers know of a method by which I may save all that time, I should be obliged.

P. M.

From the Richmond Whig.

AGRICULTURAL PROFESSORSHIP IN THE UNIVERSITY OF VA.

[The following extract from a letter of the Hon. Wm. C. Rives, Chairman of the Committee of the Farmers' Assembly, to the Secretary of the Virginia State Agricultural Society, will best serve as introductory to, and explanatory of, the following documents, relating to the endowment of an Agricultural Professorship in the University of Virginia]:

"Knowing the wide and deep interest felt to know the result of the conference just held with the Visitors of the University on the subject of an Agricultural Professorship in that institution, to be founded on the endowment offered by Mr. Cocke, and that the public anxiety cannot be expected to wait till a formal report be made by the committee to the next Farmers' Assembly, the committee have prepared a brief and general *note* of the proceedings and result of the conference, which is herewith enclosed, and which I suggest that you cause to be immediately inserted for the information of our agricultural brethren, in the newspapers and journals that usually publish the proceedings and documents of our Society. I need not say to you how deeply I regret the failure, from any cause, of an object so interesting to the whole State, and in which the solicitude of the agricultural community was so earnestly enlisted.

"Since the public attention is now so much turned the subject of agricultural instruction, scientific and practical, I send you herewith a copy of a letter on the subject, in both its aspects, addressed by Mr. Madison, as President of the Albemarle Agricultural Society, to the other societies of the State, in 1822. I hope you will have it published, if possible, at the same time with the other papers, now sent, that the public mind, while directed to the subject, may have the advantage of the lights thrown upon it by so wise and patriotic a man, whose thoughts and attention were much given to it in his noble and useful retirement."

The committee of the Farmers' Assembly, appointed to "confer with the Visitors of the University, and to make arrangements for the establishment of a Professorship of Agriculture in that Institution,"

met the Board of Visitors by appointment, on the 11th inst., at the University. Mr. Rives, Mr. Macfarland and Mr. Franklin Minor, constituting a quorum of the committee, were in attendance.

The committee being invited to explain the objects of the mission with which they were charged, presented a paper which they said had been prepared by them as embodying for the consideration of the Board, the views of the committee as to the best mode of organizing the proposed school, so as to give to it the greatest efficiency and usefulness in its connection with the University. The paper was submitted as a mere *projet*, subject to be modified, changed and altered, to be subjected in whole or in part, or to be substituted by some other plan, as to the better judgment of the Board should appear proper, and as containing nothing whatever in the nature of a condition.

The deed by which Mr. Cocke conveys his proffered donation in the bonds of the University, was then presented and read, together with a certificate of deposit of the said bonds in the Farmers Bank of Virginia, to be transferred to the Visitors of the University in the manner therein directed. An objection having been suggested to the terms of Mr. Cocke's deed, on the ground that the appointment of a Professor might be eventually defeated altogether by a persistence in a nomination or nominations already rejected or otherwise unacceptable to the Board of Visitors, the committee, in order to obviate that objection, proposed a modification of the deed, which they engaged would be made, providing that, in case of two successive nominations being rejected, the appointment should then be made by the Board of Visitors, independently of any nomination.

The modification proposed to this effect was in the following words, to wit:

"Before taking the vote on accepting the foregoing deed, it being suggested that due care had not been taken to avoid the possible abuse, resulting from a difference of opinion, in respect to the Professor to be elected, between the party having the right to nominate, and the Visitors it was proposed by the committee to remove the objection, by causing the deed to be so changed as to provide, that the power of appointment should rest absolutely with

the Visitors in the event of two consecutive nominations out of which the Rector and Visitors declined to make an appointment." A Copy—Teste:

R. T. W. DUKE,
Sec'y Board of Visitors University Va.

After some further interchange of views, the Board of Visitors finally communicated to the committee the following resolutions as the result of their deliberations on the proffered donation of Mr. Cocke for the establishment of a Professorship of Agriculture in the University of Virginia:

"1. Resolved, That the Board are of opinion that under the law as it now stands, they have not the right to accept the munificent endowment proposed by Philip St. Geo. Cocke, Esq., upon the terms set forth in the deed this day presented to the Board, in this, that the reservation in said deed to the donor during life, and to the Farmers' Assembly thereafter, of the power, to nominate the Professor in the proposed school of Agriculture, is inconsistent with the control vested by law in the Board of Visitors, and which the Board consider themselves bound to maintain; and they are therefore compelled to decline the said endowment:

"2. That the Board, with the high appreciation of the liberality and public spirit of Mr. Cocke, and of his selection of the University as the agent for carrying into effect his patriotic purposes, are prepared to co-operate with him to the full extent of their powers in the establishment of a school of Agriculture in the University, upon a footing equal in all respects to that of the other schools in the Institution.

"A copy from the minutes.

"Teste, R. T. W. DUKE.
"Sec'y Board of Visitors U. of Va.

We subjoin, also, copies of the *projet* presented by the committee, of the deed executed and tendered by Mr. Cocke, and of the certificate of deposit in the Farmers Bank of Virginia. As explanatory of a cause in the first paragraph of the *projet* it is proposed to state, that the Farmers' Assembly to mark their sense of the public spirit and munificence of Mr. Cocke, passed a resolution instructing their committee, "in making arrangements for the establishment of the proposed Professorship, to express the unanimous wish of the Farmers' Assembly that the name of the

noble donor be connected with the chair endowed by him.

PROJET PRESENTED BY THE COMMITTEE.

"There shall be established in the University of Virginia a Professorship or School of Agriculture, in which will be taught the Theory and Practice of Agriculture and Rural Economy, and which in honor of the munificence and patriotism of its founder, Philip St. George Cocke, Esq., shall be styled the Cocke Professorship.

To enable the students in this school to enjoy the benefit of professional instruction in those auxiliary branches of science which are taught in the schools of the University, the Professor of Chemistry will give a special course of lectures on Agricultural Chemistry, the Professor of Natural Philosophy on Minerology, Geology, and Meteorology, the Professor of Mathematics on Rural Engineering and Surveying, the Professor of Anatomy on Comparative Anatomy and Physiology, with outlines of Zoology and Veterinary Practice, the Professor of Meteria Medica on the elements of Botany and Vegetable Physiology, and the Professor of Law on Rural Legislation and Jurisprudence, which special Lectures, or any of them, the students of Agriculture will be allowed to attend for a fee of \$ — to each Professor.

Outline of instruction to be given by the Professor of Agriculture proper—

I. It will be the duty of the Professor of Agriculture, in the department of instruction allotted to him, to consider Agriculture first as a leading branch of the public economy of the state, showing its preeminent importance, its relative productiveness compared with other employments of capital, and the mutual dependence among them all. He will then consider it as a branch of general science and arts, showing its intimate and multiplied connections with other sciences and arts, and the wide range of knowledge laid under contribution for the illustration or enlightened practice of its various processes. Its *History* will next be reviewed, tracing its progress and characteristic phases through the principal states and nations of antiquity down to the present times, and exhibiting a comparative view of its actual condition in some of the most prosperous countries of our own day, with a general outline of the systems of culture and production pursued in each.

II. Its general theory will then be taken up and treated.

1st. With reference to the vegetable kingdom, showing the constitution of vegetable productions in general, with the properties of the elementary and compound bodies which enter into their substance or contribute to their nourishment, the general structure of plants, and functions of their different parts and organs, their mode of growth, and the manner in which their food is absorbed, changed and converted into their own substance.

2dly. With reference to the mineral kingdom and the atmosphere, giving a general outline of the geological structure of the globe and the formation of earths and soils, with their nomenclature, classification and proper modes of analysis, showing on what their fertility depends, and the various mechanical means by which the soil is prepared for ministering to the sustenance and growth of plants, and how far their nutriment is also derived from the atmosphere, either directly or through the medium of the earth.

3dly. With reference to the animal kingdom, enumerating and classifying the various kinds of domesticated animals reared and sustained upon the produce of the land; showing their economical uses and value; how they are fitted by their anatomical and general structure for their several uses; and applying the principles of animal physiology, as connected with the digestive, incubating and reproductive functions, to the best modes of keeping and feeding them, and improving the respective races by judicious breeding.

4thly. With reference to manures, or the increase of the productive powers of the land by adventitious aids, showing their several kinds as animal, mineral and vegetable; the best modes of managing and applying them, the true theory of the operation of each, their respective value and efficiency, and their special adaptation to different soils, according to the presence or absence of particular elements or qualities in the latter.

III. The *Practice* of agriculture will be treated in like manner under the four following heads:

1-t. With regard to the nature of the crops to be raised, as depending on climate, locality, soil, markets, &c., considering in succession the cereal, the root and legumi-

nous, and the grass and herbage crops, with the other crops entering into American husbandry; the cultivation appropriate to each; the advantages and best systems of rotation, the comparative profits of arable and grass lands; with some notice of the plants, (denominated pests,) pernicious to agriculture.

2ndly. With regard to live stock, arrangements for the proper care of them; best system of feeding, whether at large or under shelter; comparative profits of the different races of domestic animals; characteristic points, or criteria of excellence in each race; relative advantages and disadvantages of the several varieties of each race, with the particular situations and circumstances to which they are respectively adapted; the necessity of careful and well considered breeding to preserve or improve their usefulness and value; outlines of dairy management; animals and insects noxious to agriculture.

3dly. With regard to the mechanical, manual and animal operations of culture; ploughing, harrowing, rolling, seeding, planting, harvesting, &c.; the best mode of performing these and all the other necessary processes of cultivation; description of the different implements and utensils employed, and the mechanical principles on which their operations depends; draught animals and the principles of draught; importance of labor saving machinery, intelligent application and direction of labor in general.

4thly. With regard to the means of improving or maintaining the fertility of the land; laying down the grass with or without pasturage; ploughing in green crops; summer fallows; collection, preservation and manufacture of home-made manures; artificial and foreign manures; proper mode of applying both: Drainage: Irrigation.

IV. To these general divisions will be added the consideration of enclosures; the number and distribution of fields, roads, bridges, water power, farm buildings, rural accommodations and embellishments of every kind, including rural architecture and landscape gardening; a proper system of farm accounts, and whatever appertains to the judicious management and administration of landed property.

The foregoing scheme of instruction may be enlarged at the discretion of the Professor, by introducing from time to time

other subjects, as the progress of agricultural knowledge or the wants of the students may require; and although the particular order and succession in which its various parts are arranged are deemed the most natural and best adapted for the progressive development of a very complex subject, yet, if a necessary accommodation to the courses of the other schools should, in the judgment of the Professor, call for departures from it, he is at liberty, in such cases, to make them. The general regulations of the University, with regard to distinction and graduation in the several schools, are hereby declared to be applicable to the school of agriculture. *Certificates of proficiency* may be also granted to such students as shall have followed, with diligence and success, the special courses of Lectures auxiliary to Agricultural instructions, in any of the schools herein before mentioned; and the diploma of bachelor, in the science and art of Agriculture, shall be conferred on those who, besides graduating in the school of agricultural proper, shall have received certificates of proficiency for the special courses in any three of the auxiliary schools.

The annual salary of the Professor of Agriculture will be \$3,000, to be derived from the revenue of the permanent endowment made by Mr. Cocke, and a fee of \$ — from each student who shall attend the schools; and in case these resources shall, in any year, fall short of that sum, the deficiency will be made up out of the funds of the University; provided, that when the fees, together with the endowment, shall yield a surplus beyond the above mentioned sum, the said surplus shall go into the funds of the University. He shall also be entitled to the use of a Pavilion at the University, or an equivalent allowance for house rent.

A Committee of the State Agricultural Society, chosen by the Farmers' Assembly, or in such other mode as the Society may direct, shall have the privilege of attending the periodical examinations of the school, of inquiring into its condition, and of recommending, with the constitutional sanction of the Society, to the consideration of the Board of Visitors, any changes in the regulations, instruction or organization of the Agricultural Department, which may appear necessary to secure the full

measure of its usefulness or to improve its efficiency.

With a view to promote the practical instruction of the students of Agriculture, the farm owned by the University shall be set apart as a model and experimental farm, to be placed under the superintendence of an intelligent and skillful agriculturist, where the students will have the opportunity of becoming acquainted with the operations and details of the best modes of culture and systems of husbandry, the construction and working of the most improved implements, and the qualities and management of the choicest breeds of domestic animals. On this model farm it is proposed that there be established, with the aid of the State, a central intermediate school of Agriculture, and of the mechanic arts allied to it, which, while its course of instruction is of a less expensive and more elementary and practical character, will, by its proximity to the University, admit easy access, for all who desire it, to the higher scientific courses of the latter. Thus, by a reciprocation of benefits between the two institutions, interchanging with each other their respective facilities and advantages, the utility of each will be generally enhanced; and a comprehensive system of agricultural education would be at once organized at a comparatively small cost, corresponding to the magnitude of the interests involved, and providing for the wants of all the different classes of the agricultural community."

DEED OF MR. COCKE.

"This agreement, of the tenth of January, one thousand eight hundred and fifty-seven, witnesseth: Whereas, Philip St. George Cocke, of the county of Powhatan, Virginia, in view of the inestimable advantages of a thorough system of agricultural instruction, in his judgment essential to the progress and prosperity of the State—and deploring the absence of all public provision therefor—proposed to the Farmers' Assembly of the Virginia State Agricultural Society, at their session in October last, to bestow twenty thousand dollars in endowing an Agricultural Professorship in the University of Virginia, believing the example would lead to other contributions to the same great and patriotic object by the State and her citizens, and so be the means of securing for agriculture the ample pro-

vision for scientific and practical eminence conceded to other departments of knowledge; and the Farmers' Assembly being pleased to accept the donation on the conditions annexed thereto, as by his communication to that honorable body, and their response thereto, will appear, he proposes now to fulfill his design by assigning to the Rector and Visitors of the University of Virginia, in trust, as hereinafter declared, twenty thousand dollars of their bonds, issued under an act of the General Assembly, passed February the 17th, 1852.

Now, therefore, I, the said Philip St. Geo. Cocke, in consideration of the premises, doth assign, transfer and grant unto the Rector and Visitors of the University of Virginia three of the bonds issued in their name, signed by J. C. Cabell, Rector, under the act aforesaid, for five thousand dollars each, numbered one, two and three, and five other bonds of the same issue, for one thousand dollars each, numbered from four to eight inclusive, amounting in the aggregate to twenty thousand dollars, to be by them held and applied or used as follows:

First. The principal of said bonds—that is to say, the sum of twenty thousand dollars, thereby secured and guaranteed to be paid—shall be continued at interest, without authority in the said Rector and Visitors to consume or diminish the same, or any portion of it, by application thereof to any uses or use other than to preserve it as an interest bearing fund.

Secondly. The interest of the said bonds, and of the fund when the bonds may be paid and be otherwise invested, shall be applied and used in maintaining in the said University a Professorship of Agriculture.

Thirdly. If it shall happen that the said University be without a Professor to fill the said Professorship for five years in succession, the said Rector and Visitors shall assign and transfer the said bonds, or their proceeds, if they shall have been paid up or otherwise invested, to the Virginia State Agricultural Society; and if the students attending on the said Professor for ten years successively shall be less than an average annually of twenty, the said bonds or their proceeds shall be in like manner transferred to the Society just mentioned, the principal of the same to be undiminished, and the annual interest only to be used by the said Society for the diffusion

of agricultural knowledge or the promotion of agricultural education, under the special direction of the Farmers' Assembly.

Fourthly. The said Professor shall be appointed by the said Rector and Visitors on the nomination of the said Philip St. Geo. Cocke during his life, and at and after his death on the nomination of the said Agricultural Society, through the Farmers' Assembly: provided, that it shall be competent for the said Rector and Visitors to appoint a Professor *pro tempore* when it would be attended by injurious delay to wait for nominations as aforesaid; and, provided, that it shall be competent for the said Rector and Visitors to appoint the said Professor permanently upon the neglect or failure of the said Cocke or of the said Farmers' Assembly—after due notice that the Rector and Visitors are prepared to consider his or their nomination to make the same; and

Lastly. There shall be conceded to the said Cocke, during his life, and to the said Society, through the Farmers' Assembly at once after his death, the privilege of inducting to all rights of the Agricultural school or schools in the said University without fee or charge, two scholars annually.

Witness the following signatures and seals. PHILIP ST. GEO. COCKE, [Seal.]

CERTIFICATE OF DEPOSIT OF BONDS.

Farmers Bank of Virginia, }
Richmond, Feb. 9, 1857. }

“There is deposited with me as Cashier of the Farmers Bank of Virginia, twenty thousand dollars of the bonds of the University of Virginia, the property of Philip St. Geo. Cocke, Esq., deposited by him for the endowment of an Agricultural Professorship in the University; which bonds are to be delivered to the order of the Visitors of the University, on an endorsement to that effect on this paper, by Wm. H. Macfarland, Wm. C. Rives, and F. Minor, acting in behalf of Mr. Cocke and the Farmers Assembly.

J. A. SMITH, Cashier.”

LETTER OF MR. MADISON.

October, 1822.

Sir:—The inclosed resolutions of the Agricultural Society of Albemarle, explain the wish of the Society to provide for Agriculture, the advantage of a Professorship to be incorporated into the University of

Virginia; the means proposed for making the provision, and the hope entertained for a general co-operation in the scheme.

The present seems to be an important crisis in the agriculture of Virginia. The portions of her soil first brought into cultivation, have, for the most part, been exhausted of its natural fertility, without being repaired by a meliorating system of husbandry; and much of what remains in forest and can be spared from the demands of fuel and other rural wans, will need improvement, on the first introduction of the plough.

These truths are now sufficiently impressed on the public attention, and have led to the establishment of the agricultural societies among us, which are so laudably promoting the work of reform.

As a further means of advancing the great object, it has occurred to the Albemarle Society that a distinct professorship in the University of the State, if sanctioned by the proper authority, might be advantageously appropriated to the instruction of such as might attend, in the theory and practice of rural economy in its several branches.

To the due success of agriculture, as of other arts, theory and practice are both requisite. They always reflect light on each other. If the former without the test of the latter be a vain science, the latter, without the enlightening precepts of the former is generally enslaved to ancient modes, however erroneous, or is, at best, too tardy and partial in adopting salutary changes. In no instance, perhaps, is habit more unyielding, or irrational practice more prevalent, than among those who cultivate the earth; and this is the more to be lamented, as agriculture is still so far below the attainments to which it may fairly aspire.

A professorship of agriculture in the University might derive special advantage from the lights thrown out from the Chair of Chemistry in that institution. This science is every day penetrating some of the hidden laws of nature, and tracing the useful purposes to which they may be made subservient. Agriculture is a field on which it has already begun to shed its rays, and on which it promises to do much towards unveiling the processes of nature to which the principles of agriculture are related. The professional lectures on

Chemistry, which are to embrace those principles, could not fail to be auxiliary to a professorship having lessons on agriculture for its essential charge.

The fund contemplated for the support of such a professorship is to consist of a sum drawn from unexpended subscriptions, from special donations, and from a diffusive contribution not exceeding a dollar from an individual. It is hoped that for a purpose of such general utility, the number of contributors will more than make up for the smallness of the respective sums, and that, with the other resources, means may be gathered, not only adequate to the immediate views entertained, but justifying an enlargement of them.

Should this prove to be the case, it will be an improvement of the plan of agricultural instruction to provide and place under the superintendence of the Professor, a small farm in the vicinage, to be cultivated partly as a pattern farm, illustrating practically a system at once profitable and improving; partly as an experimental farm, not only bringing to the test new modes of culture and management, but introducing new plants and animals deemed worthy of experiment. In obtaining these aid might be found in the patriotic attention of the public and private naval commanders in their visits to foreign countries; and it might well happen that occasional successes in rearing new species or varieties of peculiar value, would yield in seeds and stocks a profit defraying the expenses incurred on this head.

A farm exhibiting an instructive model, observed as it would be by occasional visitors, and understood as it would be in its principles and plans, by students returning to their dispersed homes, would tend not a little to spread some information on the subject of Agriculture, and to cherish that spirit of imitation and emulation which is the source of improvement in every art and enterprise.

You will oblige, sir, the Society of Albemarle, by laying this communication before that over which you preside, and by transmitting its sentiments thereon, which will afford particular pleasure, if they should accord with the views of this Society, and promise so valuable a co-operation in carrying them into effect.

By order of the Society.

JAMES MADISON.



THE SOUTHERN PLANTER.

TERMS AND CONDITIONS.

Two Dollars and Fifty Cents per annum, or Two Dollars *only*, if paid in *ADVANCE*.

Subscriptions may begin with any Number, but it is *desirable* that they should be made to the end of a volume.

Subscribers who do not give express notice to the contrary on or before the expiration of their yearly Subscription, will be considered as wishing to continue the same; and the paper will be sent accordingly.

No paper will be discontinued until all arrearages are paid, except at our option.

Subscribers are requested to remit the amount of their Subscription as soon as the same shall become due.

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All Payments to the Southern Planter will be acknowledged in the first paper issued after the same shall have been received.

All money remitted to us will be considered at our risk *only* when the letter containing the same shall have been registered. This rule is adopted not for our protection, but for that of our correspondents; and we wish it distinctly understood that we take the risk *only* when this condition is complied with.

It is indispensably necessary that subscribers remitting their Subscription, should name the Office to which their papers are sent; and those ordering a change should say *from* what to what post office they wish the alteration made. A strict observance of this rule will save much time to us and lose none to them besides insuring attention to their wishes.

Postmasters are requested to notify us in *writing* as the law requires, when papers are not taken from their Offices by Subscribers.

RUFFIN & AUGUST, *Proprietors*.

OFFICE: No. 153, Corner Main and Twelfth Streets.

"CEASE VIPER, YOU GNAW A FILE."

In our last number, we gave a notice, as it is called, to the "*Manipulated guano*" of Reese & Co., manufactured out of the Peruvian Columbian, and for Mexican guanous in certain definite, and openly stated, proportions. We stated then that it was "probable" that the finer state of subdivision to which their guano was reduced, and which was unattainable by the ordinary

means at the farmers' command, "might" render it unnecessary to employ so large a proportion of guano for the wheat crop, whilst the residuary phosphate left in the land, "might" benefit the succeeding crop of clover or peas. At all events, that Reese & Co. was the only concern which publicly stated the constituents and proportions of their manure, and thereby came before the public above suspicion, because without disguise.

Our convictions of the value of their compound are now stronger than they were before, though the mode of proof is not pleasant to comment upon.

Mr. Barreda, the agent of the Peruvian government, is certainly of that opinion, whatever he may pretend, if he shall pretend anything, to the contrary. He has proven his opinion by a petty piece of tyranny, which is as narrow as anything ever done by a monopolist. He has refused, as we learn on the best authority, to sell guano to Messrs. Reese & Co. on any terms; and he endeavors to exact pledges from all who purchase of him that that they will not sell an ounce to that firm. Beyond all question Mr. Barreda has found out that their article is as good, or better, at the price asked, than Peruvian guano, *in the form usually applied*; and he means to block the game on those who make it, if he can, by an absolute prohibition. Nothing but this supposition can account for his course except the alternative, that he scents an imposition on the public, which he will prevent. We do not plead guilty to charity or credulity enough to accept this latter explanation.

It will be remembered that, last spring, in taking Mr. Barreda's part against the presumed action of the guano convention in Washington, we stated that he might have as little of the true spirit of commercial liberality as a Spaniard could be expected to exhibit; but we confess ourselves unprepared for this vain attempt to keep up his monopoly at the expense, not only of the firm in question, but of the public, and finally of himself. Of course it is futile; for their are parties who will accept his stipulated conditions as to that firm, and immediately sell to it. Supposing him to discover this breach of contract,—which we learn he proposes to do, by a reward of twenty dollars to the informer in each case,—

how can he recover damages? We believe that the condition is illegal, as against private rights and public policy, and therefore void; but if it be not, we should like to see a jury WHICH WOULD give damages enough in such a case, even under instructions from the bench, to cover the cost of the suit. But if it were competent to him to exact such conditions, does he expect a large and enlightened commercial community, like Baltimore or Richmond, to sanction such an outrage on their rights? Or can he think that they will see one man crush another by such outrageous proceedings without some sort of retribution?

We hope, for the honor of the community, that the merchants will cease to buy and the farmers to use guano, sooner than yield to this demand.

Mr. Barreda may threaten to go elsewhere,—to leave the country even, and break up the trade; but he cannot do it. It was only three nights ago, that we saw a statement of Dr. Anderson, Chemist to the Highland and Agricultural Society, to the effect, that already the demand of Scotland for guano had fallen off one third; and should sulphate of ammonia recede to the prices of three years ago, that a still further decline must take place in the quantity required for that market. The same, undersimilar circumstances, will probably prove true as regards England. Here, it is well known, that many persons think they have injured their lands by guano, and the enquiry for it—owing partly to that fact, and partly to a falling wheat market, has not kept up its former rate of increase.

Mr. Barreda, therefore, cannot go elsewhere on better terms. If he could, he would have gone long ago; for what does he care for us? He will, therefore, be compelled to sell here. He will sell directly, or indirectly, to Reese & Co., and they will make manipulated guano as before, and send it to their agents in this city to sell with the enhanced reputation that Mr. Barreda's opposition will give it.

The greatest harm he will have done will have been to himself; and if he could have succeeded completely in his policy, the result would have been very injurious to him; for it would have prevented the sale of a cheaper, or rather, a lower priced article, and would

have diminished his sales by just that amount.

We hope he will reconsider his proposition, and not draw upon himself heavier censures than he has yet incurred. Should he, however, refuse, we can only say to him, as we said in the beginning, "cease viper, you gnaw a file."

NEW BOOKS.

We have received the following new books. From A. Morris:

Anatomy and Physiology of the Horse, with anatomical and questional illustrations.—Containing, also, a series of Examinations on Equine Anatomy and Physiology, with instructions in reference to Dissection, and the mode of making Anatomical Preparations; to which is added Glossary of Veterinary Technicalities, Toxicological Chart, and Dictionary of Veterinary Science. By George H. Dadd, M. D., V. S., &c. Boston: John P. Jewett & Co., 1857.

Not having had time to do more than glance through this work, we append the remarks of the very reliable Editor of the Boston Cultivator with this additional criticism of our own: that if the work is intended for the general reader, it is rather too technical, if for the veterinarian, there is not enough of it. We believe the fine English work of Percival on the same subject costs about \$25. Still as this is only a beginning here, it is perhaps the best that could be expected. We wish, however, Dr. Dadd had stated in some way, what part of the work is his own, and what is borrowed:

"The mechanical style of this work is creditable. The engravings are mostly copied from works of high standing, and are very handsomely executed, on stone. We have not been able to give the work a very thorough examination, but from a cursory glance at its contents, we infer that it is made up in a great degree from the writings of Percival and other well-known authors. In fact it is said in the preface, that Percival's *Anatomy of the Horse* has been "freely employed." From the character of the authors thus employed in forming this book, there can be little question that it will be useful. Of the special merit which belongs to Dr. Dadd in the case, we have no

means of judging, as the productions of his mind and pen are not so arranged as to be identified."

The same Publisher has also sent us Mr. Fitzhugh's new work: "Cannibals All; or Slaves without Masters." This is a sort of sequence to his last volume on the Failure of Free Society, and, like that, is a very striking, though somewhat erratic essay on free and slave society. We cannot, in either case, subscribe to all the opinions of Mr. Fitzhugh, especially as to the remedy he would apply to the existing evils of free society. If abstractly correct, they are yet too good for the practice of the world, which will never consent to organize its labor on any other principles than those of political economy, until the millenium comes; and that we think, from present appearances, is not at hand quite yet.

Still, Mr. Fitzhugh is on that side in the great social argument which we have long since ardently espoused, and that is, that a slave system is the best for us at the South, and will compare advantageously with any other system, anywhere else.

As the argument on that question has not been altogether settled by Mr. Buchanan's election, so far from it, in fact, is just now fairly commencing, and every work on the subject will furnish materials for the discussion, we welcome Mr. Fitzhugh's book as an addition to the store that is accumulating on a subject which now excites the attention of all, and has but lately elicited some of the very ablest social treatises that have ever been written.

To Price & Cardozo we are also indebted for a really beautiful work, and one which every farmer should have upon his parlor table, if not on his desk. It is entitled:

The Rural Poetry of the English Language: Illustrating the Seasons and Months of the Year—their Changes, Employments, Lessons, and Pleasures, topically Paragraphed, with a complete Index. By Joseph William Jenks, lately Professor of Language in the Urbana University, Ohio.

We regret that this, like the two other works named above, came so late to us, that we have not had the opportunity to examine it fully. But it is rather, in this case, for the

pleasure we should have derived from the perusal, than from any doubt as to the character of the notice we should have given it.

As a general rule, we object to selections, elegant extracts, and abridgments of authors. That sort of nut we usually like to crack for ourselves, and thank no one to pick out our dainties. But in this instance to have had our way would have been, to own a library of nearly all the poets from Hesiod down; and so, somewhat on the beggar principle, we are compelled to let another choose for us.

Goethe somewhere advises his friends to do these things every day; to look at a fine picture, to read a good poem, and—we think it is the third—to hear some good music.

To a farmer, who would rub off from his work some of the daily dust or mud that accumulates upon it, and would inrub his task with something more than its utilitarian results by following the advice of the great German, this book offers a fine opportunity; for, though the "pictures" are nothing to brag of, he will certainly find a good poem on nearly every page. It is the fault of nearly all farmers, it is, indeed, in the very nature of their calling, to look too much to the purely practical, and to see in "the blowing clover and the falling rain," nothing more than hay and high water. To correct this, and thereby to add to the enjoyments which now cluster around rural life, those of a higher culture and more refined taste, to add the flower border to the corn field, and the bower to the cattle shed, is the aim and tendency of the present work.

THREE QUARTER SOUTH DOWN RAM LAMBS.

We have for sale, at fifteen dollars each, six or eight very likely lambs of the above breed, of the stock of Mr. R. H. Dulaney of Loudoun. We last year advised those who affect this breed of sheep, to purchase the thorough bred at three prices instead of part-bred stock of our own or any one elses; and do so still. But those who will not do that, had better buy of us than continue to use natives. They are in-and-in bred—the sire on his offspring, which we state, that those who dislike this mode of breeding may not be taken in.

HORTICULTURAL DEPARTMENT OF THE PLANTER.

To meet the growing wants of the agricultural community in respect to gardening, we have engaged the services of Mr. E. G. Egge-ling, whom we have before introduced to our readers as a skilful florist, gardener, and orchardist, to contribute a series of articles for each month on such subjects. As he is familiar with our climate, and the best mode of raising all the various products in his line, we have no hesitation in recommending the diligent perusal of what he writes. Indeed, we would not have engaged his services, if we had not known their value, and thence presumed their acceptability to the public.

We trust that this department and this effort to extend the usefulness of the Planter, will meet the approbation of all our friends.

REGISTERING LETTERS.

Our friends will confer a very particular favor on us, if they will ALWAYS REGISTER *their letters* when they send subscriptions by mail. We only advertize to be responsible for the transmission of money by mail when the letter containing the same is registered, because the loss of some two or three hundred dollars a year, which results from not registering, will fall nunch more easily on the large number of subscribers we have than on us individually. This being the case, it is evident that it is for their protection, not ours, that we request the registry. Still, it would save us a great deal of trouble and complaint where we are not at all in fault; and it will save them a good deal of loss: for it is a curious fact that we never fail to receive a registered letter, and have never heard of one being lost.

AGRICULTURAL REGISTRY AND EX- CHANGE OFFICE.

The advertisement of Mr. N. August to be found in this number of the Planter, will explain itself. Such an agency has long been needed in Richmond, and it is hoped will succeed as soon as its convenience and utility becomes known.

The editor of this paper has no interest or connection whatever in this agency, and we so state, that gentlemen wishing to avail them-

selve of the facilities afforded by it, may address Mr. A. individually, and thus insure prompt attention to their communications.

In this connection, we request correspondents who write us on business connected with the paper, to address their communications to us as a firm, and not to either partner in his individual capacity.

MR. MINOR'S ADDRESS.

It was our fault, not the Printer's, this time, that we failed to *entitle* the Agricultural address of Franklin Minor, delivered at the last meeting of the Virginia State Agricultural Society, and published at our urgent request, in the February number of this paper.

It was an admirable address on the subject it treated of, and he should have had the credit for it. We humbly beg his and the public's pardon.

Richmond Cattle Market, February 26th.

Messrs. Shook & Crockett report sales at the Scales this day, of 100 head of Cattle, at 5½ to 6¼ gross; Sheep at 6 to 6½ gross; Hogs 8½ nett, in demand.

ADVERTISING LIST.

Our readers will find much to interest them in our advertising columns. We give below a list of those contained in this number to which we beg to refer them:

SOUTHERN PLANTER.

Fred. McCready, New York, Mapes' Super	
Phosphates of Lime,	- 191
E. P. Nash, Petersburg, Pianos,	- 191
D. G. Smith, Charlottesville, a farm in Albemarle of 1,038 acres, and one in Fauquier of 644 acres,	- 191
W. P. Jordan, Smithfield, his farm "Macclesfield," on James River, in Isle of Wight county, containing 500 acres,	- 191
Dr. Abner Crump, a Farm in Powhatan county of 667½ acres,	- 191
T. Branch & Sons, Petersburg, Emery's Corn Planter, Seymour's Grain and Guano Broad Cast Sower, and Kentucky Blue Grass Seed,	- 191
Duval & Norton, Richmond, Horse Tonic,	192
Isaac Irvine Hite, White Post, Manny's Reaper,	- 192
Drayton G. Meade, Alexandria, Manny's Mower and Reaper,	- 192
A. M. Willis, Sperryville, a Farm in Rappahannock, of 362 acres,	- 192
C. M. Saxton & Co., New York, Agricultural Works,	- 192

Lodi Manufacturing Co., New York, Improved Poudrette, - 192
 A. P. Routt, Somerset, Va., Improved Premium Cultivator, - 192
 S. S Cottrell, Richmond, Saddles, &c. - 192

COVER.

J. M. Thorburn & Co., New York, Spring Garden Seeds, &c., - 4
 C. M. Saxton & Co., New York, Agricultural Works, - 4
 J. S. Reese & Co., Baltimore, Manipulated Guano, - 4-6
 Franklin Thomas, Attorney at Law, Richmond, - 5
 The Va. Fire & Marine Ins. Co., Richm'd, Proprietors Southern Planter, a Tract of Timber land in Louisa Co, of 525 acres, - 5
 C. H. Locher & Co., Balcony Falls, Agricultural Lime, - 5
 R. H. Dulany of Loudoun, imported Stallion, "Scrivington," - 7
 S. McGruder's Sons, Richmond, Commission Merchants, - 7
 P. Horton Keach, Richm'd, Hunt & Webster's Sewing Machines, Trimmings, &c. Proprietors Southern Planter, a farm in Botetourt of 800 acres, with water power, Saw and Grist Mill, - 7
 Mitchell & Tyler, Richmond, Watches and Clocks, Jewelry, &c. - 7
 Powell & Morrison, Richmond, Southern Female Institute, - 8
 N. August, Richmond, Agricultural Registry and Exchange Office, - 8
 R. R. Duval, Richmond, Sup. Phos. Lime, - 8

ADVERTISING SHEET.

J. W. Randolph, Richmond, advertises Books, &c., - i
 Wm. H. Harrison, Lodore, Amelia Academy, - ii
 John Dooley, Richmond, Hats, Caps, &c., - ii
 Crenshaw & Co., Richm'd, Wool Depot, &c - ii
 E. B. Spence, Richmond, Clothing, &c., - ii
 Geo. Watt & Co., Richm'd, Cuff Brace Plow - ii
 Franklin Minor, Charlottesville, Ridgway School, - ii
 Sampson Jones, ag't, Richmond, Groceries, - ii
 J. R. Keiningham, Richmond, Books, &c. - ii
 Rich'd Moore, Richmond, Hats, Caps, &c. - ii
 H. J. Smith, Richmond, his Celebrated Trotting Stallion, "Kossuth," - iii
 J. C. Thompson, Tompkinsville, N. Y., Wyandot Prolific Corn, - iii
 F. G. Ruffin, Richm'd, School at Summer Hill, - iii
 Philip Rahm, Richmond, Locomotive Engines, Machinery, &c., - iii
 Thos. Betts & Co., Liverpool, (J. M. Miller, agent, N. Y.) English Breeding Stock, - iii
 Meade & Baker, Richmond, Drugs, Chemists, &c, - iii
 Aaron Clement, Phila., agency for the purchase and sale of improved Stock, - iii

E. Whitman & Co., Baltimore, Harvest Tools, Machinery, &c., - iv
 E. A. Morrison, (T. E. Marable, ag't, Petersburg,) Morrison's Reaper, - iv
 Green & Hobson, Richmond, Commission Merchants, - iv
 E. D. Keeling, Richmond, Ready-Made Clothing, &c. - iv
 Osborne's Ambrotype and Daguerreotype Gallery, Richmond, - iv
 D. Bendann, Richmond, Ambrotypes, - iv
 John & George Gibson, Richmond, House Builders and Carpenters, - v
 J. C. Ayer, Lowell, Mass., Cherry Pectoral, - v
 F. J. Barnes, Richm'd, Iron Railing, &c, - v
 Charles J. Baldwin, Richmond, Saddles, Harness, &c., - v
 Albert L. West, Richmond, Architect and Measurer, - v
 R. O. Haskins, Richmond, Ship Chandler Grocer and Commission Merchant, - v
 Howard Association, Philadelphia, Report on Spermatorrhoea, - v
 F. G. Ruffin, Richmond, Pigs of improved Breed for Sale, - v
 N. Carusi, Richm'd, Chickering's Pianos, New Jersey Fertilizer Co., New York, Green Sand Marl, - vi
 Heath, Wynkoop & Co., New York, Lyon's Kathairon, - vi
 J. H. Claiborne, Richm'd, Ground Plaster - vi
 Thomas Leonard, Richmond, Leonard's Instant Relief, - vi
 J. H. Anthony, Richm'd, Hats, Boots, &c, - vii
 Hitchcock & Osborn, Richmond, Coach Dealers, &c. - vii
 James Walsh, Richmond, Guns, Fishing Tackle, &c., - vii
 Metropolitan Savings Bank, Richmond, - vii
 W. H. White, Fredericksburg, Books, Music and Musical Instruments, - vii
 Baldwin, Cardwell & Co., Richmond, Agricultural Implements, - vii
 John Morton, Richmond, Florist, - vii
 J. Montgomery & Bro., Baltimore, Double Screened Rockaway Fan, - viii
 Ainslie, Bowen & Powell, Richmond, Carriages, Buggies, &c. - viii
 McKinney & Dupuy, Richmond, Commission Merchants, - viii
 Rittenhouse & Crawford, Baltimore, Draining Tile, - viii

AN ADDITIONAL FACT IN CONTINUOUS SEEDING OF OATS.

CABIN POINT, Feb. 25th, 1857.

To the Editor of the Southern Planter :

DEAR SIR.—I have been long of opinion that Oats exhaust the land less than any other crop. More than twenty years ago I heard of a farmer, in the lower end of Amelia county, who started and practised the continuous sowing of Oats in the same land for many years

with decided improvement. I adopted his suggestion—commenced on a piece of poor land, which I designed for tobacco, and continued it for three successive years with decidedly improved crops. I am so well satisfied with the propriety of the practice, that I have frequently recommended it to my friends; and if I had a convenient lot, would be doing the same now. My practice was, not to graze at all, as the idea was that it would be injurious.

If you will notice, grass (crab grass) grows more after oats, than after wheat, and consequently the grazing would be much closer; and this, I believe, was the origin of the idea, that it was the greatest exhauster of all crops.

You mention something of sowing your orchards. I have heard from experienced men in those matters, from Surry and Sussex, that all grain crops are injurious to orchards, particularly oats and wheat. Of that I know nothing, never having had anything to do with a garden or an orchard in my life. I always considered my dominion did not commence until I got fairly outside of the yard fence and its appurtenances.

Yours truly,
NAT. M. OSBORNE.

Horticultural Department.

TO THE READERS OF THE PLANTER.

By an arrangement with the proprietors of the Planter, I have taken charge of this department of the paper, and hope to render it both interesting and profitable to the farmers and gardeners of the State. Some twelve years devoted to Horticulture and kindred pursuits in this State, and a habit of observing with care whatever facilitates the rearing of plants, vegetables, flowers, and trees, enables me to speak with some confidence upon many points of practical value, to persons similarly engaged; and I shall endeavor, while my connection with the Planter continues, to print only the results of my own experience and observation, and such views as may come to me from other reliable sources. As it will be my first object to make this department useful, I shall hold myself in readiness, at all times to answer any and all inquiries which may be addressed to me by patrons of the Planter, and request all persons who desire advice, to consult me by letter; and I will reply through these pages, or by letter, as circumstances may dictate to be most proper.

The suggestions in the present number have been very hastily prepared, and are, therefore, less valuable than those which will follow in future numbers.

For the sake of convenience, I have divided the article of this month into three heads, i. e. the Kitchen Garden, the Flower Garden, and the Orchard; and shall probably adhere to this arrangement,—though such changes will be made in this division as shall seem proper in future numbers of the paper.

The months of March and April are usually busy months with gardeners, as the weather then opens, and the soil must be prepared for the operations of the year. Perhaps some inexperienced persons may find in what follows, something that will be of service.

E. G. EGGELING,
FLORIST AND NURSERYMAN,
Richmond, Va.

WORK IN THE KITCHEN GARDEN.

Asparagus beds, should be forked this month. In the Planter last year, the process was described, and it is only necessary to add now, that the object of thus stirring the earth, is to break the crust formed during the winter, so as to give free ingress to air, light, and heat to the roots. After the beds have been well worked, they should be dressed with old, well rotted stable manure, to the depth of several inches, as a top-dressing.

Beets,—sow in drills, about eighteen inches apart, and cover the seed in to the depth of two inches. The soil ought to be very rich, generally the richest in the garden. It is a good plan, to sow beets, carrots, parsnips, and salsafi, all in one bed, observing for each the directions given for sowing beets. Of course the seed should be put in separate drills, though in the same bed.

Celery.—Sow white, solid celery this month, in very rich land, deep and friable; and, if possible in a shady spot. When the land is not shaded, select that part which is least exposed to the action of the sun. Farmers who raise tobacco plants, would do well to sow this vegetable with their tobacco seed, in the beds which are made for the rearing of tobacco plants. Such beds are always prepared with great care, especially to have them free of weeds and grass; and this is equally needful

for celery, which is very small when first it appears above the earth.

Cabbage seed may be put on warm borders this month, at least, the flat dutch, drum-head, and Savoy varieties. Cabbage plants in hot-beds, should have air freely now, when it is not too cold. On warm, sunny days, the sash should be raised and the air admitted freely, to harden the plants, preparatory to their removal. By the fifteenth or twentieth of March, the plants may be set out in the garden.

Cucumbers, and *melons* also, may be planted the last of March or first of April.

Kail.—Spring kail, or as it is sometimes called rape seed. Sow a full crop during the month of March.

Kidney Beans, may be planted any time this month. Towards the last of the month, prepare the ground for Lima beans, and put down the poles for them. This should always be done before the beans are planted. After the poles are put down, plant the beans, and continue to plant until a good stand is secured, which is oftentimes a matter of great difficulty.

Lettuce, for the most part, is planted in the fall, but the variety known as "India Cape," a very beautiful and valuable variety,—sow now for summer use. This is the only variety of which I know, that stands the heat of summer well. The other varieties run to seed too quick. Lettuce is so highly esteemed among all classes, that there surely can be no need to urge its cultivation.

Melons, as already stated, may be planted the last of March or first of April.

Onions.—Sow the seed immediately, to raise a crop for pickling purposes. White Portugal is the best variety. This is also the season for planting the onion button or bulb.

Ochre.—Sow ochre the last of March or first of April; and, if desirous to economise space, it may be stuck in an out of the way corner, where you can put nothing else. It is chiefly valuable for soups, and by many persons is highly esteemed as a seasoning.

Parsley, sow broadcast, on borders or other convenient places, as it will grow anywhere.

Peas.—Sow extra early, and other early varieties during March, and the first of April, sow Marrow fat. By sowing a new parcel every

two or three weeks, the table may be constantly supplied through the whole season, whereas if a full crop be put in at this time, there will be more than enough for consumption at one time, and then all the vines give out together.

Potatoes, for summer use, should be planted immediately. Those planted now are only for summer, and the seed which are to be planted later in the year, should be kept in a cool, dry place, to prevent sprouting. At a future period we shall have much to say concerning this crop.

Radishes, are of several kinds. Sow turnip root variety at once; and later in the month, the long kinds. To have these good, a new crop must be sown every ten or twelve days, as they continue fit for use but a short time.

Spinage.—Sow immediately, in drills, separate from each other fifteen or eighteen inches. After covering the seed in the drill, trample them well, to promote speedy development.

In addition, the first of April, sow *Nasturtium* for pickles and sauce, and in a small, well-selected bed, in a warm, sunny part of the garden, put a few tomatoes and egg-plants.

WALK IN THE FLOWER GARDEN.

But little can be done among the flowers, thus early in the year, beyond trimming roses. In pruning roses, it must be borne in mind, that the only part of the plant which produces flowers is the wood of one year's growth. Leave all that then to furnish the flowers, the rest, that is all that is more than a year old, produces only leaves, and may be cut off. As the sap which produces the rose, also enters into the leaf, it is very clear that the less of the leaf producing wood which remains, the better and finer will be the flowers.

WORK IN THE ORCHARD.

Fruit trees may be planted now, of nearly every variety and if planted properly will do well. In general put the tree from six to eight inches deeper than you wish it to stand, throw in earth until the hole is nearly full, pull the tree up eight inches to straighten the roots and leave them in the position in which they naturally grow. Hereafter, we shall write much concerning fruit trees and present some views which we trust will prove valuable to the fruit growing interests of the State and of the South.

This is a good time to trim trees but not so

good in our opinion as the summer, but as there is perhaps more leisure with farmers at this season, it may be done now. Concerning this trimming a few words.

The great object of pruning fruit trees, is to remove all limbs and branches which prevent the free circulation of air and sunshine to all parts of the tree and especially to the inner branches. To effect this all branches which lap over, or cross others, should be removed. None others need be taken away from old trees, if we except suckers which of course are to be cut off invariably. With young trees however it is different. In trimming them, regard should be paid, not only to the object specified, but also to making the tree compact and strong. All branches which show a tendency to run out at great length from the body of the tree, ought to be removed, leaving only those which grow upright somewhat in a line with the trunk of the tree. The long, horizontal branches, are excellent for catching the winds and destroying the tree, and the habit of leaving them is the chief reason why the winds injure orchards so much, especially peach orchards. If you would have your trees resist the action of the winds, keep them trimmed as directed. As to anything else, you may let the trees take care of themselves, and leave the branches to grow out from the tree as close to the earth as they please. That is abominable trimming which strips the lower part of the tree of all its limbs, and concentrates them at the top, as is so commonly done in Virginia, both with fruit trees and ornamental trees.

With these objects in view, go into the orchard with a saw and a sharp knife, and first saw the branch off just as close to the body of the tree or the limb on which it grows as possible, and then with the knife trim it perfectly smooth. If your cut is close enough to the trunk or limb, when the sap comes up, it will flow out at the wound, cover over the cut and very soon it will be healed entirely; whereas, by leaving several inches of the limb or branch it never heals, but remains to rot and infect with disease the whole tree. Remember then, to cut close.

While on this subject of pruning, it may be remarked, that it is a very common and as I conceive very erroneous practice to prune grape vines at this season. My habit is to trim in

the fall, and I was induced to adopt this course by observing the deleterious effects of spring pruning. When the vine is cut at this season its bleeds must profusely, as all must have observed, who cultivate vines. This bleeding which cannot be avoided with spring pruning, is so hurtful to the plant that I cannot hesitate to recommend fall pruning instead, and at the proper season, I propose to discuss the various modes of pruning vines and to give minute directions concerning that which my experience and observation shows me to be the best.

Strawberries.—So soon as the weather opens and the plants begin to push, give them attention. It is a good time to plant strawberries; though if planted in September or October, they will bear fruit the following year more abundantly than if planted now.

Peach Trees.—To guard against the attacks of worms and insects which sometimes do great hurt to peach trees, let the following directions be observed.

As early in March as the weather will admit dig away the soil from about the tree, until the top roots are exposed and scatter about the roots freely, good shell lime, if it can be had; or other lime if that cannot be obtained. This will not only guard against the destroyers mentioned, but will in other respects promote the health and vigor of the tree and the quality of the fruit.

Ornamental trees.—Now is a good time, for farmers to go into the woods and select and transplant maples for ornament, and this they should by no means omit, to do. It will be our province to prove, in subsequent issues of this paper, that trees, shrubs, and flowers, while they ornament, and give grace and beauty to the farm house and grounds, are not without their uses, and further to convince our readers that our trees growing near our houses, are better suited for ornament than all the Lindens, poplars, mulberries and other like favourites, in the world. For the present, we must content ourselves with merely urging our farmers to plant trees for ornament and with simply stating that they can find all they need in their own woods.

Nest Eggs.—Instead of using new-laid eggs in winter for nest eggs, that burst, and teach the hens to eat their eggs, get the porcelain, imitation eggs, at ten cents each, sold by crockery dealers and others.

SEWING MACHINES.

Rock Hill, Albemarle Co., Va., }
Feb. 20th, 1857. }

FRIEND RUFFIN:

In your January number of the Planter, "a Clark County Subscriber" wishes to know whether any of your patrons can recommend, from use, a good sewing machine. I will simply say, that I purchased last fall, one of Singer's patent straight needle, perpendicular action sewing machines, at a cost of \$125; (which I think a very high price for the quantity of machinery;) which has sewed up all the clothing for a family of about forty, white and black. And while I cannot speak of this particular patent in comparison with any other, yet I can say, it seems to answer all the purposes of its design. The great complaint used to be, "Oh, so many long, hard breeches leg seams, and sore and aching fingers at night." But now the heaviest burden, is cutting and basting the garments ready for the machine. I think the time requisite for sewing the seams of an ordinary pair of pantaloons is from eight to twelve minutes. And while I consider the price paid for it exorbitant indeed, yet the good wife says she would part with it with much reluctance at \$500. It will stitch rapidly the heaviest domestics for negroes, up to the finest cuffs and collars for ladies and gentlemen, making all the time a strong, close seam.

I think our machine, with the necessary practice and experience, will employ eight or ten hands to cut, baste, and work button holes, &c. J. M. Singer, N. Y., I believe, is the sole proprietor of this valuable labor-saving machine.

E. B. BROWN.

Mapes' Super Phosphates of Lime,
The Best Fertilizers Known.

	Per ton.
Mapes' Nitrogenized Super-phosphate of Lime,	\$50
Do No. 1 do do do	45
Do Potash Phosphate, for Grass and Grain } Crops, Wheat, Rye, Oats, Corn, Barley, }	35
Do Cotton and Tobacco Fertilizers, -	40

In sacks of 100 pounds each.
FRED. MCCREADY,
143 Fulton Street, New York.

E. P. Nash's Pianos.

The North Carolina Christian Advocate, of a recent date, says:
PIANOS.—It is supposed that E. P. Nash, of Petersburg, has sold more Pianos than one else in the South. His Pianos have given general satisfaction in North Carolina.

Pianos on Trial. Payment Withheld.

We propose to purchasers of Piano Fortes to take our Instruments on trial in order to test what we say of their quality before paying for them.

Twenty years experience on our part satisfies our own minds, and we could get over fifteen hundred persons to unite with us in the opinion, that no establishment, North or South, can possibly furnish better or cheaper, instruments than we do.

mar th. E. P. NASH.

A Valuable Albemarle Estate in Market.

I offer for sale the farm upon which I reside, containing 1,038 acres, of very fertile land, with S. E. exposure, and within 5 miles of a depot on the Central Railroad, and 8 of the University of Virginia. It is in fine condition, very productive, and remarkable for healthfulness. The buildings are spacious and substantial; wood and water abundant.

TERMS—Easy; a large part of the money may remain at long credits.

Also, a farm in Upper Fauquier, of 644 acres, valuable for grain and grazing.

Address me at Charlottesville.
mar 3t D. G. SMITH.

Farm for Sale.

MACCLESFIELD is situated on James River, in Isle of Wight county, distance about 23 miles from Norfolk; a trip to and from each place, in sail-boats, is easily made in a day. It contains about 500 ACRES of land, 75 of which is marsh and fine for grazing. There are about 100 acres of arable land, the soil of which is well suited to the growth of corn, wheat, and particularly the root crops and vegetables. The balance of the land is thickly set with second and original growth pine, a great quantity of which may be spared. The improvements consists of a commodious dwelling (not quite fini-hed) and every necessary out-house—all nearly new. For further particulars, address

W. P. JORDAN, Smithfield,
Isle of Wight Co., Va.
mar 3t

FOR SALE,

My FARM, in Powhatan County, 7 miles South-west of the Courthouse, on the Appomattox river, containing 667½ acres, nearly half in original woods, with a great quantity of fine timber. Improvements, a brick dwelling of two stories, built of the best materials, under my own direction—all other buildings of suitable dimensions, and arranged according to my own taste.

As a residence it is not inferior to any in the county, whether in regard to pleasantness or health. Col. H. L. Hopkins resides on the premises, and is authorized to contract for the sale of the same.

mar tf ABNER CRUMP.

Emery's Corn Planters,

Highly approved by many Planters in Virginia. For sale by THOS. BRANCH & SONS, Petersburg, Va.

Seymour's

GRAIN and GUANO BROAD CAST SOWER.—
For sale by THOS. BRANCH & SONS, Petersburg, Va.

Kentucky Blue Grass Seed.

A very superior article, received direct from the West, by THOS. BRANCH & SONS, Petersburg, Va.
mar 2t

SAMUEL S. COTTRELL,
Saddle and Harness Manufacturer,

Wholesale and Retail,
No. 118 Main St., RICHMOND, VA.

Having received the first premium at the Fair of the Virginia Mechanics' Institute, in 1854, and a Silver Medal at the Fair of the same Institute in 1855, feels confident he can please all persons in want of any article in his line.
March 1857—1y



**Roult's Premium Cultivator,
Or Reversible Double Shovel Side Wipe.**

THIS Cultivator or Side Wipe, weighing only *fifty three pounds!* is constructed after the manner of the gang shovel plough of three tines. Its chief *peculiarity* consists in a wrought iron beam, with two attachments, branching from it on either side, so as to give it the shape of a triangle. This beam and attachments are curved at the ends so as to rest on the ground, thus affording shafts on which to fix the hoes or shovels. The hoes are pointed at both ends, constituting a double shovel, and by means of a cuff underneath, at the centre, they are keyed to the shafts, and may have the cutting ends reversed at the pleasure of the ploughman, merely by the removal of the keys.

For economy, durability, lightness of draught and effectiveness of its operation, this implement commends itself to the farmer, as one of the best in use for the cultivation of corn.

A premium was awarded it at the late State Agricultural Fair, and also to the Corn Planter and Seed Drill exhibited by the subscriber at the same time.

These several implements are manufactured of good materials, and in the best manner, by the subscriber, at Somerset, Orange County, Va.
mar 3t A. P. ROUNT, P. M.

MANNY'S REAPER.

As Agent for the sale of "Manny's Combined Reaping and Mowing Machine," I will furnish printed information or machines on application by letter. Fifteen years experience in the use of different reaping machines has convinced me that this is the simplest, strongest, and every way best adapted to the necessities of the farmer. Wheat, oats, rye, clover, grass, clover and Timothy seed, may all be cut and saved better than any other implement. During the harvest of 1856, I secured with two of these reapers (driven by my sons, one 11 and the other 14 years of age) nearly 300 acres of wheat, oats and grass. Its capacity with two horses, at the gait of a plow team, is from 10 to 15 acres per day; saving from one to two bushels of grain per acre more than by cradling. Cuts equally as well in wet or dry grass, or grain.

Price, delivered in Richmond, Alexandria, or Baltimore, for large sized machines, \$150. Address
ISAAC IRVINE HITE,
mar 3t White Post P. O., Clarke Co. Va.

**Manny's Mower and Reaper,
With Wood's Improvement.**

I am now receiving orders for these machines, and will furnish them at manufacturer's prices. These machines proved themselves in the last harvest to be the best in use, and have been much improved since that time. I warrant them to give entire satisfaction. Persons wanting them will please send in their orders as soon as possible, or I may not be able to furnish them.
DRAYTON G. MEADE,
Agricultural Warehouse, No. 12 Fairfax st.
mar 6t Alexandria, Va.

HORSE TONIC

For improving the condition of Horses and Mules, giving them an appetite, relieving them of Hidebound, Bouts, Surfeit Worms, Mange, Chronic Cough, Roaring, and all internal diseases, and improving their skin and hair. Can be left off after the animal is improved without his falling back to his first poor condition. Can be used without regard to work or weather. Warranted to be no quack humbug, but put up and sold only by the manufacturers.

DUVAL & NORTON,
Agricultural Druggists and Chemists,
mar 3t Richmond, Va.

TO FARMERS & GARDENERS.

The subscribers offer for sale 40,000 barrels of their
New and Improved Poudrette,

Manufactured from the night soil of New York city in lots to suit purchasers. This article (greatly improved within the last two years) has been in the market for eighteen years, and still defies competition, as a manure for Corn and Garden Vegetables, being *cheaper, more powerful than any other*, and at the same time *free from disagreeable odor*. Two barrels (\$3 worth) will manure an acre of corn in the hill, will save two-thirds in labor, will cause it to come up quicker, to grow faster, ripen earlier, and will bring a larger crop on poor ground than any other fertilizer, and is also a preventative of the cut worm; also it does not injure the seed to be put in contact with it.

The L. M. Co. point to their long-standing reputation, and the large capital (\$100,000) invested in their business, as a guarantee that the article they make shall always be of such quality as to command a ready sale.

Price, delivered in the city, free of charge and other expense:

One barrel,	\$2 00
Two barrels,	3 50
Five barrels,	8 00
Six barrels,	9 50

And at the rate of \$1 50 per barrel for any quantity over six barrels.

A pamphlet, containing every instruction, will be sent (free) to any one applying for the same. Our address is

THE LODI MANUFACTURING Co.
mar tf Office, 60 Cortlandt st., New York.

**A DESIRABLE FARM FOR SALE
IN RAPPAHANNOCK.**

The subscriber wishes to sell his farm in Rappahannock Co., 3 miles from Washington, the County seat on the Sperryville and Rappahannock Turnpike, and 3 miles from the village of Sperryville. This farm adjoins the lands of H. G. Moffett, Willis Browning, Mrs. M. Buckner, Chas. Green, G. Freeman, Jno. A. Browning, and Mrs. Sarah T. Ambler, and is in a most desirable neighborhood in every respect, containing 361 or 362 acres well adapted to Corn, Wheat and Oats, as well as Grass. It is at present almost entirely in grass Has a South Eastern exposure. Some 50 acres, well watered with the purest mountain streams. Has some excellent stone wall, a good stouë dwelling house with six rooms. The out houses are indifferent. Persons wishing to purchase will address the undersigned at Sperryville, Rappahannock Co., Va.

A. M. WILLIS.
Feb 1857—4t

TO COTTON PLANTERS.

The Cotton Planter's Manual, being a compilation of facts from the best authorities on the culture of cotton, its natural history, chemical analysis, trade and consumption, and embracing a history of cotton and the cotten gin. By J. A. TURNER. Price \$1.

GARDENING FOR THE SOUTH.

By W. N. White of Athens Georgia, A most complete manual for every department of Horticulture, embracing the Vegetable Garden, the Fruit Garden, the Flower Garden, and the Pleasure Grounds, adapted particularly to the Southern States. Price \$1 25.

To be obtained of all Booksellers, or sent by us prepaid to any part of the Union on receipt of price.

C. M. SAXTON & CO,
Agricultural Book Publishers,
140 Fulton Street, New York.

Feb 1857—2t

Agents for Petersburg, Messrs. A. K. Phillips & Co., Agents for Fredericksburg, also from authorized agents at Alexandria and Norfolk. Agencies will be established at other distant points, for the public convenience.

Terms *cash*, or approved city acceptances. Orders, and letters of enquiry, addressed the undersigned will meet with prompt attention.

In connection with the above—possessing superior advantages for the business, the undersigned will give strict attention to the purchase and sale of *Peruvian and other Guanos*, assuring their agricultural friends, and the public, that the utmost reliance may be placed in their fidelity in furnishing *pure articles*, and on terms equally favorable with any house engaged in the trade.

JOHN S. REESE & CO.,

No. 10, Exchange Building, Baltimore.

February 1857.

IMPORTED SCRIVINGTON,

The Property of Mr. R. H. Dulany, of Welbourn^c Virginia.



SCRIVINGTON is a rich bay, with black legs, is five years old, stands full 16 hands 1 inch high, of strong bone, fine symmetry, superior action, quite sound and free from all natural defects. He was got by that noted horse Hambleton Hero, the property of Mr. Robinson, of Bridge Mill. His dam by Splendour, gr. d. by Grey Premier, gr. g. d. by Scrivington; she was supposed to be the best Cleveland Mare in her day, in Great Britain.

HAMBLETON HERO was got by Victory, his Dam was bred by Mr. J. Stainthorp, of West Rounton, and was got by Barnaby, Grandam by Black Legs; gr. g. d. by Trenholme; gr. gr. g. d. by Beat's Horse; gr. gr. g. by Knox's Old Horse, (all Cleveland bred horses); his dam for being the best Cleveland Mare obtained the Premium of 15 Sovereigns in 1828, at Lord Feverham's Show. Victory was got by Mr. J. Milner's Volunteer; Dam by Mr. L. Stephenson's Steam; grandam by Mr. L. Stephenson's noted Old Cleveland Horse of Cherry Burton. Barnaby was got by Golden Hero.

SPLENDOUR when 3 years old, gained the Premium at Bridlington, given by the East Riding Agricultural Society, bearing Mr. Waller's Greylock, Caro, and four others. In April 1845, when 4 years old he gained the East Cumberland Agricultural Society's premium at Carlisle; in October of that year, he gained the Royal Agricultural Society's premium at Dumfries, beating eight of the crack horses in England and Scotland, two of which were thorough bred. Splendour also beat Greylock when three years old, who had defeated fifty-three of the best Cleveland Stallions in England, and was never beaten but by Splendour.

SCRIVINGTON'S Dam was bred by Mr. Taylor, of Barrow Mill, and when 5 years old, gained the Prize at Penrith in 1852, and their offspring gained the most prizes in succession at Carlisle and Penrith, of any Cleveland breed in England.

Scrivington will be let to mares at the residence of his owner near Upperville, and at Col. R. S. Wright, Wheatland Loudoun Co., at thirty dollars the season or fifty dollars to insure. Pasturage, &c. at usual rates Season commences 25th of March.

February 1857.—3t

S. McGRUDER'S SONS,

SOLE AGENT IN RICHMOND, FOR

REESE'S MANIPULATED GUANO.

AND

DeBurg's Superphosphate of Lime.

February 1857.

P. HORTON KEACH,

No. 91, Main Street, Richmond,



Agent for the sale of Messrs. HUNT & WEBSTER'S improved

"Family Sewing Machines."

Also, manufacturer and dealer in Ladies dress Trimmings, Hosiery, Gloves, Yarns, Worsted, Fancy Goods, &c.

Also, manufacturer of BANNERS, FLAGS and REGALIA of every description.

N. B.—Instruction given gratis to purchasers of Sewing Machines. Feb. 1857.

Valuable Farm for Sale.

BRUNSWICK Farm, containing upwards of 800 acres, lying in Botetourt county, on Catawba Creek, four miles from Fincastle, some 70 acres of which are bottom lands, as productive as any lands in the state.



The improvements consist of a comfortable frame

DWELLING-HOUSE,

with six rooms, all necessary out-houses. A large STONE STABLE and good Barns, and a

SAW AND GRIST MILL,

with water-power sufficient for the largest manufacturing purposes; a good

Apple Orchard, Garden, and Limestone Springs in abundance.

The land is principally limestone, and all good tobacco, wheat and grass land. The wheat crop seeded, and every thing in the way of hay, straw and corn fodder, will be sold together at an unprecedented low price, as the owner is anxious to close his farming operations. It is offered lower than 1000 acres of the same tract without improvements has been sold for, and at a price that makes it the greatest bargain in land known in that section.

TERMS.—One-third cash, when possession is given, and the balance in one and two years, without interest.

For further particulars, address the proprietors of the Southern Planter. Feb. 1857—1f

MITCHELL & TYLER,

DEALERS IN

Watches, Clocks, Jewellery, Silver and Plated Ware, Military and Fancy Goods;

RICHMOND, VA.

Sept 1856—1y

SOUTHERN FEMALE INSTITUTE.

RICHMOND, VA.

The Principals of the Southern Female Institute, with this announcement of its 7th session, tender their thanks to the Public for the liberal and increasing patronage they have received at its hands. As this Institution had its origin in individual enterprise and has been fostered neither by aid from the State, nor by denominational influence, it is with pride that they point to the appended list of patrons, believing as they do that it evinces the estimation in which their labours in the cause of female education are held by men of eminence and high character.

The Principals are Virginians, and were educated in Va. They selected teaching for a Profession and have devoted themselves earnestly to it for a number of years in their native state. Relying upon the support of the Southern people they established, six years ago, this Institution, Southern in every feature and in all its teachings. No expense has been spared to make it worthy of patronage, and they hope to be supported in the effort to make the South independent of Northern schools and teachers.

The Boarding Department will hereafter be under the immediate and sole control of D. Lee Powell who has taken a large new house on the South-East corner of 1st and Franklin Streets, for the purpose of accommodating a number of young ladies as Boarders.

The Principals are determined that the opportunities offered for acquiring a thorough knowledge of the French and other modern Languages in their school, shall be equal to those of any institution in the country. One or more Parisian ladies will reside in the family of Mr. Powell, who will be required to converse familiarly all in French with the Boarders.

The most experienced and accomplished teachers of music, vocal and instrumental, in the city will be employed, and every effort will be made to secure improvement in this valuable accomplishment. It will be the duty of one of the teachers to see that the music scholars practice regularly and *properly*.

TERMS.

Board for 9 mos., washing and lights extra.....	\$200,00	Preparatory Department	\$300
Music on Piano, Harp or Guitar at Professors		Modern Languages in classes each.....	\$20
charges, Tuition in English.....	\$50	Drawing and Painting each from	\$20 to \$50
Use of Piano per month.			

We beg leave to refer to the following list of patrons who have now or have had daughters in the Institution. His Excellency, Henry A. Wise, Gov. of Va.

Lieut. M. F. Maury, Nat. Observatory, N. Beverley Tucker, Thomas Green, Rev. D. S. Daggett, Washington, D. C.

Dr. Beverley R. Welford, A. A. Morson, Esq., Conway Robinson, James Lyons, Joseph R. Anderson, P. R. Grafton, Rev. Ch. H. Read, Rev. Geo. Woodbridge, Hon. A. B. Holladay, Col. Geo. W. Mosford, Charles Ellett, Jr., Charles Gennett, Lewis D. Crenshaw, Wm. R. Hill, Capt. Charles Dimmock, S. J. Rutherford, Richmond, Va.

Col. H. B. Powell, Loudoun Co., Va. Revd. P. Slaughter, Warrenton, R. E. Scott, Esq., P. St. Geo. Cocke, Powhatan Co., Va. Richard Baylor, Essex. Wm. H. Clark, Halifax. J. R. Edmunds, Mrs. I. B. Harrison, Lower Brandon, Va. Hon. Geo. H. Lee, Clarksburg, Va. Thomas B. Barton, Esq., Thomas P. Knox, Wm. W. White, Fredericksburg, Va. Dr. A. H. Mason, Falmouth. Dr. Wm. C. Straine, Middleburg, Louisa, Va. Dr. H. A. Buttolph, Trenton, New Jersey.

For further information, apply to Principals.

Richmond, June 1, 1856.—tf

D. LEE POWELL, }
R. J. MORRISON, }

AGRICULTURAL REGISTRY AND EXCHANGE OFFICE,

For the sale and purchase of Lands, Negroes, Horses, Stock of every description, Agricultural Implements, Patent Rights, Produce, Fertilizers, &c.

The undersigned, in consequence of repeated applications, the advice and suggestion of friends, and the opportunities of seeing the great necessity for, and the great advantage to be derived by the Farmers and others of Virginia and North Carolina in having a well organized medium of communication for the above purposes, has determined to open at the Office of the Southern Planter, in this city, boxes for the registration of the above subjects, both for those wishing to sell as well as those having to purchase.

Through the medium of such an agency persons who wish to buy or sell anything, Overseers looking for situations and those wishing to employ them, can have access to the *Registers*, be at once thrown into communication with the opposite party, and thus be enabled to effect a speedy sale, purchase, or negotiation at a small cost.

A small uniform registration fee will be charged in all cases, to be paid in advance. If advertisements are ordered, the money for the cost thereof must accompany the order.

A moderate commission charged on consignments or purchases.

Richmond, March 1857.

N. AUGUST,
113 Main Street.

SUPER PHOSPHATE LIME.

The subscriber continues to manufacture the above at his Bone Mill near the City, the quality is fully equal to any manufactured out of the State, its price is \$40 per ton. For expressing this will be found invaluable, and during the winter is the best time to apply it. Those in want can always be supplied upon one week's notice.

Jan 1857.

R. B. DUVAL.