

VOL. XVII.

[DECEMBER.]

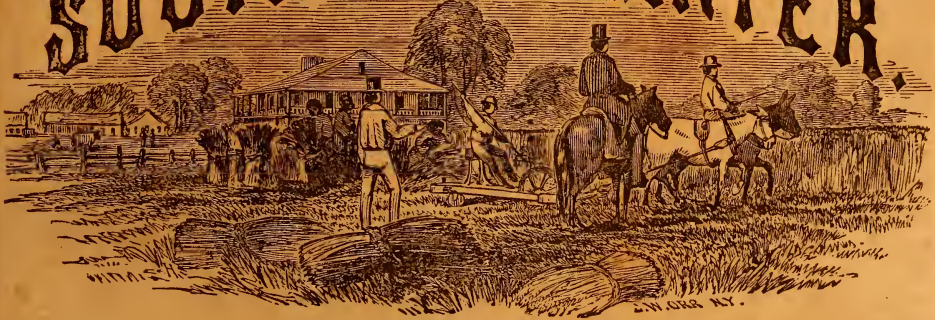
No. 12.

PUBLISHED MONTHLY.

RUFFIN & AUGUST, PROPRIETORS.

FRANK: G. RUFFIN, EDITOR.

# THE SOUTHERN PLANTER



DEVOTED TO

AGRICULTURE, HORTICULTURE,

AND THE

HOUSEHOLD ARTS.

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

1857.

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## THE SOUTHERN PLANTER

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

### TERMS:

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

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and we wish it distinctly understood that we take the risk only when this condition is complied with.

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# THE SOUTHERN PLANTER



*Devoted to Agriculture, Horticulture, and the Household Arts.*

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

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

FRANK. G. RUFFIN, EDITOR.

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

VOL. XVII.

RICHMOND, VA., DECEMBER, 1857.

NO. 12.

## Killing Hogs.

MR. EDITOR:

Will you be kind enough to say, in a future "Planter," what are the *essentials* in salting and curing pork? Some use merely smoke; some hot fires, as for tobacco; some keep in salt only for ten days; others six weeks. Many prefer to smoke on damp days, and others object to smoke in "givey" weather. Please enlighten us and oblige more than one subscriber.

Respectfully yours, &c.  
*Cascade, Pittsylvania County, Va.*

Perhaps we had better say something more on the subject of making bacon, than an answer to our correspondent's letter calls for. Common as is the business, good bacon is not always made.

In the first place, the hogs ought to be fattened so as to be ready by the 15th to 20th of November. To say nothing about the economy of this practice, which we spoke of, and gave the philosophy of, in the last number of this paper, a hog killed before the arrival of the winter will make better meat than if slaughtered when a freeze may be anticipated. The salt will strike through better, and the meat will be more uniformly flavoured by it, as well as better preserved. Nor is there any danger in an early killing, with ordinary pru-

dence. For many years our period of killing averaged the 17th of November, and on only one occasion did we suffer loss, and then only a partial one, from a warm rain, which followed suddenly a hard frost, clearing up with a foggy spell.

It is best always to kill the over-evening, and to stick no more hogs than can be well butchered by nightfall. The operation is thus more cleanly, and the risk of loss very much diminished, for a small number can be more expeditiously cut out and packed away on the following morning. Starting at from 3 to 4 o'clock in the afternoon, *with all things ready*, hot water, scraping places, knives, gammon sticks and poles to hang on, ten hands can dress ten or fifteen good sized hogs without racing about it.\*

\* Let no one try to scrape the fat from the entrails with a knife. But let one or two careful hands take the entrails and begin at the stomach, gently pulling off the fat with one hand and following the course of the intestines to the end. It is done somewhat after the manner of tearing off cotton from a shirt; and when finished, the fat instead of presenting a disgusting mass of foul scraps, will be found to be a neat and handsome bunch of clean grease. The entrails of a mutton may be treated in the same way; a beef's cannot. Try this, and keep at it until you learn.

Let them hang out all night, and if they are very fat and large, and you fear the weather, split them down the chine on one side, or both, but not severing the carcass, and cut around the neck so that the head will hang by the neck bone, then press the spare-ribs open with a short stick, thrust in cross-wise. This will ensure their being cool in the morning. Of course some of the negroes must be detailed to watch them during the night, which will be no grievance, as most of them will be preparing the chitterlings and other perquisites on the spot.

The whole killing may thus be disposed of by detachment with but little additional labour, and with much comfort and economy, and much less risk of loss from sudden changes of weather.

Commence to pack next morning at day-break; and try and get through before the sun starts the flies out to blow the meat. You will find the animal heat expelled, and the carcass firm enough to cut up well, and just in proper condition to receive the salt. Everybody knows how to salt pork; so we have only to say, that for the hams and shoulders, a tea-spoonful of saltpetre to each joint, to colour the flesh, and as much black pepper, to keep off the fly, mixed up in a saucer and kept at hand, and well rubbed in, is a good application; and if there is poison in the saltpetre, as some French savan has lately charged, it must be very slow indeed in its operation, as we know many who have lingered to a good old age under an almost daily dose of it.

Whether it is necessary to cut up the pork cold we cannot say. The best bacon-makers we know always do; but as good bacon as we ever heard of was made by a gentleman—not of our acquaintance, before our day, in fact—who invariably salted his while the meat was warm, under the conviction that in that condition it took the salt better. But it certainly handles better when (not frozen, for then you are apt to have it spoiled, but) cold and stiff.

When packed away—in troughs, or boxes, or in regular layers, as you may prefer—the different pieces to themselves, for the convenience of future reference, as one may say, let it remain three weeks, or longer as may suit your convenience. The best housekeepers we know say three weeks, and we have kept it six

without harm. Then take it out, hang it up, and smoke it. Smoke it until it becomes of a good "bacon colour," and then stop, except in warm "givey" weather, when it should be slightly smoked by a chip or saw-dust fire kindled in the morning, and not renewed during the day.

What is needed to cure bacon is smoke; not fire. The philosophy of it is very simple: wood, in burning, gives off a pungent oil, which escapes with the smoke in the form of vapour. This oil, called by the chemists kreosote, possesses a very singular power of preserving meat from putrefaction. It is absorbed by the bacon from the smoke in which it is suspended, and is supposed to coagulate its albumen, and thus protect it from the air, which is the great cause and medium of putrefaction. At all events it preserves it; and we have partaken of hams cured without smoke, but by an application of kreosote in solution, that were just as good as any other, and had the characteristic taste of smoked bacon, a taste, indeed, which ordinary bacon derives from the kreosote of the smoke. There is, then, no use in more fire than will make a plenty of smoke; there is harm rather: for too much heat will make the bacon drip, and it may thus lose some of the very preservative it has absorbed, as it certainly will lose a portion of its weight.

In damp, warm weather, it should be smoked again, as a precaution merely: the operation may not have been completely performed at first; or the dripping which occurs in such weather may run off a portion of the insoluble coagulum which has been formed; and the flies are apt to be about in such weather and do harm, unless smoked out.

When warm weather sets in for good, the joints should be taken down and ashed well with hickory ashes, and put in bags, or not, as one pleases. If they have been properly managed previously they will not need it at all. But the ashes are desirable. They help to preserve the meat, and are a sort of additional salting. Ashes of themselves, if literally applied, will act in place of salt. During the Revolution a tory in Albemarle, a very honest man by the way, as his descendants still are, was refused salt to cure his pork; and his wife made as good bacon that year, with one peck of salt

and an abundance of hickory ashes to the six hundred pounds, as the family ever had.

In applying the ashes, it is well to have a bucket of molasses, and apply a portion with a white-washing brush to each joint. When well smeared rub on the ashes, which will thus adhere firmly and make an impenetrable cement. Then re-hang the meat with the joints down. It will save waste in this way by diminishing the dripping.

And so we have endeavoured to "enlighten" our respected correspondent and the reader at large on killing hogs and making bacon. We think all who follow the mode proposed will have good *raw* bacon. But a ham on the table is another affair; and as we expect to be invited somewhere to eat bacon cured after our directions, and hold ourselves bound in civility to accept every invitation to dine that we possibly can, we beg leave to say a word on the cooking. Be good enough, kind hosts, to have the ham, though we prefer a shoulder, especially if there be brawn upon it, weighing about twelve pounds, put in soak the over-night, and put on the fire in cold water when the cook sends in breakfast. If we are to take a long walk over the plantation, or a ride around the neighbourhood, we will take cabbage also: otherwise not. Please be particular to let it come to table with the skin on.

#### A Pleasant Fable for our Indebted Subscribers.

We lately read how a good priest in some wine growing Province of France had so won upon his parishoners, that to show their estimate of his ministrations, they determined to present him with a bottle of wine apiece, and gave him notice of their intention. As the parish was quite a large one, the happy priest prepared a puncheon of goodly proportions to hold his testimonial, for such they called it after the fashion of the day. At an appointed time they met at the good man's house, and were conducted to the cellar, where, into the selected puncheon each man poured his offering, and filled it to the brim. Thanking them heartily, the priest proposed that they should each take a glass of the beverage, when, to their astonishment, it turned out to be pure water. It seems that those worthy people had all brought water, each calculating that his

neighbours would bring wine, and that he might venture to bring water, the trick being a safe one amid so much wine.

The consequence was, that each parishoner was better off by one bottle of wine, worth a mere trifle; while the poor priest, who had worked hard all the year, lost the whole of his promised supply.

#### MORAL.

Each of you owes us two dollars or more. Do not impoverish us by promises to pay, but fill our chest with the real stuff.

You will find your bill in this number of the Planter.

#### English Blue Breasted Red Game Fowls.

We are indebted to Mr. J. McL. Anderson, of Caroline, for a fine pair of game fowls of the above breed. They are a part of the very fine stock of game fowls which he had on exhibition at the late Fair, and a fine judge says they were the best pair he had. If so, we are doubly indebted to Mr. Anderson, first, for the chickens, and second, for the spirit which prompted him to give us his best pair.

The same judge, and we believe he is a very fine one, said, that as a collection of game fowls, Mr. Anderson's were the best he had ever seen. We are glad to hear it, and hope he will keep up the breed. They, and a few of their crosses on some other breeds are worth, in our opinion, all the Shanghais, Chit-tagongs and Bramah Pootras that were ever brought into this State.

#### The Different Fairs of Virginia.

It would be "Tailors news," a mere repetition of what has appeared in the different local papers, to give the particulars of the late Fairs of this State. It is only necessary to say that all of them have succeeded. The Fair here, especially, was as successful as usual, and if we consider the panic and the weather, its success was very remarkable.

#### Good Sale of Tobacco.

The following list of prices obtained by P. Jefferson Archer, commission merchant of this city, shows that good tobacco does not go a begging even in hard times. It is a part of the crop of our friend Dr. R. F. Taylor, of Amelia, whose excellent essay on the cultivation of tobacco in last year's issue of the

Planter, will be recollected by many of our readers. He shows, what many people do not credit, that a man may write what he knows without losing the ability to practice it. How much credit is respectively due to the Planter and the merchant, we cannot say.

*Sales of Tobacco* (English shipping) by P. JEFFERSON ARCHER.

		November 6th, 1857.	
Dr. R. F. Taylor,	No. 1.	@ \$15.	Amelia Co.
"	" 2.	" 15.	"
"	" 3.	" 15.	"
"	" 4.	" 15.	"
"	" 5.	" 15.	"
"	" 6.	" 15.	"
"	" 7.	" 15.	"
"	" 8.	" 15.	"
"	" 9.	" 13.	"

### Agricultural Professorship in the University of Virginia.

As most of the proceedings in relation to the proposition of Col. Cocke to endow a Professorship of Agriculture in the University of Virginia, have been published in this paper, we have procured for this number of the Planter, the action of the Farmers' Assembly on the reports submitted at its late session, that our readers may be informed of the present position of the subject. The report of the majority was adopted by the Assembly, and a Committee was appointed under the second resolution, consisting of Messrs. J. Ravenscroft Jones, W. H. Macfarland, George Townes, William C. Wickham, and Branch J. Worsham.

#### REPORT.

The Committee to whom was referred so much of the Report of the President of the Society, and the Executive Committee, as relates to Agricultural Education and the Report of the Committee on the proposition of Philip St. George Cocke, Esq., to endow a Professorship of Agriculture in the University of Virginia, respectfully report:

That they concur in the views of the importance of Agricultural Education presented in the papers before them, and in deploring the neglect of the Legislature hitherto, to attend to and provide therefor. They regard it as the highest duty of the Farmers' Assembly to address itself zealously to secure for the farming class the broadest advantages for progressive advancement and distinction in the science and practice of their vocation.

They are constrained to dissent, with all their respect for them, from the views of the Visitors of the University, respecting the adoption of the generous donation of Philip St. Geo. Cocke, Esq. It is quite familiar, in our own and other counties, to accede to any reasonable conditions, annexed to their donations, by the founders or patrons of new schools in Universities and Colleges. There are numerous examples of larger concessions than are proposed in the case before us. It is due to generous founders of public schools, and fit, as tending to encourage individual munificence in behalf of public ends, to admit of any fair qualification of their gifts, which is not at variance with either the due authority or policy of the State. Your Committee are convinced that the conditions annexed to the donation in question are in harmony with both public policy and sound principles. In their judgment it ought to be accepted, because it would in itself be a valuable acquisition—would have a benignant tendency in enlisting private liberality in the relief of public wants, and because the conditions would not diminish the chances of procuring proper Professors, or otherwise affect the public injuriously.

The conditions do not go beyond a praise-worthy solicitude in a public benefactor to secure for his State the largest benefits within the compass of his contribution to the common good. In the most unfavorable contingency which could occur, that, namely, of an irreconcilable difference between the founder of the Professorship and the Visitors, the school would be at most only for a time suspended; and your Committee submit, supposing the case to arise, that it would be a lesser evil than to be without it, or that the school should be indefinitely postponed. Then, again, the same enlightened generosity which is capable of dedicating twenty thousand dollars to the advancement of agricultural knowledge, hitherto so much neglected and overlooked, may be trusted not to defeat its own benevolent designs, by an unbecoming pertinacity in the choice of a Professor.

Your Committee conclude their hasty report by submitting the following resolutions:

*Resolved*, That it is important to secure the munificent donation of Philip St. Geo. Cocke, Esq., towards the endowment of the Professorship of Agriculture in the University of Virginia upon the terms heretofore approved by this Assembly, and annexed thereto in his communication tendering the donation and in his deed of conveyance.

*Resolved*, That a committee of five be appointed to petition the Legislature to accept the said donation, or cause the Visitors to accept it, and so to ordain as that the Professorship may be speedily established on a footing of entire equality with the other Professorships therein.

Mr. Minor, of Albemarle, moved to amend the Report and Resolutions by striking out the same and inserting the following:

The Report of the majority of the Committee, to which was referred the subject of Agricultural Education, recommends the establishment of a Department of Agriculture at the University, and of an Agricultural Institute elsewhere, on a cheaper scale of instruction, for the benefit of all classes.

Granting, for the sake of argument, that both are good in themselves, I believe that the attempt to start both at once will end in the failure to get the full benefit of either. To get both into useful operation, will require the annual interest of \$300,000, or thereabouts—a sum which we can hardly hope to raise. \$200,000 will barely suffice to purchase the necessary site for the buildings of the Agricultural Institute, and the land for the experimental farm, erect the buildings for the accommodation of Professors and students, and make a fund for the salary of Professors, and other necessary expenses, which are never in any college imposed entirely on the students. Less than half that sum, perhaps, will suffice for the Agricultural Department at the University, with three Professors.

But if both were equally within our hopes, in respect to the funds required, both are not equally useful and good in themselves. They who have been familiar with the classical schools of Virginia, since the University went into operation, need not be reminded how perfectly the *preparation* of the schools has advanced *pari passu* with the rise of the standard of attainments for graduation at the University. Whether the schools have pushed up the standard at the University, or the University has pulled up the schools as itself advanced, I need not now inquire. The fact is indisputable, that private enterprize has been fully equal to the task of preparing students for the classical departments of the University; so will private enterprize be equal to the work of preparing young men to attend the Agricultural Department at the University. Whatever standard of attainment may be reached in the Agricultural Department at the University, private Agricultural schools will soon spring up, fully able to teach those elementary branches of Agricultural Education proposed to be taught in the Agricultural Institute. It is a wise principle to leave to private enterprize all those interests of Society which private enterprize is fully equal to attain, and place under public control only such as are beyond the reach of individual effort. It was in the force of this principle that Mr. Jefferson said, "make the University and the schools will make themselves." The sage did not live to see the fulfilment of his prophecy; but we see it in the number and high reputation of the classical schools of Virginia. If we will erect a high standard of Agricultural Educa-

tion at the University, not ten years will pass before there will be numerous private Agricultural schools of as high grade as our classical schools: and it is not proposed to have a higher grade in the Agricultural Institute, for which we will have to raise \$200,000. If we establish the Institute, private enterprize cannot erect the standard of Agricultural Education on such a height as can be done by a Department of Agriculture at the University with three Professors. But if we will raise the money, say \$100,000, for an Agricultural Department of the University, Agricultural preparatory schools, as good as the proposed Institute, will make themselves without cost to us. Whereas, if we raise \$200,000 for an Agricultural Institute, we shall still, either now or hereafter, have also to raise the \$100,000 for the Agricultural Department. So I say, that the two parts of the system of Agricultural Education, proposed by the Report of the majority of the Committee, are not equally good; and being neither equally cheap, nor equally good, wisdom demands that we choose the cheaper and the better, since we cannot have both.

The Report of the majority recommends an application to the Legislature, in relation to Col. Cocke's donation, in which I cannot concur. I know no office in the Commonwealth which is at the same time so thankless and so full of care as a Visitor of the University. It is an office without pay—but not without trouble. There is never a meeting of the Board that clamour does not dog its action on some point. This was foreseen by the great men, who in wisdom ordained the organic laws of the Institution, and they placed the Visitors above the control of the Legislature even, and rendered it impossible to eject them from office except for failure to attend the meetings of the Board. If a Visitor attends the meetings and acts, his office cannot be taken away. He was intended to be as far above the control of faction, party spirit, and popular sentiment, as it was possible to place him. Like the judge, he needs this independence, derived from the tenure of his office. Whatever has been done in other States, by the mad spirit of fanaticism, in trampling down official independence, in those cases where it is most needed, the first blow at it is still to be struck in Virginia. It does not become this Assembly to strike it, with these views and conservative feelings. I cannot concur in the resolution of the majority of the Committee, which proposes to appoint a committee to apply to the Legislature to accept the donation of Col. Cocke, or cause the Visitors to accept it.

Unable to concur with the majority of the Committee in these respects, as well as in some other views expressed in their report, I recommend the following resolutions as a substitute for theirs:

1. *Resolved*, That this Assembly will make

an effort to raise, by private donations and by aid from the Legislature, the sum of \$100,000, to be invested, as received, in Virginia State Stocks, and to form a fund of which the annual interest shall be forever applied to the support of Agricultural Education at the University of the State, on such a scale of instruction as may hereafter be decided on.

2. *Resolved*, That donations to this fund may be by bond of the donor, bearing interest from the day on which it shall be ascertained and declared that the sum of \$100,000 is raised, or secured to be raised, and payable in annual instalments to suit the wishes of the donor. Provided that the interest on the donation be paid each year, and the payment of the principal be not deferred beyond — years.

3. *Resolved*, That a proper person ought to be appointed, whose abilities befit him, and whose time may allow him to appeal to the farmers in person to contribute to this work.

4. *Resolved*, That a committee be appointed to apply to the Legislature to grant to the aid of this work, from the public treasures, as much as the farmers raise by private donations.

5. *Resolved*, That this Assembly deeply deplures the circumstances which have caused the failure of Col. Cocke's donation; and in view of his letter of the 15th May last to Hon. Wm. C. Rives, in which he says that the "Farmers' Assembly and himself concurring, can alone modify the terms of the endowment," does hereby disclaim all intention to seek to control Col. Cocke in making such changes in the conditions of his donation as his own liberality, public spirit and intelligence may suggest to himself.

### More Sorgho Molasses.

In addition to the sample of Molasses from the Sorgho, sent us by our friend, Mr. Jones, of Surry, we have to acknowledge the receipt of two very good articles of the same kind, sent us by Dr. Gantt, of Albemarle, and Mr. Harris, of Louisa.

We thank all these gentlemen for their presents, but beg them to pause awhile before they go into the market to sell molasses. The following, from the *Working Farmer*, may somewhat damp their ardour on the subject. And the extracts from Gov. Hammond, of South Carolina, letters, on the same subject, published in this number, by Mr. E. Ruffin, will be found instructive:

As yet we have seen no proof that sugar can be profitably made from the juice in this latitude; and although at the present and late prices of molasses, the boiling of the Sorgho juice to a rich syrup will pay a profit, still

such prices cannot be maintained for any considerable length of time. Molasses of common qualities, which from 1832 to 1852 were sold in this market at from 12 to 20 cents per gallon, have of late brought three times those prices. As the consumption of sugar increases, the production will also increase, and as the consumption of molasses does not increase in the same ratio, it being a refuse of sugar making, its price must for the future range relatively lower. The whole cause of the increased prices has been from the immense increase in the distillations of molasses for export; and it is to be hoped that as the grape crops of France are good this year, at least five times that of last year, the brandy makers of France will not require Yankee molasses rum to make imitations of brandy. The production of American wines will also tend largely to reduce the consumption of alcohol in all its forms, and thus leave the molasses market to regulate itself as formerly.

In a conversation with a member of the house of Vilmorin, Andrieux & Co., of Paris, who has recently passed through the wine districts of France, we learned that the grape crop was again prosperous, and that prices of common wines would doubtless be low next year.

These remarks, however, as to the value of the Sorgho, are only intended to apply to this latitude, as we know nothing practically of its value when grown in the Southern States for sugar-making; we fear, however, that even there it cannot be successfully used as a sugar-making plant, and it must depend upon the demand for molasses for family use, distillation, etc.

*For the Southern Planter.*

### Refreshments and Drinking at the Fair

HENRICO, Nov. 4, 1857.

It seems that after the past exhibition, an amendment suggests itself in the order of arrangements, viz: the abolition of all establishments on the grounds, either for eating or drinking purposes. The first should be shut out chiefly on account of the unconscionable charges made for a small piece of bacon and bread; and secondly, because the viands aforesaid are served up on much greased and little washed plates.

Drinking saloons should especially be banished from the premises; for it is a well established fact, that some persons exhibit a strong tendency to attain that felicitous state vulgarly known as "tight," if an opportunity be afforded them. Such persons would not obtain admittance to the grounds in this state, and if no liquors were permitted on the spot, the chances of this nuisance would be abated very much.— I observed one of this class, so far lost to all moral influences, that he forgot the reverence to be paid to parents, and after depositing a



brick in his hat to make his assault more deadly, commenced butting his mother (Earth) in a savage manner. So hardened was this wretch, that he put the wrong end of his cigar in his mouth, without emotion. These individuals might be entertained outside with a visit to the world-renowned Two-Headed Calf, or the celebrated Little Finger.

The certainty of stale bread, and the probability of drunken men ought not longer to be tolerated on the Fair Grounds; and if the latter is not seen to, the attendance will certainly be diminished, at least of ladies. Y.

MOUNT SOLON, VA., Nov. 4th, 1857.

*Editor Southern Planter:*

DEAR SIR:—Enclosed you will find several stalks of wheat with quite a number of lice upon them resembling the cabbage louse, which I gathered from one of my neighbor's fields, Mr. Robert Linn. He sowed the wheat the first week in September, it came up and grew off luxuriantly, and was as promising as any wheat he had ever sown until three weeks ago, since which it has gone back rapidly, and now looks as if two thirds of it was killed out.

This insect seems to absorb the juice from the stalks, and in this way kill the plant. They are found as far down as they can creep, and usually on the under side of the blade—shaded from the sun.

The field of another neighbor is said to be affected—the first two, and only instances I have heard of where this new enemy has appeared. Can you give us any information in regard to it?

I will observe its progress more carefully and report any thing that may interest your readers in regard to it. Yours truly,

J. MARSHALL McCUE.

The blades of wheat that accompanied our correspondent's letter were so dry when they reached us that we had no opportunity to examine the insects he speaks of. If any one can throw light on this subject he will please do so.

### Winter Management of Sheep.

Mr. George Campbell, of Vermont, the well known sheep grower, furnishes to the Patent Office Report for 1854, the following article on the "Winter Management of Sheep:"

"Much of the success of the wool-grower depends upon the winter management of his flock. Sheep are animals which pay their owners better for good care and keeping than any other stock usually kept on a farm; but if fed with a stingy hand, or neglected, if suitable conveniences are waiting, they pay perhaps as poorly as any. The annual loss to the United States, resulting from a want of suitable sheds and other conveniences for the winter accommodation of sheep, is immense. The

promptings of self-interest would seem sufficient to induce our farmers to adopt a better system of management. No intelligent farmer of this day will attempt to deny the principle that warm enclosures are equivalent, to a certain extent, for food; a variety of well conducted experiments have conclusively demonstrated the fact. A large proportion of food consumed in winter is required for keeping up the animal heat, and consequently, in proportion as the apartments are warm, within certain limits, the less amount of food will be required. The other extreme, too close apartments, would be objectionable from the impurity of the air, and should be avoided. Sheep have very little to fear injury from this cause. The majority of those in our State suffer for the want of shelter, and a suitable quantity and variety in their winter food. Many flocks are brought to their winter quarters in fair condition, but are fed so sparingly that the growth of their wool is almost wholly arrested during the winter season, the fodder given them being only sufficient to sustain the vital functions. Under such circumstances the food consumed by them is in fact nearly lost. The owner has received no return in the increase of wool nor in bodily weight; and he will suffer further from a large per cent. of actual deaths before the time of shearing.

With such a course of management the profits of wool-growing will necessarily be small. If neither self-interest nor the feelings of humanity will induce the farmer to provide properly for his dependent flock, he will find it for his advantage to keep some other domestic animal, and I know of nothing more suitable for such men than a hardy goat. While I protest against the starving system, it would seem hardly necessary to caution farmers against the opposite extreme, too high feeding, which is also detrimental to the health and long life of the animal. While preparing sheep for the butcher, high feeding is necessary and proper, but for store sheep and breeding ewes, an over amount of fat, produced by high feeding, is decidedly injurious; and, aside from the attending expense to produce this state of things, it has a tendency to shorten the lives of the sheep and enfeeble the offspring. This forcing system of feeding brings animals to maturity early, but is productive of premature death.

The proper and most profitable mode of feeding, for breeding and store sheep, is that which will develop in them the highest degree of bodily vigor. Sheep fed in this manner would endure the fatigue of a long journey, while those high fed would fail, from excess of fat, and the scantily fed from muscular debility. Every wool-grower will find it for his interest to provide warm, capacious, and well ventilated sheds for his flocks, with a convenient access to pure water. The feeding racks should be made with good tight bottoms, in order that the chaff and seed, the most valuable

part of the hay, may not be lost. Such racks will also answer for feeding out roots and grain, and will avoid the necessity of having an extra lot of troughs for that purpose.

The different ages and classes of sheep should be properly assorted. This classification, however, must be left to the judgment of the breeder. The size of his flock, and his conveniences for keeping, will determine the extent of the classification. It will be necessary, in all flocks of considerable size, to place the strong and feeble in separate flocks. The breeding ewes should constitute another division, and so on with the lambs, keeping class and age by themselves.

In regard to the question, how often should sheep be fed? a difference of opinion among good managers exists. While one believes that twice a day is sufficient, another thinks it is desirable to feed three or four times; but the most important point, I apprehend, is to feed regularly, whether twice, three or four times a day. The writer feeds, at present, hay twice, one day: the next, hay in the morning and straw at night, and so on, giving hay and straw alternately, instead of hay; and beside, a feed of roots and grain is allowed at mid-day, allowing a half bushel of corn and cob, or oatmeal, mixed with two bushels of roots, to the one hundred head. As sheep are fond of a variety of food, it is desirable to make as many changes as practicable. If allowed constant access to pine or hemlock boughs through the winter, it will be conducive to their health. Salt is equally essential in winter as in summer, and should be kept constantly by them. Rock-salt, which is imported in large lumps, weighing from twenty to fifty pounds each, is the cheapest and best. Sheep are not liable to eat it in sufficient quantities as to ever injure them, as they can only get it by licking."

#### Cheap Way of Underdraining.

The following, from Gen. Harman of Wheatland, N. Y., we copy from the *New York Chronicle*. It is practical, and to-the point:

There is no one subject that demands more attention among farmers, than the underdraining of low and swampy lands. In passing through the farming districts, we see many large plats of land which are enclosed and the owners paying taxes on, which do not yield annually the cost of keeping them. Now these useless acres could be made to pay the interest of one hundred dollars for each, annually, while interest on the cost of improvement would not be one dollar an acre. Many have supposed as their works show, that an

open drain from twelve to eighteen inches deep and wide, is all that is required to make wet land productive.

In draining, the first step is to procure suitable tools for the business. Common drains should be dug fifteen inches on the top and three at the bottom, three feet deep on all soils free from stones. This size is the cheapest. If the banks are solid, the cheapest tile that I have used, is to lay in cedar, pine, blackash, or any green poles that will go down within six or eight inches of the bottom; they should be stepped on and crowded down solid; then fill in one third full of earth, pound it down with a paver's mallet; then fill the other third as before, and finish off.

One great difficulty in filling drains is, that the earth is left too loose, so that mice make holes which let in the water from the surface, which will soon spoil a drain that is made of stone, poles or brick. Water is carried under ground much cheaper than on the surface, and a field of several open drains is not good economy.—When covered under ground, they may be plowed over and rendered productive.—Where drains are needed in stony soils, the bottom of the ditch should be wide, so that one could stand and work in it; and stones laid so as to carry off the water. In some sections tile would be cheapest. No farmer who has wet lands should neglect to drain them because he cannot get tile.

Some plants of land are made dry by a ditch around them. Others will require several ditches through them. Such land, when made dry, will be the most productive. Carrots and potatoes will do well on such soils, and most of the spring crops. The grasses and hay from such soil will be worth twice as much as the same weight from lands that are too wet. If the wet lands which are enclosed in this state could be made dry, they would add millions to our farming products and our commerce.

Three spades are used to make narrow drains—one common one, one blade five inches wide and fourteen long, and one five inches at the top and three at the end of the blade, handle five feet long, so that one can stand on the top of the ditch in taking out the lowest part of the earth.

## VA. STATE AGRICULTURAL SOCIETY.

## FIFTH ANNUAL EXHIBITION.

The following Premiums were awarded at the Fifth Annual Exhibition of the Society, viz :

## BRANCH I.

*Experiments.*

No. 6. For Report of a series of Agricultural experiments, to Dr. Robert Harrison, of Prince George, \$25 00

16. For Report of experiments in feeding horses, and in ascertaining the yield of flour from wheat, to Wm. C. Knight, of Nottoway, 10 00

## BRANCH II.

*Written Communications.*

36. For Essay on superphosphate of lime, to Prof. Gilham, 50 00

37. For Report on the soils of Powhatan, Prof. Gilham, 50 00

In these communications, "on Scientific Agriculture, strictly and usefully applicable to practice," from Prof. Gilham, the Committee find a gratifying evidence of the beneficial results likely to follow, when farmers shall be aided in their operations by the teachings of chemistry and geology—sciences which lie at the foundation of all enlightened and successful agriculture. The essay on the superphosphate of lime has already, in our opinion, saved thousands of dollars to the agricultural class of Virginia; and the Committee earnestly hope that these voluntary contributions from Prof. Gilham, made during seasons of release from his duties at the Institute, and without charge, though involving much labor, are but the first instalment of that great fund of information which we shall receive from the same and other similar sources, when once science is devoted to such investigations, and men can have light where all before was the darkness of ignorance. The report on the soils of Powhatan county, though locally and specially applicable to that county, is also equally applicable and valuable to that large district of Virginia having the same geological features. The rocks in our fields are mute but instructive teachers to all who understand their language; and now that they have an interpreter in this report, it is to be expected that they and the people where they exist, will no longer remain in a state of reciprocal ignorance of each other.

The Committee would make honorable and favorable mention of the "Farmers' Manual," prepared by E. T. Tayloe, of King George, and they recommend to the Executive Committee, to insert the same in the publications of the Society, as containing much valuable and useful information to the agricultural community,

but which is not of such a character as to entitle it to a premium.

J. RAVENSCROFT JONES,  
RICHARD IRBY,  
R. H. DEJARNETTE.

41. For Written Description of a new plan of ploughing flat land, to Edmund Ruffin, \$20 00

51. For an Essay on the Peg Roller and its operation, to Edmund Ruffin, 10 00

## BRANCH III.

*Best Crops of Different Farms, &c.—Class 1st.*

74. For best crop of Indian Corn, (highland,) the product averaged per acre, on 10 acres of land, J. Marshall McCue, 50 00

78. For best crop of Oats, product of 10 acres, Dr. J. G. Lumpkin, 30 00

82. For best crop Clover and Timothy Hay, product of 10 acres, average 2½ tons per acre, J. Marshall McCue, 30 00

83. For best specimen of Clover Seed, product of 5 acres of land, weighing 67 lbs. to bushel, J. Marshall McCue, 20 00

86. For best average product of Sweet Potatoes, on 5 acres of land, Dr. J. G. Lumpkin, 30 00

88. For best average product of Irish Potatoes, on 2 acres of land, Leonard Chamberlain, 20 00

89. For best average product of Turnips, on 2 acres of land, Wm. D. Mansfield, 20 00

*Best Samples of Tobacco.—Class 2nd.*

92. For the best sample English Shipping Leaf Tobacco, to Dr. Jas. E. Williams, Henrico, 20 00

93. For the second best sample English Shipping Leaf Tobacco, to Bolling Haxall, Henrico, 10 00

96. For the best sample of fine bright Manufacturing Wrapper, to Jos. S. Brown, of Caswell, N. C., 20 00

Fine samples of English Stemming Tobacco were exhibited by Messrs. Charles J. Paleske and T. C. Leake, both of Henrico; and the Committee awarded a premium to the former as the best, and to the latter as the second best; but there were no premiums offered in the Schedule for that description of tobacco.

## BRANCH IV.

*Thorough-bred Horses.—Class 1st.*

98. For the best Thorough-bred Stallion, R. V. Gaines, of Charlotte, for "Trojan," \$50 00

99. For the second best, John Belcher, for "Red Eye," 30 00

100. For the third best, Richard D. Carter, "Otelius," Certificate of Merit.

101. For the best Thorough-bred Mare, to Thos. W. Doswell, for "Nina," 20 00

102. For the second best, to William Allen, of Surry, for "Florence," 10 00  
 103. For the third best, to Wm. C. Scott, of Powhatan, for "Pauline,"

## Certificate of Merit.

104. For the best Entire Colt foaled since 1st January, '54, to C. R. Allen, for colt, by "Revenue." 10 00

105. For the best Entire Colt foaled since 1st January, '55, to John Belcher, for colt by "Revenue," 10 00

106. For the best Entire Colt foaled since 1st January, '56, to Thomas W. Doswell, for colt by "Revenue." 7 50

109. For the best Filly foaled since 1st January, '56, to John Belcher, by "Red Eye," 7 50

*Horses of General Utility.—Class 2nd.*

111. For the best Stallion for useful and elegant purposes combined, to Wm. C. Rives, for "Emperor," 40 00

112. For the second best, to R. H. Dulany, for "Schrijvington," 20 00

114. For the best Brood Mare for useful and elegant purposes combined, to S. W. Ficklin, for his "Dun mare," 20 00

115. For the second best, to Jas. H. Cox, for "Jenny Lind," 10 00

117. For the best Entire Colt foaled since 1st January, '54, to Wm. A. Perkins, for "gray colt," 10 00

118. For the best Entire Colt foaled since 1st January, '53, to Wm. C. Rives, bay colt by "Emperor," 10 00

119. For the best Entire Colt foaled since 1st January, '56, to Richard Sampson, by "Emperor," 7 50

121. For the best Filly foaled since 1st January, '55, to Robert Edmond, by "Kossuth," 10 00

122. For the best Filly foaled since 1st January, '56, to G. W. Trice, by "Emperor," 7 50

123. For the best Foal dropped since 1st January, '57, to R. H. Dulany, by "Emperor," 5 00

124. For the best pair Matched Horses, to Davis and Hutcheson, for bays, 25 00

125. For the second best, Washington & Cullen, (brown,) 10 00

126. For the best Single Harness Horse, M. P. Bell, "black horse," 15 00

127. For the second best, E. J. Burnett, for bob-tail horse, 10 00

The Committee further report, "that they have made the following awards at the request of the Hon. Wm. C. Rives, viz.

1st. A premium for a year old Colt, to Mr. Richard Sampson, by "Emperor," 20 00

2nd. A premium for Colt foaled since 1st January, '57, to R. H. Dulany, by "Emperor," 15 00

They beg leave to say that Mr. Wm. P. Strother, of Richmond, failed to bring his

mare "Medora" before the Committee in due time for a premium. The Committee take pleasure in saying that they regard her as an extraordinarily fine animal and deserving of especial notice. The Committee cannot forbear to call attention to Mr. John P. Ballard's extraordinary display of horses and omnibuses, and wish it were in their power to reward him for his enterprise.

JOHN A. SELDEN, *Chairman.*

*Quick Draught Horses.—Class 3rd.*

128. For the best Stallion, to H. J. Smith, for "John Henry," \$40 00

129. For the second best, to H. W. Blunt, Georgetown, "Morse Grey," 20 00

131. For the best Brood Mare, to R. B. Haxall, for "Sontag," 20 00

132. For the second best, to Jno. T. Barksdale, for bay mare "Morgan" 10 00

134. For the best Entire Colt foaled since 1st January, '54, to Julian Harrison, Goochland, brown colt by "Kossuth," 10 00

135. For the best Entire Colt foaled since 1st January, '55, to Dr. Wm. P. Braxton, for bay colt by "Kossuth," 10 00

136. For the best Entire Colt foaled since 1st January, '56, to Richard Willis, colt by "Kossuth," 7 50

137. For the best Filly foaled since 1st January, '54, to Alexander Kerr, bay filly by "Kossuth," 10 00

138. For the best Filly foaled since 1st January, '55, to R. B. Haxall, for filly by "Kossuth," 10 00

140. For the best Foal dropped since 1st January, '57, to John T. Barksdale, by "Kossuth," 5 00

141. For the best pair Matched Horses, R. L. Teel, Washington City, 25 00

142. For the second best, to J. H. Norton, Richmond, 10 00

143. For the best Single Harness Horse, G. L. Earnest, Richmond, 15

144. For the second best, to W. R. Turner, Lynchburg, 10 00

H. J. Smith's Stallion, *Kossuth*, was exhibited to the Committee and then withdrawn, for the reason that he did not desire him to compete for a certificate of superiority, (being debarred from taking a premium by the rules of the Society,) over the horse entered by himself.

*Heavy Draught Horses.—Class 4th.*

145. For the best Stallion, to James Turner, Orange, for "Ratler,"

## Certificate of Continued Superiority.

146. For the second best, J. K. Booten, for "Cletius," \$20 00

147. For the third best, to Dr. J. R. Woods, Albemarle, for black stallion,

## Certificate of Merit.

148. For the best Brood Mare, to B. Wood, Albemarle, dark chesnut, 20 00

- 149. For the second best, to Wm. F. Hord, Henrico, for Sorrel Timber, 10 00
- 151. For the best Entire Colt foaled since January, '54, to R. H. Dulany for black colt Cobham, 10 00
- 157. For the best Foal dropped since 1st January, 1857, to Wm. F. Hord, Henrico, for bay colt, 5 00
- 158. For best pair Heavy Dfaught Horses, Jno. P. Ballard, 20 00
- 159. For best Team of four horses, Jno. P. Ballard, 30 00

*Saddle Horses.—Class 5th.*

- 160. For the best Stallion, to B. T. Saffer, Loudoun, "Telegraph," 40 00
- 170. For the best Filly foaled since 1st January, '55, to Mrs. Alexander Kerr, by "Kossuth," 10 00
- 172. For the best Foal dropped since 1st January, '57, to Wm. Smith, of Henrico, by Kossuth, 5 00
- 173. For the best Saddle Horse, J. B. Oden, Loudoun, 20 00
- 174. For the second best, to B. W. L. Blanton, Cumberland, 10 00

*Mules and Jacks.—Class 6th.*

- 175. For the best Jack, B. W. Green, for "Dick Sampson," 40 00
- 176. For the second best, Thos. H. Perkins, for "Cortes," 20 00
- 177. For the best Jennet, to E. R. Fox, for "Black Jennet," 20 00
- 178. For the second best, B. W. Green, for "Lady of the Lake," 10 00

A pair of mules deemed worthy of a premium was offered by A. Bodeker, but not having owned them twelve months, they were debarred from taking the offered premium.

CATTLE.

*Short Horns or Durhams.—Class 1st.*

- 185. For the best Bull, 3 years old and upwards, S. C. Ludington, Greenbrier, for "Scipio," 30 00
- 186. For the second best, Dr. D. B. Sanders, Wythe, "Highlander," 15 00
- 188. For the best Cow, Dr. D. B. Sanders, for "Clarissa Parvin," 30 00
- 189. For the second best, R. H. Dulany, for "Dairy Maid," 15 00
- 194. For the best Bull, between 1 and 2 years old, Dr. R. B. Sanders, "Rover," 15 00
- 195. For the second best, Dr. R. B. Sanders, for "Napoleon," 8 00
- 198. For the best Heifer, Dr. R. B. Sanders, for "Eugine," 15 00
- 199. For the second best, Dr. R. B. Sanders, for "Lilly White," 8 00

*Imported Short Horns.*

- 194½. For the best imported Bull between 1 and 2 years old, R. H. Dulany, for "Sir Edmund Lyons," 15 00
- 196½. For the best imported Heifer,

- between 2 and 3 years old, R. H. Dulany, for "Roeina," 15 00
- 197½. For the second best, R. H. Dulany, for "Miss Emma," 8 00
- 198½. For the best imported Heifer, between 1 and 2 years old, R. H. Dulany, "Isabella," 15 00

A lot of fine Calves were exhibited by Dr. D. B. Sanders for which no premium was offered, and the Committee considering them worthy of a premium, recommended them to the consideration of the Committee on Discretionary Premiums.

*Devons.—Class 2nd.*

- 200. For the best Bull, 3 years old and upwards, H. J. Strandburg, "Percy," \$30 00
- 201. For the second best, A. G. Davis, "Wm. Wallace," 15 00
- 203. For the best Cow, H. J. Strandburg, "Dairy-Maid," 30 00
- 204. For the second best, T. Jefferson Peyton, "Belle," 15 00
- 206. For the best Bull, between 2 and 3 years old, Dr. P. B. Pendleton, "Baltimore," 15 00
- 209. For the best Bull, between 1 and 2 years old, T. Jefferson Peyton, "Herdon," 15 00
- 210. For the second best, B. J. Barbour, "Young America," 8 00
- 213. For the best Heifer, Lewis Bailey, "Beauty," 15 00
- 214. For the second best, Dr. P. B. Pendleton, "Dew Drop," \$8 00

*Alderney—Same Class.*

- 200½. For the best Bull, 3 years old and upwards, John G. Turpin, "Balco," 30 00

*Ayrshires.—Class 3rd.*

- 218. For the best Cow, three years old and upwards, Peter D. Glinn, for "Christmas." Certificate of continued superiority, having taken two premiums before.
- 219. For the second best, J. O. Pendleton, Albemarle, \$10 00
- 228. For the best Heifer, between 1 and 2 years old, Peter D. Glenn, } Twins of Christmas. 10 00
- 229. For the second best, between 1 and 2 years old, Peter D. Glenn, } 8 00

*Imported Ayrshire.*

- 215½. For the best Bull, 3 years old and upwards, John B. Crenshaw, for "Mars," 20 00

*Grades.—Class 4th.*

- 231. For the second best Cow, 3 years old and upwards, S. C. Ludington, for "Roan," 15 00
- 232. For the third best, R. H. Dulany, Certificate of Merit.
- 233. For the best Heifer, between 2 and 3 years old, S. W. Ficklin, Albemarle, 10 00

234. For the second best, S. W. Ficklin, for "Eliza," 5 00  
 235. For the third best, S. W. Ficklin, Certificate of Merit.  
 236. For the best Heifer, between 1 and 2 years, S. C. Ludington, "White Heifer," 10 00  
 237. For the second best, S. W. Ficklin, 5 00  
 237½. For the third best, C. G. Coleman, Certificate of Merit.  
 S. W. Ficklin exhibited a very fine Bull Calf, which was very much admired.

*Dairy Cows.—Class 5th.*

238. For the best Cow for the dairy, S. C. Ludington, (grade Durham,) for "Lady Roan," 30 00  
 239. For the second best, divided between R. H. Dulany, for "Beauty," and Mr. Garnett of Essex, for "Jane," 15 00

The Stock exhibited to the Committee in this Class was highly respectable in number and quality. Other animals than those to which premiums were awarded, we regarded as highly deserving, but as there were but two premiums offered, the Committee were necessarily restricted in the number of their awards.

*Working Oxen.—Class 6th.*

241. For the second best yoke, over 4 years old, Lewis Bailey, 15 00  
 243. For the second best yoke, under 4 years old, Lewis Bailey, 15 00

*Fat Stock.—Class 7th.*

244. For the best pair Aged Fat Steers, H. Wyser, Pulaski, 40 00  
 245. For the second best, James R. Kent, Montgomery, 25 00  
 246. For the best under 4 years old, Jas. R. Kent, Montgomery, 40 00  
 248. For the best Fat Cow, 4 years old, S. C. Ludington, Greenbrier, 20 00  
 250. For the best Fat Heifer, under 4 years old, R. W. Sanders, Wythe, 20 00  
 251. For the second best, S. C. Ludington, Greenbrier, 10 00  
 252. For the best single Fat Steer, F. Grayson, 15 00

*Fat Sheep.—Class 8th.*

254. For the best pen, 4 or more, R. H. Dulany, 15 00  
 257. For the best Slaughtered Mutton, middle wool, Wm. C. Rives, 5 00  
 258. For the best Slaughtered Mutton, long wool, James Newman, Orange, 5 00

## SHEEP—FINE WOOLS.

*Saxon.—Class 1st.*

262. For the best Saxon Ewes, 4 in number, John G. Turpin, 20 00

*Merinos.—Class 3rd.*

271. For the best Ram, S. S. Bradford, Culpeper, 20 00

272. For the second best, S. S. Bradford, 10 00  
 274. For the best pen of Ewes, 4 in number, S. S. Bradford, 20 00  
 275. For the second best, S. S. Bradford, 10 00  
 277. For the best pen Ewe Lambs, 4 in number, S. S. Bradford, 10 00  
 278. For the best pen Ram Lambs, 4 in number, S. S. Bradford, 10 00

*Merino Grades.—Class 4th.*

279. For the best pen of Ewes, 3 in number, S. S. Bradford, 20 00  
 282. For the best pen of Ewe Lambs, 4 in number, S. S. Bradford, 10 00

*Silesian Merinos.—Same Class.*

- 271½. For the best imported Ram, S. S. Bradford, 20 00  
 272½. For the best native Ram, S. S. Bradford, 20 00  
 274½. For the best imported Silesian Ewe, S. S. Bradford, 20 00  
 275½. For the best pen of Ewes, 3 in number, S. S. Bradford, 20 00  
 282½. For the best pen of Ewe Lambs, S. S. Bradford, 10 00

## MIDDLE WOOLS.

*South Downs.—Class 5th.*

283. For the best Ram, R. H. Dulany, 20 00  
 284. For the second best, R. H. Dulany, 10 00  
 285. For the third best, R. H. Dulany, Certificate of Merit.  
 286. For the best pen of Ewes, 3 in number, R. H. Dulany, 20 00  
 287. For the second best, R. H. Dulany, 10 00

*South Down Grades.—Class 6th.*

291. For the best pen of Ewes, 3 in number, John R. Woods, 20 00  
 292. For the second best, R. H. Dulany, 10 00

*Oxford Downs.—Class 7th.*

295. For the best Ram, Wm. C. Rives, for "Earl of Oxford," 20 00  
 296. For the second best, William C. Rives, for "Marquis," 10 00

*Oxford Down Grades.—Class 8th.*

303. For the best pen of Ewes, 3 in number, W. C. Rives, 20 00  
 304. For the second best, W. C. Rives, 10 00  
 305. For the third best, W. C. Rives, Certificate of Merit.

*Long Wools.—Class 9th.*

307. For the best Ram, J. R. Woods, 20 00  
 308. For the second best, T. Jefferson Peyton, 10 00  
 309. For the third best, J. W. Ware, Certificate of Merit.  
 310. For the best pen of Ewes, 3 in number, J. W. Ware, 20 00

311. For the second best, J. W. Ware,	10 00	358. For the second best, Wm. B. Sydnor, Sussex, and Native,	8 00
313. For the best pen of Ram Lambs, 4 in number, J. W. Ware,	10 00	359. For the best Breeding Sow, 2 years old, John G. Turpin,	20 00
314. For the best pen of Ewe Lambs, 4 in number, J. W. Ware,	10 00	360. For the best Sow, not less than 6 months old, &c., John G. Turpin,	15 00
<i>Long Wool Grades.—Class 10th.</i>			
315. For the best pen of Ewes, 3 in number, J. R. Woods,	20 00	362. For the second best, Peyton Johnston, black Hampshire,	8 00
316. For the second best, J. W. Ware,	10 00	363. For the best Lot of Pigs, under 5 months, R. H. Dulany,	10 00
317. For the third best, J. W. Ware,		364. For the second best, Wm. B. Sydnor, Sussex and Native,	5 00
Certificate of Merit.			
318. For the best pen of Ewe Lambs, 4 in number, J. R. Woods,	10 00	<i>Additional Awards to Premium Animals, Certificates of Merit.</i>	
<i>Foreign Sheep.—Class 11th.</i>			
323. For the best imported Merino Ram, S. S. Bradford,	20 00	365. For the best Bull, of any breed on exhibition, Samuel C. Ludington, "Scipio."	
327. For the best imported South Down Ram, R. H. Dulany,	20 00	366. For the best Cow, R. H. Dulany, "Dairy-maid."	
328. For the best imported South Down Ewe, R. H. Dulany,	20 00	367. For the best Stallion, John Belcher, "Red-eye."	
330. For the second best, R. H. Dulany,	10 00	368. For the best Brood Mare, Thos. W. Doswell, "Nina."	
333. For the best imported Oxford Down Ewe, Wm. C. Rives,	20 00	369. For the best Ram, R. H. Dulany, "South-Down."	
334. For the second best, W. C. Rives,	10 00	370. For the best Ewe, R. H. Dulany, "South-Down."	
335. For the best imported Bakewell or New Leicester Ram, John G. Turpin,	20 00	271. For the best Boar, Peyton Johnston.	
337. For the best imported Bakewell or New Leicester Ewe, John G. Turpin,	20 00	372. For the best Sow, S. W. Ficklin.	
339. For the best imported Cotswold or New Oxfordshire Ram, J. W. Ware,	20 00	POULTRY.	
340. For the second best, J. W. Ware,	10 00	<i>Chickens—Class 1st.</i>	
341. For the best imported Ewe, J. W. Ware,	20 00	373. For the best pair Cochín China, Rev. J. Porter,	\$2 00
342. For the second best, J. W. Ware,	10 00	375. For the best pair white Dorkings, Bossieu & Burgess,	2 00
<i>Swine, Large Size.</i>			
345. For the best Boar, 2 years old and upwards, Peyton Johnston,	20 00	376. For the best pair Red Chittagong, Bossieu & Burgess,	2 00
346. For the second best, S. W. Ficklin,	10 00	380. For the best pair Silver Pheasants, James Duke,	2 00
347. For the best Boar, 1 year, John R. Woods, Chester,	15 00	383. For the best pair white Game, Rev. S. Vaden,	2 00
349. For the best Breeding Sow, 2 years old and upwards, John R. Woods, Chester,	20 00	383½. For the best pair of red Game, J. McL. Anderson,	2 00
350. For the second best, S. W. Ficklin,	10 00	384. For the best pair Bramah Pootra, Rev. J. Porter,	2 00
351. For the best Sow, not less than 6 months, &c., John R. Woods,	15 00	385. For the best pair Virginia Game, Wm. Britton,	2 00
352. For the second best, S. W. Ficklin,	8 00	386. For the best pair black Spanish, John G. Turpin,	2 00
353. For the best Lot of Pigs, under 5 months old, S. W. Ficklin,	10 00	387. For the best pair Indian Mountain, Bossieu & Burgess,	2 00
354. For the second best, Peyton Johnston,	5 00	388. For the best pair Wild Indian Game, Bossieu & Burgess,	2 00
<i>Small Breed.</i>			
355. For the best Boar, over 2 years old, Daniel E. Gardner, Suffolk,	20 00	389. For the best pair Sumatra Game, Bossieu & Burgess,	2 00
356. For the second best, John G. Turpin, Essex,	10 00	391. For the best pair Bolton Greys, Richard Forrester,	2 00
357. For the best Boar, 1 year old Peyton Johnston, Hampshire,	15 00	392. For the best pair Seabright Bantams, Richard Forrester,	2 00
		393. For the best pair Java Bantams, Sneed & Saunders,	2 00
		394. For the best pair Great Malay, Bossieu & Burgess,	2 00

395. For the best pair Jersey Blues, Bossieu & Burgess,	2 00	436. For the best Wagon-body, or Ladder for hauling wheat in the sheaf, or hay, or straw, Daniel B. Corrie,	5 00
<i>Turkeys—Class 2d.</i>		<i>Rollers, Clod-crushers, &amp;c.—Class 4th.</i>	
396. For the best pair of common Turkeys, John G. Turpin,	2 00	440. For the best Smooth Roller, H. M. Smith,	10 00
<i>Geese—Class 3d.</i>		441. For the best Pegged Roller, Edmund Ruffin,	20 00
399. For the best pair of common Geese, Mrs. J. G. Lumpkin,	2 00	442. For the best Clod-crusher, H. M. Smith,	20 00
402. For the best pair of Bremen Geese, John G. Turpin,	2 00	<i>Horse-power Threshers, Separators, &amp;c.—Class 5th.</i>	
403. For the best pair of Poland Geese, Wm. B. Palmer,	2 00	444. For the best Horse-power, H. M. Smith,	\$25 00
<i>Ducks—Class 4th.</i>		445. For the second best, W. Fishback, Stanardsville,	10 00
405. For the best pair of white Poland Ducks, R. Forrester,	2 00	446. For the best Threshing Machine, H. M. Smith,	20 00
406. For the best pair of Muscovy Ducks, Mrs. J. G. Lumpkin,	2 00	447. For the best Machine for threshing, cleaning, and separating wheat at one operation, H. M. Smith, for "Pitt's Machine," CERTIFICATE OF CONTINUED SUPERIORITY, having before taken two premiums.	
408. For the best pair of common Ducks, Bossieu & Burgess,	2 00	448. For the best machine for gathering clover seed, M. S. Kahle,	\$20 00
<i>Class 5th.</i>		449. For the best Machine for hulling and cleaning clover seed, M. S. Kahle,	20 00
410. For the greatest variety of Poultry by one exhibitor, John G. Turpin,	10 00	<i>Straw and Root-cutters, Corn-sheller, &amp;c.—Class 6th.</i>	
<b>AGRICULTURAL IMPLEMENTS.</b>		450. For the best Hay or Straw-cutter, (horse-power,) G. B. Griffin,	\$10 00
<i>Ploughs, Cultivators, &amp;c.—Class 1st.</i>		451. For the best Hay or Straw-cutter, (hand-power,) G. B. Griffin,	5 00
411. For the best Three-horse Plough, Baldwin, Cardwell & Co.,	\$10 00	452. For the best Horse-power Cutter for corn-stalks, G. B. Griffin,	15 00
412. For the best Two-horse Plough, George Watt & Co., wrought point,	10 00	453. For the best Corn-sheller for horse-power, Virginia Corn-sheller, H. M. Smith,	10 00
413. For the best Single-horse Plough, Geo. Watt & Co., wrought point,	10 00	454. For the best Corn-sheller for hand-power, H. M. Smith,	5 00
415. For the best Sub-soil Plough, Geo. Watt & Co.,	5 00	458. For the best Corn and Cob-crusher, for Granger's Magic Mills, Geo. C. Hopkins,	10 00
416. For the best New-ground or Coalter Plough, Geo. Watt & Co.,	5 00	<i>Fan Mills, Hay Press, &amp;c.—Class 7th.</i>	
417. For the best Hill-side Plough, Geo. Watt & Co.,	5 00	462. For the best Fanning Mill, J. Montgomery & Bro.,	\$10 00
418. For the best Cultivator for corn, A. P. Routt,	2 00	463. For the best Hay Press, H. M. Smith,	15 00
419. For the best Cultivator for tobacco, (expanding with wrought teeth,) Baldwin, Cardwell & Co.,	5 00	<i>Most Extensive Variety of Implements, &amp;c.—Class 8th.</i>	
420. For the best Cultivator for 2 horses, Geo. Watt & Co.,	5 00	470. For the most extensive and valuable collection of useful Machines and Implements, made at one factory, on exhibition, H. M. Smith,	\$25 00
421. For the best wooden-frame Harrow, Baldwin, Cardwell & Co.,	6 00	<i>Miscellaneous Articles.—Class 9th.</i>	
422. For the best iron-frame Harrow, H. M. Smith,	6 00	471. For the best Pump, adapted to deep wells, Paul Bargamin,	10 00
423. For the best Drain and Furrow Plough for opening water furrows, A. P. Routt,	20 00	472. For the best Water-ram in operation, Paul Bargamin,	10 00
<i>Drills, Broad-casters &amp;c.—Class 2d.</i>		473. For the best Scoop or Scraper, M. S. Kahle,	10 00
424. For the best Drilling Machine for sowing grain or grass seed, Bickford & Hoffman,	20 00		
427. For the best Lime-spreader, H. M. Smith,	20 00		
428. For the best Corn-planter, A. P. Routt,	10 00		
<i>Wagons, Carts, Harness, &amp;c.—Class 3d.</i>			
434. For the best Horse-cart, E. P. O'Dell,	8 00		



474. For the best Leveling Instrument, for draining, James T. Redd, 10 00  
 476. For the best Sausage-cutter, H. M. Smith, 2 00  
 477. For the best Washing Machine, W. H. & R. B. Woodward, 2 00  
*Agricultural Steam Engines.—Class 10th.*  
 480. For the best Steam Engine, applicable to agricultural purposes, &c., P. Råhm, \$50 00

*Ploughing Match.—Class 11th.*

481. For the best Ploughman, with horses, Wm. Shepperson, 10 00  
 482. For the second best, with horses, Wm. Eubank, 5 00  
 483. For the best Ploughman, with oxen, James Bailey, 10 00

BRANCH VI.

*Fruits and Fruit Trees.—Class 1st.*

490. For the best and largest variety of Apples, labeled and suitable for Southern raising, Franklin Davis, Staunton, 10 00  
 493. For the best and largest collection of Apple Trees, suitable for Southern raising, H. B. Jones, Rockbridge, 10 00  
 494. For the best Pear Trees, Jos. Sinton & Sons, 10 00  
 495. For the best Peach Tree, Franklin Davis, 10 00  
 496. For the best Fig Tree, James Guest, 5 00  
 497. For the best Grape Vines, James Guest, 5 00  
 498. For the best Strawberry Plants, John Stansbury, 3 00  
 499. For the best Raspberry Plants, James Guest, 3 00

*Flowers.—Class 2d.*

503. For the largest and choicest collection of Flowers, James Guest, 10 00  
 505. For the best and greatest variety of Dahlias, John Morton, 3 00  
 506. For the best twelve Dahlias, Jno. Morton, 2 00  
 507. For the greatest variety of Roses, John Morton, 5 00  
 508. For the best twenty-five Roses, James Guest, 2 00  
 509. For the largest collection of Chrysanthemums, James Guest, 3 00  
 510. For the best Floral Ornament, John Morton, 5 00  
 511. For the best hand Bouquet, John Morton, 2 00  
 512. For the best and largest collection of Verbinas in bloom, John Morton, 3 00  
 513. For the best and largest collection of Evergreens, John Morton, 5 00  
 514. For the best and largest variety of hardy Flowering Shrubs, John Morton, 5 00

*Vegetables.—Class 3d.*

515. For the largest and best assortment of Table Vegetables, A. S. Storrs, 10 00  
 516. For the best dozen Long Blood Beets, Wm. Smith, 2 00  
 517. For the best dozen head of Cabbages, A. S. Storrs, 2 00  
 518. For the best dozen Cauliflowers, A. S. Storrs, 2 00  
 520. For the best dozen Carrots, L Chamberlain, 2 00  
 521. For the best dozen Egg Plants, L. Chamberlain, 2 00  
 522. For the best peck of Onions, Mrs. L. C. Binford, 2 00  
 523. For the best dozen Parsnips, L. Chamberlain, 2 00  
 524. For the best bushel of Irish Potatoes, J. Stansbury, 2 00  
 525. For the best bushel of Sweet Potatoes, B. W. Talley, 2 00

BRANCH VII.

*Butter.—Class 1st.*

526. For the best specimen of fresh Butter, not less than 10 lbs., Mrs. Mary Newman, Orange, 10 00  
 527. For the second best, not less than 5 lbs., Mrs. C. Stringfellow, Hanover, 5 00  
 528. For the best firkin or tub of salted Butter, not less than 6 months old, Mrs. Lucy Rowe, Spottsylvania, 10 00  
 529. For the second best, Mrs. E. A. L. Tiller, Hanover, 5 00

*Honey—Bee-Hives, and Bacon Hams.*

*Class 2d.*

531. For the best specimen of Honey, 10 lbs. or more, N. S. Paleske, \$5 00  
 532. For the best Bee-hive, J. W. Johnson, 10 00  
 533. For the best Ham, cured by exhibitor, Mrs. L. C. Binford, 8 00  
 534. For the second best, divided between Mrs. J. C. Burton and Mrs. P. Woolfolk, 4 00

*Household Manufactures.—Class 1st.*

535. For the best Quilt, Miss Mary J. Hammersley, 5 00  
 536. For the second best, Miss Nan- nie Eubank, 4 00  
 537. For the best Counterpane, Mrs. Lewis Tudor, 10 00  
 538. For the second best, Mrs. Jones, Westmoreland, 4 00  
 539. For the best home-made Blankets, Mrs. John Sanders, Wythe, 5 00  
 540. For the best home-made Carpet, Gilson Via, 5 00  
 541. For the best home-made Hearth- rug, Miss Virginia Bradley, 3 00  
 542. For the best home-made Cur- tains, Mrs. L. M. Harrold, 5 00  
 545. For the best piece negro Cloth- ing, for negroes, woven by hand, Mrs.

J. M. Patterson, Buckingham,	5 00	578. For the second best, Miss I. Gray, Caroline,	6 00
546. For the best piece heavy Woolen Jeans, woven by hand, Mrs. J. M. Patterson,	5 00	579. For the most extensive variety, &c., Mrs. J. D. White, Pittsylvania,	10 00
547. For the second best, Mrs. Isham Seay,	3 00	<i>Domestic Manufactures.—Class 1st.</i>	
548. For the best piece Linsey, woven by hand, Mrs. R. H. Allen,	5 00	CERTIFICATES OF MERIT.	
549. For the second best, Mrs. Isham Seay.	3 00	580. For the best Flour from white wheat, Thos. Patterson, of Bedford.	
<i>Class 2nd.</i>			
550. For the best fine long yarn Hose, Mrs. Nancy Anderson,	3 00	581. For the best Flour from red wheat, Dunlop, Moncure & Co.	
551. For the best fine long cotton Hose, Mrs. Mark Tucker,	3 00	<i>Class 3rd.</i>	
552. For the best knit Hose of home made Silk, Mrs. Jos. C. Burton,	5 00	583. For the best Shod Horse, McKinly & Smith,	5 00
553. For the best specimen of home made Wine, Mrs. R. F. Stubbs,	5 00	584. For the best Horse Shoe, E. P. O'Dell.	5 00
554. For the best specimen of home made Bread, divided between Mrs. Wm. Robinson and Mrs. J. Q. Winn,	5 00	<i>Class 4th.</i>	
555. For the best home made Pound Cake, Mrs. Wm. Breeden,	3 00	CERTIFICATES OF MERIT.	
556. For the best home made Sponge Cake, Mrs. Dr. Lyne,	3 00	590. For the best and greatest variety of coarse, strong, cheap Shoes, C. S. Maurice, Richmond.	
557. For the best variety home made Pickles, Mrs. R. F. Stubbs,	3 00	591. For the best and cheapest Wool Hats, Richard Moore, Richmond.	
558. For the best variety of home made Preserves, Mrs. R. H. Duke,	3 00	<i>Class 5th.</i>	
559. For the best variety of home made fruit Jelly, Mrs. Willis,	3 00	594. For the best set Plantation Baskets, Dr. J. G. Lumpkin,	5 00
560. For the best sample home made Soap, Mrs. E. B. Stovin,	5 00	<i>Special Premiums.—Class 2nd.</i>	
<i>Ladies' Ornamental and Fancy Work.</i>			
<i>Class 3rd.</i>			
561. For the best specimen of Embroidery, Mrs. M. Gilliam, Prince George,	8 00	598. For the best Drained Farm, or part thereof, the formerly wet and then well drained portion of land, not less than 100 acres &c., Edmund Ruffin,	50 00
562. For the second best, Mrs. Sarah B. Scott, Dinwiddie,	6 00	599. For the best Drained 20 acres, Samuel S. Bradford,	20 00
563. For the best specimen of Worsted work, Miss R. T. Thom, Fredericksburg,	8 00	<i>Discretionary Premiums.</i>	
564. For the second best, Miss Whittemore, Fredericksburg,	6 00	603. For Morrison's Reaper, R. J. Morrison,	10 00
565. For the best specimen of Crotchet work, Mrs. Semmes, Richmond,	8 00	604. Plough for opening Corn Rows, A. P. Routt,	5 00
566. For the second best, Miss Maria Cooke, Richmond,	6 00	605. Embroidered Dress, Miss Sally Lambert,	5 00
567. For the best specimen of Wax work, Miss J. E. Turpin, Richmond,	8 00	606. Knit Vest, Miss L. H. Sheppard,	5 00
568. For the second best, Miss Lucy Crouch, Richmond,	6 00	* Among a variety of articles recommended to the consideration of the Committee on Discretionary Premiums, besides those on which awards were made, the following are deemed worthy of honorary mention.	
571. For the best specimen of Leather work, Miss Ella Dimmock, Richmond,	8 00	A Case of Edge Tools, by Royal Allen.	
572. For the second best, Mrs. Chs. Paleske, Henrico,	6 00	A Hay or Wheat Ladder, for hauling wheat, hay or straw, exhibited by J. B. Trimble, Esq.	
573. For the best specimen of Block work, Miss Susan B. Stott, Amelia,	8 00	A Shingle-Getting Machine, by Wilson & Bosset.	
575. For the best specimen of Knitting, Mrs. S. Bernard, Richmond,	8 00	A Machine for Turning the Spokes of Wheels.	
576. For the second best, Mrs. Mary Page, Henrico,	6 00	Elegant Specimens of Work in Marble, by Mr. John W. Davies.	
577. For the best specimen of Netting, Mrs. P. Woolfolk, Caroline,	8 00	Elegant Coaches, by Mr. A. King, and Geo. A. Ainslie.	
		Duff's Book-Keeping, and Duncan's Penmanship, in elegantly bound volumes.	

From the Genesee Farmer.

### The Practical Utility of Soil Analyses.

FRIEND HARRIS:—I have just read your leading editorial in the July number of the FARMER on "Agricultural Quackery;" and while agreeing with you in feeling and sentiment on the principal points discussed, it strikes me that you have been less guarded in your remarks in reference to the value of soil analyses than the importance of the subject demanded. Still taking an interest in the reputation of the GENESEE FARMER for the extent and accuracy of its information, as well in the science as in the practice of agriculture, I shall regret to see it undervalue analytical chemistry as applied either to the investigation of manures, or the composition of vegetable and animal products, or of the soils from which these products are necessarily derived. You justly commend the analysis of Gould's Muriate of Lime, made by Prof. Johnson, and confidently appeal to forty-two analyses of barley and wheat by "reliable chemists," to show that the former takes more of phosphates than the latter from the soil; and at the same time you tell your readers, in positive terms, that "no chemist in the world, by the most rigid analysis of the soil, can determine the point whether water ascending into a soil in dry weather, by capillary attraction, brings with it salts of soda, potash, lime, and magnesia, &c., or not," as stated by Mr. Pell.

In many cases, the difference in the amount of soluble salts in the earth, at and near its surface, in dry and wet weather, may be inappreciable; but that such is *always* the case, there is no good reason for saying or believing. On the contrary, the subject deserves a more thorough investigation than it has yet received in any country. If true, the fact would be extraordinary, that a chemist of the experience and attainments of Prof. Johnson should be able to determine the value, as plant-food, of an earthy "stuff inferior to leached ashes," consisting, like soils, of six or seven per cent. of "organic matter," of "sand, soluble silica, alumina, iron, lime, potash, soda, magnesia, chlorine, sulphuric and carbonic acids, and water," and not be able to give any useful information in reference to the presence or absence, scarcity or abun-

dance, of any of these constituents of crops in cultivated land. Destroy the value of chemistry in its application to the organic and inorganic food of agricultural plants in the soil, and you virtually damage it to an equal extent in its application to these substances when organized in the bodies of all living beings, although life may be extinct. Certainly, you did not contemplate any such injury to agricultural chemistry, but only wish to shield it from the abuse of quacks and quackery, and protect unscientific readers from imposition. All upright men will appreciate and applaud this purpose; and at the same time, they would wish you not to intimate that all knowledge derived from the analyses of soils is a humbug, unless you have good proof that such is the fact. Even in that case, the proof should follow closely the mere assertion of what chemistry can or cannot do in all questions of doubt and controversy.

*Athens, Ga.*

D. LEE.

REMARKS.—We thank Prof. Lee for his friendly criticism. His views on this important subject are worthy of respectful consideration, and we cheerfully accord his letter a prominent place in our columns. We do not "undervalue analytical chemistry as applied either to the investigation of manures, or the composition of vegetable and animal products." We believe that correct chemical analyses afford a true criterion of the value of manures, and furnish important and satisfactory information in regard to the amount of plant-food which the various crops remove from the soil. On these points Dr. Lee and ourselves are perfectly agreed. It is only in regard to the practical utility of soil analyses that we differ.

Here is a soil too poor for profitable cultivation. Ten acres of it do not produce grass enough to keep a cow,—and the last time it was sown to wheat, it yielded only four bushels per acre. "Now, Mr. Chemist, I want you to analyze this soil, and tell me what it lacks to make it produce good crops. Can you afford me the desired information?" Such inquiries are frequently addressed to us. We always reply, "We can make an analysis of your soil, but to be candid, we think it will be of no use to you. *It will not show*

*you what your soil needs to make it productive.* The analysis may afford some interesting information—it may point out the presence of some deleterious substance—but it will not furnish you the information you desire.” Our reasons for this advice we will briefly state.

In addition to the four organic elements, oxygen, hydrogen, nitrogen, and carbon—and of which the atmosphere is the original source—all our commonly cultivated plants contain potash, soda, lime, magnesia, phosphoric and sulphuric acids, silica, and chlorine. When a plant is burned in the open air, the four former are dissipated in the form of carbonic acid, ammonia and water; the eight latter substances are found in the ashes. They are usually termed “inorganic elements,” or soil constituents. Plants can obtain them only through their roots, from the soil. If a soil is destitute of even one of these substances, no agricultural plant will grow on it. *All cultivated soils, therefore, contain every one of these inorganic substances.* If they did not, no plant would grow upon them. All naturally fertile soils contain a full supply of these substances in an available condition, or in such a state that they are rendered available by the ordinary processes of tillage. Poor soils may be unproductive, and even incapable of profitable cultivation, from a *deficiency* of some one or more of these substances—but they are not *entirely destitute* of any one of them, if capable of producing a blade of grass or a Canada thistle.

It is unnecessary therefore, to resort to chemical analysis to ascertain the presence or absence of any of the inorganic element of plants. Messrs. Bramble, Thistle & Co. assure us that they are all present in the soil, and their authority on this point cannot be questioned.

If an analysis of a soil, therefore, is of any practical value, it must be in determining not the presence or absence of this or that particular substance, but whether it exists in sufficient quantity for the growth of maximum crops. *We think that the most thorough chemical analysis cannot determine this point.* For instance, we have seen, growing side by side, two crops of turnips. One crop yielded less than *seven hundred pounds* of bulbs per acre, while the other yielded over *ten tons*

of bulbs per acre. One soil was evidently too poor to grow turnips, while the other gave a fair crop. Now, what was the difference between these two soils? Simply this: the one had been manured with superphosphate of lime and the other had not. In all other respects these soils were alike. *One acre contained fifty pounds more of phosphoric acid than the other.* Could any chemist in the world have determined by the most rigid analysis which soil contained the extra fifty pounds of phosphoric acid? Let us see. An acre of soil seven inches deep, weighs at least two million pounds. Fifty pounds of phosphoric acid mixed with it would be one part in forty thousand. Such a minute quantity is far beyond the range of quantitative analysis. The determination of phosphoric acid in a soil is so difficult that a chemist congratulates himself when duplicate analyses of the same soil agree within one part in a thousand. If our friend Dr. Lee should make two analyses of the same soil, and one analysis gave the percentage of phosphoric acid as 0.1 and the other as 0.2, he would consider the analysis a good one, and, taking the mean—say the soil contained 0.15 per cent. of phosphoric acid. This, at least, is the usual way. Now, according to one of these analyses, an acre of the soil, seven inches deep, contains 2 000 pounds of phosphoric acid, and according to the other 4,000 pounds. The actual quantity present in the soil probably lies between these figures, but the exact amount it is impossible to tell, and there is no certainty whether it is nearest to *two thousand or four thousand pounds per acre.* How utterly impossible it is, therefore, to determine the difference between two soils, one of which contains fifty pounds more phosphoric acid than the other, and yet one is poor and the other productive. Admitting that it is sometimes possible to get duplicate analyses to agree within one ten-thousandth, the chemist would be still utterly incapable of telling the difference between these two soils.

These same remarks will apply to ammonia. We have seen, growing side by side, two crops of wheat, one yielding thirty-five bushels per acre, and the other fifteen bushels. The only difference between the two soils being, that one con-

tained one hundred pounds of ammonia per acre more than the other, which had been applied in the form of sulphate and muriate of ammonia. This one hundred pounds of ammonia mixed with an acre of soil seven inches deep, would be one part in twenty thousand. We hazard nothing in saying that no chemist could determine so minute a quantity. It is far less difficult to determine the amount of ammonia in a soil than phosphoric acid, but if duplicate analyses agree within one-tenth of the per cent., (0.1) it is considered good work.\* In other words, if one analysis showed a soil, when calculated to the acre, to contain 2,000 pounds of ammonia, and the other 4,000 pounds, the chemist would think this a very accurate analysis, and, taking the mean, put it down at 3,000 pounds. It is evident, therefore, that the one hundred pounds of ammonia, which changed the comparatively poor soil into an unusually fertile one, could not be detected by the analyst.

Chemists who undertake to prescribe for a sick soil, frequently say: "Your soil, according to analysis, is deficient in potash and soda, and phosphates and ammonia; you should, therefore, apply twenty bushels of unleached wood ashes, a bushel of salt, four hundred pounds of the improved superphosphate of lime, and two hundred pounds of the best Peruvian

guano. These will furnish what your soil lacks," &c. Now, no honest chemist will claim that he could tell, by analysis, which part of the field had been so treated and which had not. The facts which we have mentioned above show that it is *utterly impossible* for the most rigid analysis to determine the least difference.

These considerations lead us to the conclusion not only that five dollar soil analyses are a great humbug, but that the best soil analyses that can be made are, in the language of Boussingault, "more curious than useful."

Dr. Lee thinks it strange that we should admit that a chemist can give us reliable and useful information in regard to the composition and value of manures, and deny his ability to "give useful information in reference to the presence or absence, scarcity or abundance," of the same ingredients "in cultivated land." The cases are very different. The quantity of ammonia, phosphates, potash, &c., in a manure, can be determined with sufficient accuracy for practical purposes, but such is not the case in regard to the soil. For instance: here are two samples of guano. Their value is in proportion to the amount of ammonia and phosphates which they contain. One is found to contain 18 per cent. of ammonia and 20 per cent. of phosphates, while the other contains 9 per cent. of ammonia and 10 per cent. of phosphates. We say one is worth as much again as the other. Now, the fact that a chemist cannot determine the amount of ammonia and phosphates with any degree of certainty nearer than 0.1 per cent., does not affect the value of the analysis at all. If it can be determined within 0.5 per cent., or even within 0.1 per cent., the analysis still indicates the value of the manure with sufficient accuracy for practical purposes. But in soil analyses, if there is the slight variation of 0.1 per cent., the analysis is utterly valueless; for when calculated to the acre, it causes a variation of 2,000 pounds—a quantity of ammonia that it would take six tons of guano, or two hundred tons of barn-yard manure to furnish. The same is true of phosphoric acid, potash and other constituents of manures and soils.

Dr. Lee is surprised that we doubt the ability of a chemist to "determine the

\* Some years ago, an English gentleman employed a London chemist to determine the nitrogen (ammonia) in a number of samples of turnips grown under different manurial conditions. He agreed to pay ten dollars a piece for them, provided duplicate analyses of the same turnip agreed within one-tenth of one per cent. Duplicate samples of the turnips were furnished, marked Nos. 1, 2, 3, 4, &c., the chemist not knowing which were the duplicate samples. In due time the analyses were completed, and the results furnished; but on comparing the analyses of Nos. 1 and 3, which were samples of the same turnip, it was found that they differed considerably more than one-tenth of one per cent., and others differed as much as 0.2 and 0.3 per cent. Such analyses were of no value to the gentleman, and he refused to pay for them. The matter was referred by the consent of both parties, to Professor Graham,—and he decided that the analyses were as accurate as they could be made; that the variation was within the usual range; and that the money ought to be paid. The money was paid, (\$500.) but the analyses were never used.

point whether water ascending into a soil in dry weather, by capillary attraction, brings with it salts of soda, potash, lime, and magnesia," &c. It will not be claimed that the water which ascends during the drouth of a single summer, brings to the surface more plant-food than is required by a large crop. If it did, where would be the necessity of manuring? Supposing, then, the water ascending during the summer from the subsoil, brought to the surface enough potash (leaving out of the question other ingredients) for the growth of a crop of wheat of fifty bushels per acre, say fifty pounds, could any chemist discover that the soil contained more potash in the fall than it did in the spring? This fifty pounds of potash would be mixed with two million pounds (2,000,000) of soil, or one part in forty thousand. Now, when duplicate potash analyses agree within one thousandth part, they are considered very accurate. To determine one part in forty thousand, therefore, is utterly impossible.

Dr. Lee says: "Destroy the value of chemistry in its application to the organic and inorganic food of agricultural plants in the soil, and you virtually damage it to an equal extent in its application to these substances when organized in the bodies of all living beings, although life may be extinct." We cannot see the force of this argument. If it is *true* that soil analyses are of no practical utility, the fact should be known. The cause of agricultural chemistry cannot be promoted by the suppression of truth, or by unfounded pretensions. It is a good cause, and *truth* will not hurt it.

#### Steam Ploughing.

The London *Engineer*, in a recent article on this subject, holds that few appear to comprehend the weight of a traction engine necessary to serve as an anchor, or to counterbalance the resistance of a tilling implement in steam ploughing. The weight of a portable engine of the ordinary size, such as is used for threshing, is about three tons. It is a common conclusion that if such an engine could be got up so as only to weigh two tons the problem of steam culture by direct traction would be solved; and yet at Clemsford, in the heavy land field, Boydell's traction engine, weighing upwards of nine tons, was proved to be

too light for sustaining the resistance of five ploughs, each of four horse draft—total, twenty horses—the endless rail or shoe slipping on several occasions, allowing the wheel to turn round without advancing. Moreover, it will have been seen from Mr. McAdam's report of a trial of a similar engine between Thetford and London, that the construction of such engines must be heavier, and not lighter, in order to avoid vibration and breakage. So far, therefore, as experiment will yet warrant a conclusion, traction engines must be heavier, and not lighter than those now in use.

On the steam culture by rope traction, the English are also divided as to the tear and wear of the rope and implement, and their compressing action upon the soil. The conclusion is general that less harm will be done in this case on level wet clayey land, during winter, than by horses' feet; but great apprehensions are entertained as to the effect in stubborn, stony land, especially in working over a convex surface. And not only will the tear and wear of the rope be greater in working over a convex surface than over a level one, but the compression of the wheels of the implement upon the soil must also be greater. Again, from the experiments of Mr. Hannam, of Burcot Park, in 1849 and 1850, and those made by others during the past and current year, it is the general conclusion that the wire rope will require to be heavier and not lighter than it now is, and that this will throw greater difficulties in the way of cultivating large fields. Mr. Smith, of Woolston, for instance, says that he must divide a forty-acre field into forty divisions of ten acres each, which consequently cuts it up into a greater number of headlands than if the whole field were ploughed from end to end; so that, between turning and anchoring, such headlands are consolidated and deteriorated in value, especially clayey lands, during the wet weather of winter.—*Scientific Am.*

**HIGH AIMS.**—Aim at perfection in everything, though in most things it is unattainable. However, they who aim at it, and persevere, will come much nearer to it than those whose laziness and despondency make them give it up as unattainable.

From "Cozzon's Wine Press," (published in New York.)

### American Wines.

In Georgia, the luscious muscadines, gathered in the wild state, produce a wine of considerable merit; as yet, no attempt has been made to give them a formal training, except here and there, upon a small scale.\* This is also the case in South Carolina. But here we are in a sister State, a land of promise, of vines, and pines, and mines; of tar and turpentine; the natal soil of the Isabella, the Catawba, the Herbeumont, and the sonorous Scuppernong—North Carolina!

We shall have occasion to speak of the Catawba, the Isabella, and the Herbeumont, hereafter; the two first, unquestionably owe their reputation to the skill of the cultivators of Ohio and New York, and have only a limited growth in their native State; but Scuppernong vineyards are found from *Currituck* on the extreme north, to the southern counties on the Cape Fear River, and extend inland, almost to the foot of the Blue Ridge Mountains; while so various are the qualities of wine produced, that some kinds command three or four dollars per gallon, and some kinds can be purchased for five or six dollars per barrel! There are two species of this grape, the best having a white, silvery skin, with a rich, metallic lustre, while the inferior kind bears a small, black berry. Mr. Longworth says, "the black Scuppernong bears from one to four berries on a bunch, and would, in times of war, if lead be scarce, be as valuable, even when fully ripe, as the Fox grape, for bullets." The white Scuppernong, also, has a very small bunch, and is a bet'er grape than the black. But the skin is thick, and the pulp hard; it will never be valuable as a wine grape, unless to give to other must aroma and flavor.

If for no other purpose than this, namely, to mix with the must of less flavorful grapes, to give character to the wine when made, this Scuppernong will prove to be most valuable to this country. The "Tra-

miner" of the Rheingua, a small berried grape, abounding in saccharum, and full of aroma and strength, is so used to mix with the "Riesling," the favorite grape of the Rhine, in the production of the first class German wines. And that the generality of European wines owe their excellence to the judicious mixture of various growths and vintages, is so well known as scarcely to need repeating here. In particular, Madeiras, Sherries, and Champagne wines are so composed; the *capitaz*, or head butler of the Spanish *bodega*, or wine-cellar, being a most important personage, to whom is confided the exquisite task of balancing flavor against body, and lusciousness, which might cloy, against acerbity, which might repel until the whole perfected vinous mass becomes the golden potable which even the gods might envy. So highly are the services of this great functionary prized, that the *capitaz* of a large proprietor seldom fails to amass considerable wealth, as an instance of which, Juan Sanchez, the *capitaz* of the late Pedro Domez, died recently, worth £300-000.

But the value of the Scuppernong as a wine-grape, has not yet become fairly tried; at least, not in North Carolina. Of all the samples we have tasted, not one was the pure and original fermented juice of the grape, but, in every case, more or less sophisticated with sugar or honey, and not unfrequently with whiskey or brandy. It is usual to add three pounds of sugar to one gallon of the must, and then a little distilled spirits of some kind is poured into every barrel of wine, "to make it keep." Subjected to this treatment, the fluid degenerates into a sort of vinous grog, and its peculiar character as a wine is almost entirely lost. Still, in spite of this, it has an aroma which is somewhat grateful. This mistake must be rectified, as a larger experience obtains among our vine dressers of the South; let us look into the matter a little closer.

That species of the muscadine, called the Scuppernong, is a very sweet grape, but sweet grapes are often wanting in saccharine matter. For a familiar instance, take the Catawba and Isabella grapes. To the taste the latter is by far the sweetest fruit; nevertheless, in making a sparkling wine, the Isabella needs a liberal allowance of sugar, while the Catawba wine re-

\* Dr. Cammack, of Athens, Georgia, has quite a large vineyard, and raises quantities of grapes annually. Whether he makes wines, we do not know. There is much wine made for family use in various parts of G., from the wild grapes.

quires but little. McCulloch, in his treatise on wine-making, makes a very accurate distinction between this "sweet principle," and that which constitutes the "sugar," in fruit. The latter, the saccharine principle, is the element which, by the process of fermentation, is transmitted into alcohol, or *spirit* of wine, a certain percentage of which is necessary in all vinous fluids. This spirit of the wine is derived directly from the sugar of the grape. Now, the difference between the sweet element and the saccharine element, is very clearly shown by Mr. McCulloch, who illustrates the subject by comparing molasses with refined sugar—the first being much the sweetest of the two to the taste, and yet not comparable to the latter in its proportion of pure saccharum. And, if we may venture upon a theory, we should say "that the reason why sweet grapes make a wine less sweet than those not so dulcet to the taste, lies in this:—that in the sweet grape the *whole* quantity of saccharum is absorbed in the production of alcohol, while in those more abounding in sugar, a *portion* only is transmuted into alcohol; the superflux of sugar remaining in undisturbed solution, and sweetening the wine, less or more, as may be."

Now, the Scuppernong grape produces a wine naturally hard and dry, with little to recommend it but its peculiar aroma and flavor; and, in consequence, the must is artificially sweetened to make it a marketable or a saleable commodity. So long as this method of treatment is practiced, neither it, nor any other American wine so used, can rank with any wines of Europe, except with the spurious productions of Certe, Lisbon, and Marseilles. The difficulty lies in this—*our vine growers are afraid of a hard, dry wine*—because popular taste so far (especially in the rural districts) has been corrupted by the sweetened, sophisticated, poorest class of imported wines, the sweet malagas, and pure juice ports, that are current in every country town. Pure, wholesome wines never are, and never should be, sweet; a glass of syrup is no refreshment for a laborer, is a miserable solace for the student, and as a daily beverage for anybody, actually repulsive; and as we are looking forward to the period when our wine shall be used, not only at weddings, merry-ma-

king, balls and dinners, but as the common drink for all classes of people, we should define now and here, that by *wines*, we mean the pure, fermented juice of the grape, without the admixture of anything else whatever.\*

• That the Scuppernong is a hard, dry wine, when made without sugar, is doubtless true; but the question is, "what character will this very wine assume when mellowed by age?" The Sercial, the king of Mederas, is a harsh, austere and repulsive drink, for the first few years, nor is it drinkable until age has corrected the acerbity of its temper—but what then? Then it becomes one of the most exquisite fluids in the world, and commands a price superior, in some instances, to any known wine, with the exception of Imperial Tokay. The real merits of the native wine of North Carolina, then, still need development; age and proper treatment must, in time, produce something; for the Scuppernong is not destitute of delicate aroma, an important quality, indeed. The mode of culture is peculiar—the vines (layers, not cuttings,) are planted one hundred feet apart, the main branches have space to run fifty feet each way, at right angles from the centre, before meeting.— Each vine may be represented thus -|- the laterals interlacing over head and forming a canopy. The branches are never pruned, as it is said, "the vine would bleed to death." Like the vines in Lombardy, these are *high trained* (*haut tige*), the lowest branches being eight feet above, and parallel with the ground. The yield is most abundant; a single vine often bearing thousands of bunches, the berries small and but few to the bunch. Instances have been cited of single ones yielding enough grapes to make several barrels of wine, and covering two and a half acres of ground. We have no data to estimate the yearly produce of these vines, neither the quantity nor value; but we are well convinced that even now the statistics of

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"Be assured," says President Jefferson, in a letter to Maj. Adium, April 20, 1810, "that there is never one atom of anything whatever, put into the good wines of France. I name that country, because I can vouch the fact from the assurance to myself, of the vigneron of all the best wine cantoned of that country, which I visited myself."



grape culture in this State would present an imposing array of figures.

We have already seen specimens of native vines of Virginia, of excellent quality. The Catawba there is an abundant bearer, and the wine made from it is essentially different from that of Ohio. The climate of this State would seem to be peculiarly adapted for the purpose, and the wild and waste land might be turned to profitable account in the production of vines. To Virginia we are indebted for many species already popular, among which, we may instance "Norton's Seedling," the "Woodson," and "Cunningham." Here, too, the Bland grape grows abundantly; under the name of the Virginia Muscadel. In Maryland and Delaware, also, a variety of native grapes are cultivated, some of extraordinary productiveness. One vine, raised by Mr. Willis (near Baltimore,) in 1832, yielded twenty-five thousand bunches; and in the following year, Messrs. C. M. Bromwell, and R. Monkland certify, that they counted upon it, fifty-four thousand four hundred and ninety bunches, omitting small and young ones, which would have added at least three thousand more.\* Why Messrs. Bromwell and Monkland could not wait till the young ones grew up, is a question. To leave three thousand bunches out of the tally, because they were small and green, is an insult to Young America.

That part of the United States between the thirty-eighth and forty-fourth parallels of latitude, so far, is entitled to the supremacy in grape culture. Already the wines of Ohio and Missouri begin to supplant the imported Rhine and Champagne wines here, even at the same prices. Terraces rise above terraces on the hill sides of the Ohio river, and the red bluffs begin

to disappear beneath masses of vine foliage and purple clusters of fruit. In Pennsylvania, at the end of the last century, an association was formed for the purpose of cultivating the grape, for wine, and vineyards were established at Spring Mill, under the superintendence of Mr. Peter Legoux. This was a failure; foreign wines were tried and abandoned, and finally the wild grape called the Schuylkill Muscadel met with temporary success. It was only *pro tempore*, however, and the failure of that vineyard threw a broad-brimmed shadow over similar enterprises thenceforward. But the vine begins to flourish again in the land of drab, and we presume by and by Pennsylvania will not be behind the rest of the middle States.

In our own State there is already much wine made from the Isabella grape—in Orange county; in Columbia county, among the Shakers; and on the banks of the Hudson, in the neighborhood of the city. We have tried many of these wines, and although want of experience, and improper treatment is manifest, yet there is sufficient merit in them, to insure us in the prediction, "that the grape culture will soon prove to be one of the most valuable fields for enterprise ever presented to the people of New York." Here is the soil, here is the climate for the Isabella; as Ohio is to the Catawba, so will this State be to this grape. Here, too, is the market, so that the cost of transportation will be trifling, and the day may not be far off when ships shall lay beside the rich vineyards on the Hudson's banks, to receive the golden freightage for distant Europe.

In New Jersey the vine has been cultivated for many years, especially in the neighborhood of Burlington. The soil of some parts of this State is peculiarly adapted for the purpose, and we may hope hereafter for better wines than those she now furnishes under a variety of foreign brands. Still further west we find that Indiana, Illinois and Michigan are improving the hint given by Ohio; in fact, Indiana must be recognized as one of the pioneers; for, in the beginning of this century, the most considerable quantity of native wine made in the United States was from the Cape or Schuylkill grape of Vevay, Switzerland county, Indiana.

\* At Mr. Weller's vineyard, about eighteen miles from Wilmington, N. C., two gentlemen, (Mr. J. R. Reston and another,) made an estimate of the produce of two vines. They laid out a square by measure, and picked the grapes within it, and by taking the number of square yards of the entire space occupied by the vines, they were able to tell from the quantity gathered in the square, that the two vines would yield one hundred and fifty barrels of grapes. Taking the weight of a barrel at 200 lbs., this would amount to 15,000 pounds to each vine, or *seven and a half tons!*

Missouri already ventures to contest the palm with Ohio. In 1852, the vineyard at Hermann embraced some forty or fifty acres only, and this year, we are informed that no less than five hundred are under cultivation there, besides many other vineyards in the interior of this thriving State. At the Crystal Palace exhibition, in New York, *six prizes* were awarded to vine growers of Missouri for samples of superior native wines, both Isabella and Catawba, still and sparkling.—The last grape is the favorite there, as it is also in Kentucky and Tennessee. In St. Louis, the native wines are rapidly supplanting the foreign, especially the sparkling kinds; at the hotels there the majority of wines on the tables are of home production.

Now, good friend, if you are tired with our long itinerancy, take the cool, green glass, and reach yonder long-necked, amber-colored, Rhenish looking flask, if you be a hock drinker; or if not, let us cut the cords around this other cork, for the luscious fluid confined within the fair, round bottle, hath that propulsive spirit it must needs be imprisoned, and held with ligatures of flax and wire. You will try the first? Aha! you like it, do you? Compare it with this Rudesheimer, the "Berg" of 1846. Is not the aroma of the last the most agreeable? You think not? That smack of the lips speaks loudly in favor of the other; and what think you of its farewell taste—the *arrier gout*? "Fine," you say, "and delicate, and leaves the mouth sweet and cool." Which do you prefer? "The first," you say? Bravo for Catawba! Good friend surprised, holds forth his empty glass, and says, "You don't say so?" We fill it, and repeat that it is true. Good friend much animated, "Why, when I was in Cologne I paid twenty florins for a bottle of Metternich Schloss Johannesberger, and although it was an old wine, and had the arms of the prince on the seal, yet, to my taste, this wine appears even better than that." We set forth fair champagne glasses, and cut the strings of a bottle of different shape. "Try this," (good friend tastes). "By the moist, purple globules of Bacchus's great plant, this is delicious! (he drinks). What is it?" We answer, "Isabella." (Good friend, watching the sparkles with the glass up to his eye)—"Not our Isabella?"

We reply in the affirmative. "And where in the name of roses and raspberries, was it vintaged?" We answer, "Cincinnati." "Not in the city?" We respond; "The wine is made and the grapes grown within the corporate limits of that celebrated western town." (Good friend, anxiously)—"Proceed with the itineracy."

To Ohio the praise belongs of first producing a pure, native wine, of great merit. Patient, careful cultivation of the fruit, with judicious management of the fermented juice afterwards, is always necessary in the production of a fine wine; and this union of scientific culture with scientific treatment had never been brought to perfection until the vine dressers of Ohio set the example. And first and foremost among these stands Nicholas Longworth, as he is familiarly termed there, "*The father of grape culture in the West.*" It is not alone by years of patient investigation; it is not alone by the success which has followed those efforts; it was not by the vast variety of experiments he has tried, and by the untiring energy which, in spite of numberless disappointments, still survived and triumphed over every defeat, that he has won this title from his fellow-citizens. But it was because every effort and every experiment was for the benefit of all; because, with him, the success of grape culture in this country was paramount to personal considerations; because, by every means, he spreads as widely as possible the results of his investigations and labors, so that the young vine-planter of to-day might stand upon even ground with himself, the veteran of nearly half a century's experience. Adlum and Dufour predicted the success of grape culture in the United States, but Longworth, their cotemporary, lived to see the prediction verified, and mainly by his personal exertions. Would that all patriots were so rewarded.

The two principal wine grapes of Ohio are the Catawba and Isabella; the first, however, in the proportion of twenty to one. Both are natives of North Carolina. The first was found and noticed merely as a wild grape, in the year 1802, by Colonel Murray and others, in Buncombe county, N. C.\* There it reposed for upwards of

\* Buchanan.

twenty years without attracting attention, and so would have remained probably until now, had not its merits been discovered by Major John Adlum, of Georgetown, N. C., in or about the year 1826. Major Adlum, an officer of the Revolution, formerly surveyor-general of Pennsylvania, was a great cultivator of the grape, and devoted the last years of his life to that purpose. In the course of his experiments with native vines, he found this one in the garden of a German at Georgetown, and after a fair trial, was so convinced of its value as a wine grape, that he sent some of the slips to Mr. Longworth, with a letter, saying, "I have done my country a greater service by introducing this grape to public notice than I would have done if I had paid the national debt." Adlum paid the debt of nature soon after, but the slips fell into good hands. For nearly thirty years, with patient perseverance, these grapes were nurtured by Mr. Longworth, until the hour has arrived when the prophecy of Major Adlum seems certain of fulfilment. Thirty years of patient labor; thirty years of unflinching faith; thirty years of man's life; what a span it is! stretching from hopeful youth to hoary age; a long while, my good friend, to look forward to, a long way to look back. In the thirty years to come we may have occasion to thank these pioneers—we may see greater results than either of them dreamed of.

The Isabella grape was first introduced to notice by Mr. Geo. Gibbs, of Brooklyn, L. I. The slips were brought from North Carolina by Mrs. Gibbs, his wife, and the vine, in compliment to her, was named the "Isabella." Originally it was called the "Laspeyre grape," Mr. Bernard Laspeyre, who resided near Wilmington, N. C., having the parent vine from whence these slips were derived. By him it was supposed to be a foreign grape, but all scientific writers on vines in this country assert that the species, in a wild state, is quite common, and is unquestionably an indigenous production of the United States. From these two grapes the best wines are made in Ohio. We may also mention that the "Herbemont," another variety of "the natives," produces an extraordinary fine wine, the flavor being like the purest Amontillado, and essentially different from the other two. Heretofore the demand

for home consumption has prevented the shipment of these wines east of the mountains; but, by the increase of vineyards in Ohio and elsewhere a limited quantity is now being sent to this city and Philadelphia.\*

An estimate of the entire wine crop of Ohio has not yet been made. Within a circle of 20 miles around Cincinnati there were raised in

1848,	-	-	-	84,000	gallons.
1849,	(the worst year for	-	-	36,000	"
	rot ever known	-	-	125,000	"
	there),	-	-	340,000	"
1852,	-	-	-		
1853,	-	-	-		

This year,† on account of the severe cold weather in the spring, and the heavy, long, continuous rains, the crop will be a short one; but new vineyards are multiplying, and, if this year does not promise so well as the last, yet, from the increased number of cultivators, there must be a continually increasing yield of wine, as there certainly is a constantly increasing demand for it.

In comparing those wines with those of Europe, we must bear in mind that they are distinct in flavor from any or all of them. Sparkling Catawba is not Champagne, nor can Isabella be compared with another wine known in the world. It is a peculiarity of these wines that no spurious compound can be made to imitate them, and in purity and delicacy, there is no known wine to equal them. From the experiments made by eminent chemists, we find the percentage of alcohol ranks thus, according to Brande, and others:

Madeiras,	. . . . .	22.27
Ports,	. . . . .	22.96
Sherries,	. . . . .	19.17
Clarets,	. . . . .	17.11
Sauternes,	. . . . .	14.22
Burgundies,	. . . . .	14.57
Hock and Rhine Wines,	. . . . .	12.08
Champagne,	. . . . .	12.01
Tokay,	. . . . .	9.85

Thus, it will be seen, that the most ex-

\* The Isabella and Catawba wines of N. Longworth, were first introduced in New York in May, 1852, by the editor.

† 1854. The crop was a short one.

pensive wine in Europe, the "Tokay," is also the lowest in alcoholic per centage. But, we find, by the analysis of our good friend, Dr. Chilton, that "Still Catawba" shows a per centage of 9.50 only, being, in fact, the lowest per cent of spirit to be found in any wine in the world.

We could pursue this subject for a page or two more, but the wine tide is at ebb in the bottle. We did intend to speak of the late Col. Alden Spooner, formerly editor, in fact, first editor, of the *Long Island Star*; a man of many virtues, and one who was zealous in introducing the grape in the Empire State. We did intend to speak of a gentleman of Ohio, Mr. Robert Buchanan, to whom we are indebted for much information on this subject. We did intend to speak of other eminent vine-growers, but there is a time to squeeze grapes, and a time to squeeze hands, and so reader—*vale!*

### A New and Complete Harvester.

The reporter of the Chicago Tribune, writing from the Illinois State Fair at Peoria, gives the following description of a Reaper and Binder:

Messrs. Manny, Van Doren and Grover, of Ottawa, Ill., show something new in this line: it dispenses with the ordinary binding, by placing the grain in small stacks. The cutting is done in the ordinary way, with an obtuse scolloped-edged sickle.

This machine, drawn by four horses, is claimed, in the hands of ordinary careful men, to cut seven feet wide, and discharge the grain into a moulding box, where one man forms the stack, with the heads inside and the butts outside, binds the same with two wires, and then dumps it as a cart load of earth is dumped, setting the stack firmly on its base, perfectly thatched and "shingled" to defy any harvest storm.

**Shocks**—The stocks or stacks are 4 by 4 feet on the ground, and six feet high. From four to six of them make an acre of ordinary grain. Their style and appearance is symmetrical, and give an evidence of perfect power to resist storms.

**Binding**—This is done with fine wire, which costs only about twelve to twenty cents per acre, and will last many seasons.

Should this succeed as anticipated, it would save a large amount of labor. The owners say: "Of 140 acres cut by this machine, (the only one yet built,) not a single shock took damage or had to be opened to dry. How many can say the same of 140 acres?" It is attracting much attention.

From the Farm Journal.

### Report on Lunar Influence upon Agriculture.

[Published by a resolution adopted at the last meeting of the Huntingdon County Agricultural Society.]

To the President and Members of the Agricultural Society of Huntingdon County:

The undersigned, Committee, to whom was referred the subject of Lunar Influences on Agriculture, respectfully report, that, deeming the subject one of great importance to the farming community, your committee have endeavored to give it that degree of attention which its importance merits.

When it is remembered that at least two-thirds of all the persons engaged in Agriculture and Horticulture, as well as many of those who pursue mechanical avocations, regulate all their operations by the "signs" or position of the moon in the zodiacal constellations, or its place in regard to its own and the earth's orbit, it will at once be apparent that it is a matter of great importance whether there is any philosophy or science in this system of Moonology or whether it is but superstition and folly.

When you ask the believers in lunar influences upon vegetation, in the sense above indicated, for the reason for the faith that is in them, they refer you to the almanac, and there you may contemplate the figure of a man with outstretched limbs, surrounded by the ram, the bull, the twins, the crab, and other animals of various degrees of ferocity, but the *rationale* they cannot give, for the almanac gives it not; but their ancestors from time immemorial looked to the "signs" and regulated their operations by them, and, therefore, they, their sons and daughters go on in the same beaten track, in "blissful ignorance" whither it leads or why they go therein.

Your Committee believe that aside from the effects produced by the solar light which is reflected upon the earth by the moon she has no influence whatever upon vegetation. That light as well as heat and moisture are indispensable to vegetable growth, is a fact too plain to be denied or successfully controverted. And that the increased (and perhaps the quality of) light reflected from the moon when her whole disk or a considerable part of it which is turned towards the earth is enlightened by the sun, has the effect of accelerating vegetable growth and the ripening of crops, are well attested by experience and in perfect accordance with natural philosophy. But this has nothing to do with the signs.

The moon being nearer the earth than any other celestial body, and surpassed in splendor only by the great orb of day, she has excited the attention of astronomers in all ages. While her magnitude, motions and distance from the earth have been nicely calculated and made

known to us by astronomers and mathematicians, they have told us nothing concerning her influence upon vegetation; and this simply, because they, in all their close observations and nice calculations, have never discovered any such influence. The moon, like other satellites and the planets, is an opaque body, and shines entirely by the light received from the sun.—She revolves round her axis from the sun to the sun again in 29 days, 12 hours and 44 minutes and 3 seconds, and she takes exactly the same time to go around her orbit from new moon to new moon, and therefore constantly has the same side turned towards the earth with a small variation called the libration of the moon.

#### THE MOON'S PHASES.

The sun illumines one-half the moon at all times; and the amount of light which is reflected depends upon the relative position of the observer and the enlightened part of the moon.—Thus at the time of conjunction or new moon, the moon is between the earth and the sun, and that part of her face which is never seen from the earth is fully enlightened by the sun, and that part which turned towards the earth is in darkness. Now, as the motion of the moon in her orbit exceeds the apparent motion of the sun by a little over twelve degrees in twenty-four hours, it follows that about four days after the new moon she will be seen a little east of the sun after he has sunk below the horizon. The convex part of the moon will be towards the place of the sun, and the horns towards the left hand. As she continues her course eastward, a greater portion of her face, towards the earth will become enlightened; and when she has removed ninety degrees eastward of the sun, she will present the appearance of a semi-circle or half moon. And passing still towards the east, at the end of  $14\frac{1}{2}$  days, she will be diametrically opposite to the sun, and will rise above the eastern horizon as the sun sinks behind the western, a complete circle or, *full moon*. The earth is now between the sun and the moon, and that half of her surface, which is constantly turned towards the earth is wholly enlightened by the direct rays of the sun, and that half which is never seen from the earth is in darkness. Then, progressing still to the eastward, the moon becomes deficient on her western edge, and when again ninety degrees from the sun, she appears a semi-circle with the convex side turned towards the sun; still continuing her coast eastward, the deficiency on her western edge becomes greater, and she appears a crescent with the convex side towards the east; and in about  $14\frac{1}{2}$  days more she has made a complete lunation and again overtaken the sun. This shows all the phases of the moon, and the manner in which they are produced; and to our minds it is very apparent that these changes or appearances which are constantly and gradually taken place, can have no other effects than those produced by increased or diminished *light*.

#### NODES OF THE MOON, OR THE "UP" AND THE "DOWN" SIGNS.

The nodes are the two opposite points where the orbit of the moon seems to intersect the ecliptic or the apparent path of the earth. But this intersection is merely *imaginary*, the earth moving around the Sun at a distance of 95,000,000 of miles, and the Moon around the Earth at a distance of 240,000 miles, or less than a quarter of a million of miles. The orbit of the Moon is inclined to that of the Earth at a variable angle, the medium of which is  $5^{\circ} 9'$ . The nodes make a complete retrograde revolution from any point of the ecliptic to the same again in 19 years. This is called the cycle of the Moon, after which the new and the full moons, &c., fall upon the same days of the month that they did at the beginning of the period. If the weather depended upon the change of the Moon, every nineteenth year would have the same sort of weather at all corresponding seasons. An almanac 19 years old would suit for this year and inform us of all the changes of the Moon and the consequent changes of the weather. But this is a slight digression.

The node where the Moon seems to ascend from the south to the north side of the ecliptic is called the ascending node, and the almanacs make it the "up sign;" and the opposite point where the Moon appears to descend from the north to the south is called the descending node—the down sign. In astronomy these nodes are sometimes called the north node and the south node, and sometimes the dragon's head and the dragon's tail.

If we take two large rings of nearly equal size and place one within the other, so that the one-half of the one will be above and the other half below the other ring, at an angle of about five degrees, the one ring will represent the orbit of the Earth and the other that of the Moon. The two points of intersection are the nodes.—The Earth revolves around one of these rings or orbits annually, and the Moon around the other monthly. When the Moon, passing around her orbit, crosses the point of intersection, (or an imaginary line drawn from the one point of intersection to the other,) from the south to the north side of the ecliptic, she is in the ascending node—in the "up sign"—and when she reaches the opposite point she is in the descending node—the "down sign." The Moon is therefore continually alternating from the one node to the other, being about one-half the time above and the other half below the orbit of the earth, but in reality all the time millions of miles from the one side or the other of the Earth's orbit.

Now, if any can suppose that the *attraction* of the Moon can draw up or press down objects upon the Earth, such as roofs of buildings, fences, flax or manure spread, &c., that effect must be apparent in about two weeks, for that is the length of time that the Moon continues in each

of these signs. After that time, the attraction still existing, there would be an alternate drawing up and pressing down as long as the moon shall wax and wane. The believers in the signs have never yet discovered how soon the effects of the Moon upon the objects affected become visible; but they do not generally look for these effects as soon as the moon has passed from the one sign into the other.

#### THE ZODIACAL SIGNS.

The zodiac is a broad circle in the heavens, extending in breadth from the tropic of capricorn to the tropic of cancer. It is about sixteen degrees in width. The ecliptic is situated in the middle of the zodiac. The zodiac contains the twelve constellations or signs through which the Sun passes in his apparent annual course. This circle is supposed to be divided into 360 equal parts, called degrees, and these again into minutes and seconds.

The prevalent opinion among learned men is, that the figures in the signs or constellations of the zodiac, are descriptive of the seasons of the year, and that they are hieroglyphics to represent some remarkable event or occurrence in each month. Thus no productions being more useful to the Chaldeans, than lambs, calves and kids, and they generally being brought forth in the spring of the year, these distinguished that season. Their flocks were increased, and the ram was considered a fit representation of the month in which this occurred. Their herds were increased and the bull became emblematical of this. And the goats being the most prolific, they were represented by the figure of the twins. Thus we have Aries, the ram, Taurus, the bull, and Gemini, the twins, as the representatives of the spring of the year—the figures of the spring signs. When the Sun enters the constellation of Cancer, he discontinues his progress towards the North pole, and begins to move back towards the South pole, and this retrograde motion is represented by the crab, which travels backwards. The heat which usually follows in the next month (July) is represented by the Lion, an animal remarkable for its fierceness, and which, at this season of the year, was frequently impelled by thirst, to leave the sandy desert, and makes its appearance on the banks of the Nile. In the next month, harvest commences in that country, and as damsels are generally set to glean in the fields, like Ruth in the field of Boaz, this season is represented by a Virgin holding a sheaf of wheat in her hand. The Sun next enters Libra, at which time the days and nights are equal, and observe an equilibrium, like a balance. So we have the Lion, the Virgin, and the Balance for the summer signs. Autumn, in ancient times, produced an abundance of fruit, (perhaps of inferior quality,) and brought with it a variety of diseases. This season is therefore represented by the Scorpion, which wounds with a sting in his tail as he recedes. The Sun enters the next constellation at the

fall of the leaf, when the fields are clear of the crops, and the season for hunting commences. The stars which mark the Sun's track's in this month, are represented by the huntsman or Archer, with his bow and arrows and other weapons of destruction. The Sun passing into the next constellation, reaches the winter solstice, and commences ascending towards the north. This season is therefore represented by the wild goat, which delights in climbing and ascending the mountain in search of his food, which was considered emblematical of the ascent of the Sun. The next sign, Aquarius, the water-bearer, pouring water out of an urn, is emblematical of the wet, dreary and uncomfortable season of winter. The last of the zodiacal signs is a couple of Fishes, representing the fishing season.

In the time of the oldest astronomers, the equinoctial points were in Aries and Libra; but the signs which were then in conjunction with the Sun, when he was in the equinox, are now 30 degrees, or a whole sign eastward of it; so that Aries is now in Taurus, Taurus in Gemini, &c.

The signs are the invention of the ancients, and like that system of fables styled Mythology, they had their origin in superstitious and idolatrous notions. The Chaldeans probably are entitled to the credit, such as it is, of imagining that certain groups of stars resembled certain animals, such as the bear, the dog, the serpent, &c., and the Egyptians worshipped the host of heaven under the most of these imaginary figures, particularly the signs of the zodiac. They also worshipped the sun under the name of *Osiris*, imagining it a proper representative of the Deity shedding light and heat over the universe. And as the moon received her light from the sun, she was esteemed a female divinity, and honors were paid her as such, under the name of *Isis*. The overflowing of the Nile, which occurred periodically, was particularly beneficial to the land of Egypt, and as that river always began to swell at the rising of Sirius, the most brilliant of the fixed stars, they had a special veneration for the dog star, as if its influence had brought about the overflow of the Nile, and the consequent fertility of the soil.

The Greeks displaced some of the figures of the Chaldeans constellations, and placed in their stead such images as had reference to their own history. The same thing was done by the Romans; and hence some of the accounts given of the signs of the zodiac and of the constellations, are contradictory and involved in fable.

Such is the history of the signs of the zodiac in a condensed form. These constellations and signs were clusters of stars which marked the position of the sun in the heavens, and were called the "*station-houses*" of the sun. They are twelve in number, containing each 30 degrees, and the sun was about a month in passing through each of them. When we consider

that in the days of their origin, chronometers and almanacs had no existence, and astronomy was in its infancy, we cannot but admire the beauty of the system as well as appreciate its utility. It made a magnificent time-piece of the star-spangled canopy, and the hosts of heaven pointed out the length of days, months and years. What a perversion it is, then, to make these signs or constellations the station-houses of the moon as she passes round the earth. It converts them into food for superstition and ignorance, and they carry with them a train of inconvenience. The moon's transit through the signs is rapid, occupying but little over two days in each, and the almanac makers place her in one sign two days or three as best suits their convenience, without regard to fractions of days.

For example, the sign is in the Crab for two or three days, according to the almanac, and although the weather may be fine, and the field in excellent order, the farmer who consults the moon will not sow or plant in that inauspicious sign. Or the sign is in Virgo sometimes called the "Posey Girl," and everything then sown or planted, will expend all its energy in blossoms, on account of that girl's propensity for flowers. And equally good logic is employed in behalf of all the other signs. What folly!

The believer in moonology will no doubt be gratified to learn that when the moon's position is between the earth and any of the zodiacal signs, the stars composing that sign are so immensely far from both the earth and the moon, that they cannot possibly have any influence whatever upon the earth or any of the operations of the inhabitants of the earth! The fixed stars nearest the earth are at an inconceivable distance. It may be stated to be more than twenty billions of miles; but the common mind can form no adequate conception of such distance. We may acquire some faint idea of the immense distance of the nearest of the fixed stars from the earth, by considering that the sun is 95,000,000 of miles from the earth, and that the nearest of the fixed stars is 212,000 times further distant. A cannon ball flying with a uniform velocity, 500 miles every hour, would require 4,595,000 years before it could move from one of those stars to the earth; and the different stars of the same constellations may be at still greater distances from each other. Such immensity of space is bewildering to the ordinary mind: but these considerations show plainly that the moon's position in regard to any of the constellations, can have no influence upon the earth, which is but an atom in the universe.

In conclusion, your committee would state that the facts embodied in this report, are such as are agreed upon by astronomers and mathematicians—such as are found in the lessons intended for the schools; but your committee do not expect this report to meet with much favor from a large portion of the community. In-

deed, truth is never more unpalatable, than when she brushes away from the mind, a long cherished fallacy, and exposes error in all its naked deformity. Many will not believe that they have all their lives been in error. They cannot make up their minds to surrender their whole stock of "knowledge." They will hold on to their *blind* faith, and continue to regulate their labors and their lives by the signs. But we trust there are others in whom the presentation of well established truth—matters-of-fact and of calculation and observation, will awaken reflection—that they will see the folly and superstition of the signs, and be ready to follow the teachings of reason. The Scripture speaks of husbandry—of plowing, digging and manuring—of planting and sowing—and of the early and latter rain—but not a word of any signs to regulate the husbandman in any of his labors. And Solomon who was esteemed a wise man in his day, was entirely ignorant of the signs which some of our modern Solomons understands so well, for he is profoundly silent on the subject, although he says: "In the morning sow thy seed, and in the evening withhold not thine hand, for thou knowest not which will prosper, either this or that," &c.—Is it not time that the agriculturist should emerge from the superstition which has so long enveloped him, and follow the advice of Solomon, instead of the devices of the Egyptians and Chaldeans?

Facts and arguments might be adduced to show that all the effects attributed to the influence of the moon, could be accounted for, on truly philosophical and scientific principles, but they would swell this report, which is already sufficiently extended, beyond endurable bounds, and we therefore forbear.

All which is respectfully submitted.

THEO. H. CREMER,  
THOS. F. STEWART,  
R. M'DIVITT.

Huntingdon, Nov. 13, 1856.

### Splitting Rock without Blasting.

Some French inventors have taken out a patent in England for splitting rocks by the generation of heat without causing an explosion.—They used a substance composed of 100 parts of sulphur by weight, 100 of saltpetre, 50 of sawdust, 50 of horse manure, and 10 of common salt. The saltpetre and common salt are dissolved in hot water, to which four parts of molasses are added, and the ingredients stirred until they are thoroughly incorporated together in one mass, which is then dried by a gentle heat in a room or by exposure to the sun, and is fit for use. It is tamped in the holes bored for blasting rocks in the same manner as powder, and is ignited by a fusee. It does not cause an explosion upward like gunpowder, but generates a great heat, which splits the rock.

### How they brought the Good News from Ghent to Aix.

The following beautiful lines by *Browning*, aside from the powerful presentations of the scenes described, are particularly interesting for preserving the exciting galloping meter throughout in such distinctness.

I sprang to the stirrup, and Joris and he;  
I galloped, Direk galloped, we galloped all three;  
"Good speed!" cried the watch as the gate-bolts undrew,  
"Speed?" echoed the wall to us galloping through;  
Behind shut the postern, the lights sank to rest,  
And into the midnight we galloped abreast.

Not a word to each other: we kept the great pace  
Neck and neck, stride by stride, never changing our place,  
I turned in my saddle and made its girths tight,  
Then shortened each stirrup and set the pique right,  
Re-buckled the check-strap, chained slacker the bit,  
Nor galloped less steadily Roland a whit.

'Twas moonset at starting, but while we drew near  
Lokeren, the cocks crew and twilight dawned clear;  
At Boom a great yellow star came out to see;  
At Duffield 'twas morning as plain as could be;  
And from Mechelm church-steeple we heard the half chime,  
So Joris broke silence with "Yet there is time."

At Aerschot, up leaped of a sudden the sun,  
And against him the cattle stood back every one,  
To stare through the mist at us galloping past,  
And I saw my stout galloper Roland at last,  
With resolute shoulders each butting away  
The haze as some bluff river headland its spray.

And his low head and crest, just one sharp ear bent back,  
For my voice, and the other pricked out on his track;  
And one eye's black intelligence,—ever that glance  
O'er its white edge at me, its own master, askance!  
And the thick heavy spume-flakes which aye and anon  
His fierce lips shook upward in galloping on.

By Hasselt, Direk groaned; and cried Joris,  
"Stay spur!  
Your Roos galloped bravely, the fault's not in her,

We'll remember at Aix"—for one heard the quick wheeze  
Of her chest, saw the stretched neck, and staggering knees,  
And sunk tail, and horrible heave of the flank,  
As down on her haunches she shuddered and sank.

So we were left galloping, Joris and I,  
Past Loos and past Tongres, no cloud in the sky;  
The broad sun above laughed a pitiless laugh,  
'Neath our feet broke the brittle bright stubble like chaff;  
Till over by Delhelm a dome-spire sprang white,  
And "Gallop," gasped Joris, "for Aix is in sight!"

"How they'll greet us!"—and all in a moment his roan  
Rolled neck and crop over, lay dead as a stone;  
And there was my Roland to bear the whole weight  
Of the news, which alone could save Aix from her fate,  
With his nostrils like pits full of blood to the brim,  
And with circles of red for his eye-sockets' rim.

Then I cast loose my buff coat, each holster let fall,  
Shook off both my jack-boots, let go belt and all,  
Stood up in the stirrup, leaned, patted his ear,  
Called my Roland his pot-name, my horse without peer:  
Clapped my hands, laughed and sang, any noise bad or good,  
Till at length into Aix Roland galloped and stood.

And all I remember is friends flocking round,  
As I sate with his head twixt my knees on the ground,  
And no voice but was praising this Roland of mine,  
As I poured down his throat one last measure of wine,  
Which (the burgesses voted, by common consent,)  
Was no more than his due who brought good news from Ghent.

The scratches in a horse may be cured, unless very inveterate, by washing thoroughly with soapsuds, and then rubbing with lard fried out of salt meat. Keep clean, and wash and grease every other day until a cure is effected. Leaving mud to dry upon the legs of a horse is one great cause of this disease, and many horses are injured by want of care and cleanliness when driven in muddy weather.—*Rural New Yorker*.



From the American Farmer.

**The Wheat and the Dairy Districts of the United States.**

Some few years ago, we published one of the most valuable papers in our journal, which it has ever been our privilege to present to our readers. It was from the pen of our late lamented friend, *Chauncey P. Holcomb, Esq.*, of Delaware, in whose death the agricultural classes of our Union, have lost one of the most able and zealous advocates of its rights and interests. The paper in question was on the *Wheat Region of the United States*, in which it was shown, that there was a portion of territory, running through a part of Pennsylvania, Delaware, Maryland, Virginia, and including some portion of the western States to Michigan—not embracing all the territory of the States named, but including a belt which might emphatically be considered the permanent Wheat Region of the country. The land-holders of Maryland and Virginia, in particular should have had that paper circulated, by the million, as a kind of agricultural tract, to call attention to settlers from other quarters to the peculiar value of their lands—so many thousands of acres of which are uncultivated—for the production of the wheat plant. We may hereafter republish the article in question—and in passing, would remark, that since its appearance in our pages, we have had an eye upon the subject, and are fully satisfied that the views taken by the respected writer, were in the main correct. Our object at present is to call attention to the admitted fact, that the cultivation and power of production of wheat in the great State of New York, is, and has been for years, on the decline. We remember that shortly after the publication of the article in question, we had the pleasure of attending a delightful meeting around the hospitable board of Mr. H., at Devondale, at which a number of the most prominent farmers, jurists and statesmen of Delaware, all identified with agriculture, had assembled, to consult upon the best means to secure an endowment of a Professorship of Agriculture in Newark College—which object, through the plans then concocted, we believe, was accomplished in a spirit of liberality worthy of the sons of that little Diamond State, and of the imitation of their neighbors. As we were about starting for the cars we received one of the agricultural periodicals of the State of New York, in which the regular decrease in the production of wheat was admitted, which if we remember aright, we read to the meeting alluded to. Our attention is again directed to the subject, by reading the proceedings of a meeting in the city of Albany, to dedicate a hall to be devoted to the purposes of agriculture, prepared for the State Agricultural Society of New York. Hon. T. C. Peters in his address before the Society, in directing attention

to the importance of the Dairy, to the agriculturists of that great State, the region for which he defines, admits “*that the crop of wheat has very largely decreased—so much so, that the State can no longer be classed among the wheat exporting States.*” It will be remembered by many of our readers that the Genesee territory and the western portion of New York, were at one time considered the best lands for the production of wheat in this country. We may draw attention more fully to this subject at a future day, in the mean time we append an extract from the remarks of Mr. Peters, on the occasion alluded to; they are suggestive of reflection to the statesman, as well as to the farmer:—

“The real Dairy region of the United States, as compared with its whole area, is very small—compared with the land now in use it is but about one-fourth, compared with its whole area, it is less than one-tenth. The western and southern line of Pennsylvania is the extreme limit west and south of the true or primary dairy region. The basin of the lakes may be considered as within the dairy zone, but it is secondary to this.

“Our own glorious State, from its conformation and situation, is the heart of this favored region, and is peculiarly fitted, both by soil and climate, for the fullest development of dairy products. It becomes important then to know whether it constitutes the most profitable branch of farming.

“To obtain a satisfactory solution of this problem, permit me to submit a few statistics. The acres of land in use in

1821	-	-	-	-	5,717,494
1825	-	-	-	-	7,160,967
1835	-	-	-	-	9,655,426
1845	-	-	-	-	11,757,276
1850	-	-	-	-	19,119,084
1855	-	-	-	-	26,758,182

“The land in use includes all that belongs to the farm, whether in wood or under cultivation. If the figures of the last census be true, it would appear that there are less than three millions of acres of land in the State yet to be brought into use.

“The land brought into use during the last thirty years has nearly quadrupled, yet it does not appear that any crop or kind of stock has increased in an equal ratio. Thus in 1821 we had 1,215,049 head of neat cattle, and in 1855 there were but 2,105,464. Of horses, in 1821 there were 262,623, and in 1855, 568,700. A most remarkable change in our stock is in regard to sheep: in 1825 there were 3,496,539, and in 1855, 3,207,024—nearly 300,000 less than thirty years ago. But in 1845 we had 6,443,855, there having been a steady gain from 1821 to that date. From that year they have steadily decreased, so that the loss in the last ten years has been 3,236,858, and the decrease in

the quantity of wool produced is not far from five millions of pounds. As this great decrease has been in the fine woolled breeds, it is evident that wool growing in this State has ceased to be a profitable branch of general farming. This decrease in sheep is the more remarkable from the fact that *the crop of wheat has also very largely decreased—so much so, that our State can no longer be classed among the wheat exporting States.*

"In 1840 we produced 12,286,418 bushels of wheat, and in 1845 the product was 13,391,770 bushels. From that year it declined till 1855; the product of spring and winter wheat was only 9,092,402 bushels, and the product of the past year probably did not exceed six millions of bushels. In our spring crops there has been no material change, except in corn. This corn, perhaps the most important grown upon the earth, has been rapidly increased during the past fifteen years. In 1840 there were 10,972,286 bushels, and in 1855 there were 19,290,691 bushels.

"We find when we turn to the dairy statistics, that the tendency of our farming has been in the right direction. In 1845 we had 999,490 cows, and in 1855, 1,058,427, though the number had decreased to 931,324, making the increase during the last five years equal to about 25,000 annually. In the products of the dairy some facts are disclosed worthy of notice. In 1845 we produced 79,510,733 pounds of butter and 36,744,976 pounds of cheese, making an aggregate of 116,246,709 pounds. In 1850 the butter had increased only about 100,000 pounds, while the product of cheese had gone up to 49,741,413 pounds—nearly thirteen millions of pounds during the five years. But in 1855 we produced 90,293,073 pounds of butter and 38,944,249 pounds of cheese—the aggregate dairy product of that year being 129,237,322 pounds, against 129,507,000 in 1850. This large increase in butter and decrease in cheese would seem to indicate that butter making was more profitable than the manufacture of cheese. It is not improbable that the census of 1860 will show a still greater difference, for there can be little or no competition with our best butter in any market. Its continued advance in price, notwithstanding the large increase of land brought into use in the United States, is a sufficient guarantee to the farmers of this State, that in one branch of agriculture they have nothing to fear from the fertile lands of the West.

"Herein then is our strength, and through this branch of agriculture we can distance all competition, and create upon our own farms a perpetual mine of increasing wealth, unlike all other mines, possessing within itself the power of perpetual replenishment. If we rightly direct our energies, our agricultural supremacy is as certain as our commercial."

### Domestic Providences, Or Domestic Life in the Free States.

What a mysterious Providence! say the farmers' wives, as they come together to look for the last time on one of their number; and they glance pityingly on the bereaved husband and the family of children, varying in size, from the tall youth or blooming maiden, down to the little child. Truly, it is a mystery, that she should be taken away in the prime of life, when her children need her watchful care and counsel more than ever before. But let us examine into the life led by most farmers' wives, and see if we can gain a clue to the "Mysterious Providence," which so often leaves the family circle desolate.

A young farmer marries, and for a year or two his wife can do very well without help; but by and by, his work is too much for him alone, and he must have a hand; and one by one, little children increase the family until the wife's burden is much heavier than when she took it up. But he is just getting a start, and if they want to get rich, (as every body does,) they must economise; so she "gets along" without help. She rises early, milks the cows, gets breakfast, often for several men, dresses the children, washes dishes, skims milk, churns, perhaps sweeps rooms, makes beds, prepares dinner, "cleans up," snatches an hour to sew, keeping a restless baby quiet meanwhile, gets supper, milks again, puts children to bed, and after they and husband are asleep, resting from their weariness, sits up to sew, that she may save paying a seamstress.

In addition to this daily routine, she does all the washing, ironing, baking, scrubbing, house-cleaning, soap-making, and hog-killing work; it costs so much to hire help. So year after year she toils and drudges, not allowing herself the least opportunity for improving her mind, so that she may be a better guide and counselor for her children. And very soon her fair face is faded and care-worn, her temper soured and fretful, and herself prostrated now and then by fits of illness, only to resume her wearying labor as soon as her returning strength permits. And thus she yearly becomes less able to bear the burden of her increasing household duties. If the husband is a kind, considerate man, who has been taught to assist his mother in boyhood, he makes her work lighter, by carrying wood and water, amusing the children, and doing numberless little things, which may be trifling in themselves, but are of much importance in the aggregate.

But too many men leave the wife to draw water and carry wood, and if she finds it cut part of the time, she considers herself fortunate; and as for the baby—he thinks it a woman's place to nurse children, so it frets and cries, or mamma must work with it on her arm, while he reads his paper, or talks with his hired men. Well the farm increases in value and fertility, and his labor in producing

for his family becomes lighter, as he is able to hire more help; but it is an old thing, both to himself and his wife, for her to do all the house-work, with what little help the elder children, if they are girls, can give her; for if they are boys, they cannot work much for her; as soon as they can use a hoe, they must help father; and so the toils on in the same old fashion.

And when the comfortable new house is built and nicely furnished, and her children are beginning to be a real help to her, *the pale, sickly wife and mother lies down to die!* Truly, her sun goes down at noonday. She has saved, by ceaseless, wearying toil, hundreds of dollars for her husband, and he has lost—what money is powerless to recall—the companion of his youth, the one who has walked beside him through life's most thorny paths.

And friends say it is a "Mysterious Providence!" Just as if God ordained that the mother should be taken from her children when they are most exposed to temptation and danger! Instead of laying it on Providence, let us remember the days spent in toil, when the weak, exhausted frame was suffering from disease, induced perhaps by over-exertion; the hours stolen from needed slumber and devoted to labor; the numberless household duties performed with a fretful infant upon her arm; the immense amount of time spent in cooking over a hot fire, and the many sleepless nights passed in anxious watching over sick children. When we look at the subject in this light, is it so very mysterious that so many women die in their prime?—*New Jersey Farmer.*

### A Horse With the Heaves.

I tried all sorts of heave powders on my patient with no effect whatever. It is said that in a limestone country this disease is unknown, and lime water was prescribed with no apparent advantage. Some one told me to give the horse ginger, and strange to tell, I found that a tablespoonful given to the "General" with his oats, would cure him for the day, in half an hour after he had eaten it; but on giving it daily the effect soon ceased. It is a jockeys remedy, and will last long enough to swap upon. Finally, I was advised to cut my horse's fodder and give it always wet. I pursued that course carefully, keeping the "General" tied with so short a halter that he could not eat his bedding, giving him chopped hay and meal three times a day, and never more than a bucket of water at a time.

He improved rapidly. I have kept him five years, making him a *factotum*—carriage-horse, saddle-horse, plow and cart horse—and he bids fair to remain useful for five years to come. Kept in this way, his disease does not lessen his value for speed or labor, a single dollar. When the boys grow careless, and give him dry hay, he informs me of it in a few days by the peculiar cough I have mentioned; but sometimes, for six months together, no indica-

tions of disease is visible, and he would pass for a sound horse with the most knowing in such matters. There is no doubt that clover hay, probably because of its dust, often induces the heaves. Stable keepers with us, refuse it altogether for this reason.

Many suppose that the wind of the horse is affected by the heaves, so that fast driving at any time will, as we express it, put him out of breath. With my horse it is not so.

When the "General" was at the worst, rapid driving, when just from the stable, would increase his difficulty, but a mile or two of moderate exercise would dissipate the symptoms entirely. We have, occasionally what are called *wind-broken* horses, which are nearly worthless for the want of wind. They can never be driven rapidly without great distress, and frequently give out entirely by a few hours' driving. This is thought to be a different disease. The "General's" case is, I suppose, a fair example of the *heaves*.

I have no doubt that regular feeding with chopped and wet fodder, and exclusion of dust from hay fed to other animals in the stable, would render many horses now deemed almost worthless, and which manifestly endure great suffering, equally valuable for most purposes, with those that are sound.—*Indiana Farmer.*

American Agriculturist.

### House-Keeping in the Country—No. II.

Is the list so long? Meat that will not keep, bread that will mold, butter always soft, scarce vegetables, skim milk and stale eggs, the very articles that you imagined sprang up spontaneously good everywhere "in the country." Is the butcher an unknown institution? or have you one who reigns tyrant over the neighborhood, granting you now and then, of grace, a whole quarter which you cannot possibly eat before it spoils? And last, worst of all, the flies, flies, flies!

I remember a friend of mine once summed up her experience in these words: "I could be happy but for servants that *won't* work, and preserves that *will*." Of course she lived in the country.

You will be glad to know that there are remedies for nearly all these troubles, could one only find them out; but for some of them it will be necessary to go back to the very foundation of your house-keeping, viz: the house itself.

Comfort and convenience *ought not* to be sacrificed to show in the city; but in the country they *must not*. There are some things about a house, which are worth all the carved rose-wood and gilt hangings in the world, for they are absolutely indispensable to your living with comfort, elegance or economy.

In the city, where you can buy your stores as you need them, it matters little where you keep them; but where you provide each day something which you will eat for dinner six

months hence, it makes a great difference indeed.

Without a dry, cool cellar, convenient pantries and closets, an ice-house, or its best substitute, you cannot expect any satisfaction or comfort, unless your talents for management and contrivance are extraordinary indeed. Nor should these additions to a house be over-ruled on the score of economy. The price of one carved arm-chair will build an ice-house, and the interest on the cost of a set of lace curtains will fill it every year. It cannot be so great a trial to a house-keeper to live in a house furnished ever so simply, as it is to endure such constant waste, confusion and annoyance in the kitchen department. I have seen some things in my time.

A good ice-house is the greatest of luxuries; so great, that I would say to those of competent fortune, have it at any cost: but if it is impracticable, and you cannot depend upon your cellar, a spring-house or well-house will serve as a tolerably good substitute, costing as much to build, but nothing to fill. I suppose everybody knows what a spring-house is? A well-house is for those who have no spring, and is built in the same manner, of brick or stone, with a paved floor, and a channel through which runs the water from the pump. The channel must be shallow enough to stand the milk-pans in, and if the building is shaded and kept dark, it will keep milk and butter very cool and fresh. If you have a good drainage, such an arrangement could easily be made in the cellar.

A well-box is another substitute for an ice-house on a small scale. With four or five strong nails firmly driven in the side, and as many ropes, you may have butter, yeast, fruit, meat and the cream-kettle, all swinging in it at once, as we have had many a time. Butter that has "come hard" will stay as hard in it as in ice. There are few cellars in which bread and flour will not mold, in warm weather. They should be kept in a dry place on the ground floor, the first wrapped in a cloth, or in a tin box, the other in a wooden bin.

Preserves, if made rightly, will never ferment in a closet on the north side of the house. Of course, it ought not to be next a chimney, where a fire is kept up.

Your cellar should either be paved, or limed and sanded through its whole extent; the milk-cellar partitioned off, white washed, well aired, darkened most of the day, and as clean as hands can make it. You may think, perhaps; that to those who keep but one cow, and make only butter for the family, all this care will not be necessary. In fact, it is rather more so; for it is needful to turn a little to the utmost advantage.

I have mentioned these things, not so much as directions for preserving stores, for you can find these in any domestic receipt-book, but as hints to those intending to build or buy in the

country what conveniences they should make sure of securing.

Without these, you may dwell in the most picturesque of Gothic cottages; your columns may be wreathed with ever-blooming roses, and your windows overlook the Vale of Arcadia itself, but Contentment will never nestle under your vines, or Peace make her home in your bosom.

EMILY.

WINDHOLME, Pa., July 18, 1857.

### Transference of Vitality.

Let parents read and ponder upon the following, if they would save the lives of their little ones:

Parents and aged persons—although these latter exhibit a remarkable fondness for sleeping with children—should be careful not to permit young persons to repose in the same bed nor in the same apartment with the emaciated or the aged, for the transference of vitality from the young to the old, is not a nursery tale, but a serious, and too often a fatal fact.

Children who are habitually placed in contact with the aged, however vigorous before such a disposition was made of them, became wan, sickly, contract diseases which properly belonged to persons in advanced life, and if the contact is continued die from pure vital exhaustion. Their fresh and positive magnetism is thus absorbed by negative or non-magnetic persons, to the benefit of the latter, and the injury of the former. The life of the aged may be prolonged by these means—at the expense of the existence of the young. Many of the children who die in this city are thus prematurely cut off. Parents should know this important fact, and at once correct the evil, if unhappily it exists in their families.

Says Dr. James Copeland: A not uncommon cause of depressed vital power is the young sleeping with the aged. This fact, however explained, has been long remarked, and is well known to every unprejudiced observer. I have, on several occasions, met with the counterpart of the following case: I was, a few years ago, consulted about a pale, sickly and thin boy, of about 4 or 5 years of age. He appeared to have no specific ailment, but there was a slow and remarkable decline of flesh and strength, and of the energy of the functions—what his mother very aptly termed a gradual blight. After inquiry into the history of the case, it came out that he had been a very robust and plethoric child up to his third year, when his grandmother, a very aged person, took him to sleep with her; that he soon afterwards lost his good looks; and that he continued to decline progressively ever since, notwithstanding medical treatment. I directed him to sleep apart from the aged parent, and prescribed gentle tonics, change of air, etc. The recovery was rapid.

But it is not in children only, that debility is

induced by this mode of abstracting vital power. Young females married to very old men suffer in a similar manner, although seldom to so great an extent; and instances have come to my knowledge where they have suspected the cause of this debilitated state. These facts are often well known to the aged themselves, who consider indulgence favorable to longevity, and thereby illustrate the selfishness which in some persons increases with their years. Every medical practitioner is well aware of the fact, and parents are generally advised not to allow their infants to sleep with aged persons.—*Waverly Magazine.*

### Clean Shucking Corn.

Among the multitudinous insects that infest grain, and especially corn, there is none, perhaps, more destructive than the weevil, (known zoologically, I believe, as the "Bill Bug," or Corn "Borer,") and any effectual means of protection against the ravages of this insect would be a desideratum to corn growers. In the Patent Office Report for 1854, the Agricultural division, Mr. Montgomery, of Colorado, Texas, states that he has tested "with complete success, a plan for preserving corn against the ravages of the weevil. It is to store the corn dry, and in good condition, in air tight cribs. 'My cribs, says 'Mr. Montgomery, are built of logs, pointed and plastered with clay, and shedded all round.'" Mr. Montgomery, however, does not state—and I regret the omission—whether his corn is husked (*shucked* is a phrase better understood with us) before it is put up, or whether it is housed *in the shuck*.

Corn being the most valuable of all the cereals, its preservation from the ravages of insects is as important, and deserves as much consideration, as its growth; and as all growers of the article should impart such information as they may possess on the subject, I will contribute my experience. For some years I followed the example of my neighbors, and housed my corn in the shuck; that is, put it in the barn or crib without stripping the shuck from the ear—and, much to my annoyance, I invariably found, as the summer advanced that the corn would be much eaten by the weevil; so much so frequently as to leave little else of the grain than the outer shell. Five years ago, when harvesting my corn, I put up a portion of it in the usual way with the shuck on, and the remainder was *clean shucked*, and put into a separate house—the object being to ascertain whether both parcels would suffer in an equal degree from the depredations of the weevils. The result was, that the corn housed *in the shuck* was infested by the weevil as in previous years, while that which was *clean shucked* was as sound during the succeeding summer and fall as when first harvested, and scarcely a weevil to be found among it. Since then, and for the last five years, my corn is hauled from the field to the barn-yard, where

it is thrown from the wagon into heaps, and entirely divested of the shuck before it goes into the barn. The experience of five years has confirmed the result of my first experiment; and my old corn in the summer and fall is as free from weevil, and as firm and heavy as when harvested the preceding fall.—*Correspondent Pee Dee Times.*

### Rose Culture.

Four things are absolutely essential in high rose culture—a rich and deep soil, judicious pruning, freedom from insects, and watering when requisite. If any of these be wrong, the success will be in proportion incomplete. Soil is the first consideration; what is termed a sound loam, they all delight in; the soil should be adapted rather to the stock than to the scion, or kind worked on it. The common or dog rose stock, thrives best on strong loamy soil; in half-shaded situations near water, without manure; cultivated roses require the latter, because they have more hard work to do; their amount of blossom, if weight alone be allowed as a test, would, in most cases, doubly and trebly exceed that of the dog rose—added to which they have less foliage.

Roses, on their own roots, require that the soil be modified according to kind; we should not use so adhesive a soil to a Tea or Bourbon rose as to ordinary kinds; organic matter is here required. Depth of soil is of great importance to all kinds; it is the deeper series of fibres, situated in a proper medium, that sustains a good succession of flowers, in defiance of heat and drought.

Judicious pruning reduces the rampant growths, and increases the energies of those which are of a more delicate constitution—relieves from superfluous shoots and useless wood, and reduces the whole outline to a compact or consistent form. Insect ravages must be guarded against—tobacco water or fumes will do this; bathing them twice a day with water from a barrow-engine is only objectionable from the time required. If you have not provided deep culture, watering, in dry times, will be requisite; but this should be done thoroughly rather than frequently; and the soil should be frequently stirred without injuring the roots. Liquid manure—say two ounces of guano to a gallon of water—should be given once a week. With this treatment every one may have fine roses.—*Horticulturist.*

HOG CHOLERA.—The Alexandria Sentinel learns by a gentleman from the neighborhood of Dumfries in Prince Edward County, that large numbers of hogs are dying there of the above distemper. One farmer had lost 34, and two others 12 each. The vomitings, purgings and cramps which mark the disease are such as at once to suggest the name by which it is known.

[From the Papers of the Albemarle Hole and Corner Club.—No. 2.]

### A Plea for Farmers' Clubs.

The growing disposition among farmers to combine their efforts and invoke co-operation in their business, is a happy augury of success and progress. The dispersed situation in which they live, and their past indifference to the necessity of union and concert, have been unfriendly to the protection of their interests and the improvement of their practises. It is quite a shame to contemplate in how many respects the law leaves them exposed to burthens and depredations, to which no other citizens, with readier means of combination, would think of submitting. Take a few instances: the principles of the Common Law, which constitute the basis of our system, are boasted of for the *sanctity* it imparts to the *freehold*; and yet in this State, where there are no rights by prescription, the freeholder who does not at an enormous expense and labor, keep his lands *enclosed*, finds them exposed to an unlimited right of *common*; and even where his fences are lawful, trespasses are so difficult to be redressed without disagreeable collisions and offensive agencies that they virtually go unpunished. His personal rights do not fare better; his sheep-fold may be invaded, and the most extensive havoc committed upon his flock at night by vile curs; and unless, in the morning, he can follow up and detect the marauders, he has no indemnity for the past, nor security for the future; and this, too, through tenderness for the unfed dogs of a village; and the negroe's pet, which is not only his faithful companion, like Syke's dog, but too often his ally in plunder; and his spy, and his guardsman against the patrol. The law will guard the markets against impositions upon the buyers; but what effort does it make to save the farmer from the unexpected depressions, which speculators and interested scribblers can easily bring about by falsehood and exaggeration in the absence of the authentic statistics of crops, which the State should feel an interest in collecting through its officers of the revenue; and how much more ruinous is this mischief to the farmer than the crime of *regrating*, *forestalling* and *monopolizing*, to his customer at the stalls of the market house. But we need not only protection for our interests as tillers of the soil; we want more efficient means of advancement in our calling. We feel the necessity of a wider sphere of observation and a more extended practice than can be afforded us on our several farms. We are continually craving for the experience and practice of others to enlighten and instruct us in our own management.

To accomplish these ends, an organization is extending throughout the various counties of the State, denominated "Farmers' Clubs," or "Hole and Corner Clubs." They are designed for particular neighbourhoods com-

prised in limits not transgressing a pleasant morning or evening's ride, so as to secure the regular attendance of members. Our Club is the offspring of the "Hole and Corner Club" of this county—perhaps, the first of the kind in the State; and gives earnest of the growth of this interesting family.

This agency would seem at first to be humble. It is confined to a narrow circle, and that properly, because it gives a similarity of soil and season for the experiments it ordains. But, in truth, these associations are doing a great deal for agriculture. It is the reproach of our calling that we have no settled principles to serve us as the axioms of our science in agriculture. Every thing with us is embarked on a sea of conflicting conjectures and trials; and scarcely will two persons be found of the same opinion on any given question. One *postulate* we boast,—that annual manure is of advantage to crop and soil; but the mode and time of application will vary with each adviser. And so in regard to many other principles that may seem to be admitted, there is such a contrariety of opinion as to the condition of their application, it becomes hazardous to put them in practice. It is one of the chief aims of these clubs to project a series of experiments on all debatable topics, so as to ascertain the truth and thus find out a secure and profitable basis for our individual operations. It is easy to perceive how trials thus made under the supervision and control of intelligent and interested proprietors, will save us from the false deductions and dangerous generalization into which many of our brethren are betrayed. With the majority, perhaps, something,—(no matter how immaterial provided it strikes the imagination, or enlists the superstitious feeling,—) that is found to precede a certain marked result, is at once accredited as its *cause*; and none of that caution, which pervades other sciences, is observed by them in pronouncing on the obscure relations of cause and effect. Hence, our profession is flooded with absurdities; and our belief in the uniformity of nature, shocked by the popular theories of wheat degenerating into chess; the worm of a fence rising or sinking according as it is laid in the *light* or *dark* of the *moon*, and other kindred mistakes springing only from careless and erroneous observations.

Another task assumed by these Clubs is scarcely of less importance, namely: the visitation and critical examination annually had of each member's farm, its stock, its cultivation, its management and crops. Discharged, as this task ever should be, with candor and freedom, it offers valuable suggestions to the owner; gives encouragement to the successful; reforms bad practices—discovers and approves new modes; explodes fallacies, no matter how venerable or universal; and, finally, spares not its rebukes of neglect or mismanagement. Of its

fidelity in this last particular, our club gave a notable instance to one of its members, who had the temerity to convene them at his house on the breaking up of the last unusually severe and long winter, in its unflinching and just animadversions upon the sad condition of the tenants of his barn-lot, stable, sheds, and styes. And it is interesting now to witness how that gentleman, (who shall be nameless,) has profited by the merited castigation; what projects he forms of the use of "Young America," roots, &c., for winter feeding; and, above all, how his overseer has been aroused by the talk, which this official report has provoked of him. Nothing, indeed, can be more salutary than the emulation and reforms which the faithful conduct of this examination, into each other's practises, will be sure to provoke as well between the several members on the one part as their respective overseers on the other. The debates, too, of these clubs upon controverted matter, are of eminent utility. They exercise the mind and sharpen the observation. They finally conduct to stable opinions; and never leave the farmer halting between two opinions like some other poor sinners. These discussions, too, are highly honorary to our craft; they show a clearness in thought, an ingenuity in argument, a command of language, and a prolixity of speech scarcely inferior to any to be found among the *gowned* fraternity.

The social benefits and charms of these gatherings are worth enumerating. They brighten the chains of sympathy, and strengthen the bonds of interest that unite us; they beget companionships, and lead to intimacies that improve intercourse, and sweeten the charities of life; and above all, they encourage that *esprit de corps*, which is more wanting among the tillers of the soil than any other class.

With all these tendencies to good, it must be confessed, there are some temptations and some partial ills. When the stated meeting arrives, one feels such a strong inclination to abandon himself to the pleasures of social converse, and to the spirit of hilarity that prevails, that he feels an instinctive shudder when the hammer of the president strikes for order. Amid the appliances of good cheer and the resources of mirth:

"The quips, and cranks, and wanton wiles,  
The nods, and becks, and wreathed smiles,"

it is difficult to command due respect for the grave visage of business and care.

The goodly repast, too, is apt to leave no appetite to discuss other things; and the spirit of application ceases with the bounteous meal. Yet, it may be well said, that there is time enough for all things provided the proper order is maintained. However fascinating the perfect *abandon* on such an occasion, there is always serious business enough on hand to

dissipate all undue levity, and engross the attention. The punctual attendance of members at an early hour, so as to afford time enough for the ride on the farm, and the dispatch of business, and the calls of jollity, should always be enforced. This cannot be done without penalties, and the example set by this Club, is valuable. A pecuniary forfeit is incurred by want of punctuality; and that can only be redeemed by a written essay. This mulct is so considerable as to compel the pen to its redemption. And it is not a little amusing to see the farmer quit his field for his closet; or the farming lawyer—a monster that we sometimes meet with, of two natures, like the fabled Centaur—pushing aside his briefs or his black letter to indite his lucubrations on agriculture. Perhaps if the curtain could be raised, some such secret would account for the appearance of this brief plea for Farmers' Clubs.

—————  
For the Southern Planter.

### On the Application of Lime.

*Experiment in stripping Corn-stalks of blades.*

Whilst it may be considered presumption in one with as little experience as I have, to discourse on the subject of the above caption, nevertheless I propose to offer some remarks and suggestions on the subject,—the results of my experience and observations, which, if attended with no other benefit, may elicit information from those better qualified to give it.

Lime being considered the basis of improvement for exhausted lands on tidewater, it becomes necessary to ascertain the quantity and application, which will best insure this end. In my region of country, twenty-five and one hundred bushels are the minimum and maximum quantities per acre; the first on the most exhausted, and the last on the more improved land,—whilst in France, ten and twenty bushels are the minimum and maximum quantities, applied on the first or second rotation of crops, and the results, so far as I am informed, are as favourable as those of larger application. My experience is in accordance with the last results, as I have derived more benefit from the application of twenty bushels, than I have from ninety-six.

If this hypothesis be correct, as I believe it to be, the means of improvement are placed in reach of all who cultivate the soil where lime can be obtained.

Now let us test the relative advantages of the greater and lesser applications. First,—the average quantity of the larger application would be sixty-two bushels; and lime having a tendency to descend, this quantity, before it could be well incorporated in the soil, and taken up by the rootlets of the plants cultivated in the rotation of the crop, would have descended to a depth beyond their reach, thereby

causing a loss of at least one half of the outlay on this article; whilst the average of the lesser application, say fifteen bushels, would be incorporated in the soil, and taken up by the cultivated plant before it would have descended a depth beyond its reach.

In illustration of the above theory, we will state the proposition thus: Sixty-two bushels of lime applied to one acre of land, would increase the product one barrel, whilst that quantity applied to four acres would increase it four barrels,—being a gain of three barrels to the smaller application, independent of the loss by the descent of lime on the larger, before its benefits were imparted to the land and crop. Let us recapitulate:

Sixty-two bushels of lime applied to four acres of land, at 10 cts., would be, . . . . .	\$ 6 20
Yield of one barrel of Corn per acre by the application would be four barrels, at \$3 per barrel, . . . . .	12 00
	<hr/>
	\$18 20
Sixty-two bushels of lime applied to one acre of land, at 10 cts., . . . . .	\$6 20
One barrel of Corn produced by the application, . . . . .	3 00
	<hr/>
	\$9 20
Loss by descent of lime before its incorporation with the soil and its being taken up by the plants cultivated, 31 bushels, [conjectural,] at 10 cts., . . . . .	3 10
	<hr/>
	\$6 10
Gain by the lesser application, leaving the land by such application equally benefited, . . . . .	\$12 10

In addition to the above, I will submit the following experiment, made with a view of testing a subject in controversy, in relation to the best mode of saving fodder with the least injury to the Corn. I commenced the experiment on the the 31st day of August, on four rows of Corn immediately adjoining. The Corn on row No. 1. was cut off at the ground and ricked; No. 2., the fodder was stripped to the ear in the usual mode of gathering; No. 3., the fodder left on the stalks; No. 4., the tops cut above the first joint above the ear, leaving the blades on the stalks below the ear. On the 5th of October, twelve ears of each row, of as equal size as could be obtained, were selected and weighed. No. 1. weighed 9 lbs.; No. 2. weighed 9½ lbs.; No. 3. weighed 11½ lbs.; and No. 4. weighed 8½ lbs.

RICHARD ROUZEE.

Essex County, Va.

NOTE.—Taking No. 4. as the lowest, the percentage of gain in the other experiments is as follows:

No. 1.	gain	6 per ct.
No. 2.	“	12 “
No. 3.	“	33½ “

This last is so remarkable a gain that we apprehend an error in our friend's experiment, though there can now be no doubt that the gain is very great, and that this experiment quadrates with others on the same subject. How long will it be before principle prevails over habit, and our farmers stop losing both Corn and time by pulling fodder?—[Ed. So. PLANTER.

For the Southern Planter.

### Improving Land on the Five-field System.

LONGWOOD, King William Co., }  
Oct. 15th, 1857. }

*Mr. Editor.*—Being a rainy day, which gives me a few leisure hours, and being a devotee to agriculture, I have concluded to write some lines for your paper. If you think they can be of any use, or can in any way do my brother farmers any good, publish them; if not, cast them away.

I have been farming about five years. I came into possession of an exhausted piece of land, which had been rented out for fifteen or twenty years. Everything that had been made on it,—wheat, corn, oats, straw, shucks, &c., had in all that time been carried off; and as that was done, fences were left down, and everybody's stock came in and grazed to the quick, until the following spring,—and then, of course, the same process was begun again; and so it went on until I took possession. This is a brief history of the farm as it was when I took it. As soon as possible, I adopted the “five-field system.” I began on the first field by applying thirty-five bushels lime per acre, and then putting the land immediately in corn. The following spring I sowed peas on corn land, (not following the practice of my neighbours, of putting corn land in wheat.) In the fall I fallowed the peas, and sowed wheat. The following spring I sowed clover; and the next fall twelve months the clover fallow was sowed in wheat.

The above represents my system and my rotation of crops; and I am clearly of the opinion, from all I can learn from books and experience, that land will improve faster under the above treatment than any other; and the farmer will, of course, be better remunerated. Some will say, what will you do about grazing? Well, a man must put off that thing until he gets his land in condition to bring grasses; and then have a small number of stock—but good stock. I would advise a standing pasture, and then I believe the system would be near perfection.



Mr. Editor, I am satisfied there are more blunders committed by farmers than by any other class of people in the world. Farmers generally work in the dark; they apply a manure, and they don't know whether or not the land needs what they are applying. We will take, for instance, a grain of corn, and, according to Prof. Norton, (good authority,) its constituents are 49 per cent. of phosphoric acid, 17 per cent. of magnesia, and 23 per cent. of potash, lime, soda, &c., making up the 100. Wheat has 47 per cent. of phosphoric acid, 15 per cent. of magnesia, 29 per cent. of potash and lime, 29 per cent. of silica, sulphuric acid, &c., making up the 100.

Now, in improving land, ought we not to have an eye to this? If we want to make a crop of wheat or corn, should we not have regard to what kind of manure we use? We see from the above analysis, that it requires a very large per cent. of phosphoric acid, magnesia, and potash to make a crop of wheat, therefore we should endeavour to apply these principles to the soil in some shape or other.

Now, let us see what is Prof. Norton's analysis of the pea. Nearly 3 per cent. of lime, nearly 8 per cent. of magnesia, 38.34 per cent. of phosphoric acid, 27 per cent. of potash, and soda 17 per cent.; silica, iron, &c., making up the 100.

How can some of my countymen oppose the pea-fallow as an improver, when by it you are giving the soil the very thing it wants to make a crop?

My brother this year raised twenty one and a half bushels of wheat to one seeded on pea-fallow; and I think I raised quite as much, but did not measure mine. I must conclude, wishing you and my brother farmers success.

C. S. GARRETT.

### Close Breeding.

There has long been a controversy among men on the subject of close breeding, some contending that it is very injurious, others that it is not seriously objectionable. By close breeding is meant, breeding by animals of near affinity of blood. It is contended by the objectors to close breeding, that fowls, sheep, hogs, and cattle that are bred for a long series of years in the same flocks, without the addition of any alien blood from other flocks or breeds, surely degenerate and become less useful. And this is given to account for the unserviceable fowls, the gaunt hogs, the weakly sheep and the scrawny cattle that are so frequently found on old farms, among old-style farmers. Those who see no objections to close breeding cite many examples of it to sustain their views, such as Flying Childers, a horse of unrivalled beauty and speed, known to have been closely bred; the Darby Game fowl, bred at Knowsley Park for several hundred

years without change from the blood of the original stock; the pair of wild geese brought by Col. Jaques, of Somerville, Miss., from Canada, in 1818, whose stock at this time, bred in a direct line from the original pair without the addition of any strain of new blood, is not the least degenerated. But notwithstanding these isolated cases of the seeming safety of close breeding, we must give our testimony strongly against it. We cannot but feel that close breeding among human creatures or animals is generally attended with bad effects. It is true, cousins may sometimes marry with safety to their offspring, but it is very common that bad results are known to follow. We have seen nor read of no great man or woman the offspring of cousins. And we believe that the children of cousins are generally inferior to their parents. The same physiological laws are in action in both human and animal creatures. It is a law we believe of human physiology that similarity of temperament is unfavourable to the offspring, whilst dissimilarity of temperament is favourable. Now, it is a general rule that similarity of temperament obtains in families. This will be especially the case if families should breed in-and-in for several generations. Even in this view of the subject it is best often to seek favourable crosses in breeding animals.

It is well known that the barn-yard fowls on many farms are very unserviceable. It is known, too, that this is not for the want of good fair, shelter, &c. It is known, also, that in many instances these fowls have been bred-in for many years without a single fowl from any other flock being added. The inference is very plausible that close breeding has affected them unfavourably.

We know a woman whose hens have for several years been very serviceable. She is the wife of an intelligent and successful farmer, and she laughs at the mania for foreign fowls. She thinks she can show as large eggs and as many from a hen, as much profit with as little expenditure as anybody. Her plan has been for many years to breed from her best hens, to set only the largest eggs. If she sees a fowl in any neighbour's yard that is very fine, she buys it or swaps for it; if she sees a very large egg elsewhere, she secures it if possible; thus constantly bringing new strains of promising blood. Her fowls are large, healthy, and thrifty. Being well cared for every way, they are very productive and serviceable.

We believe this is the best plan to secure useful fowls. The same general principles will apply to raising all kinds of stock.—*Valley Farmer.*

EARTH is eaten as bread in several parts of the world.

Near Moscow, a hill furnishes earth of this description, which will ferment when mixed with flour.

### Arabian Horses.

In Mr. William C. Prime's interesting works, recently published by the Messrs. Harpers, "Boat Life in Egypt," and "Tent Life in the Holy Land," frequent mention is made of the Arab horses, renowned all over the world for their beauty, docility, fleetness, power, endurance, and value to their masters, who live and roam upon the great deserts of the East. Mr. Prime says the Arabs prefer the mare to the horse, on account of her superior power of endurance. They trace their genealogy by their mother, and not, as we do, by the sire. The favorite tradition is that they are descended from the five mares of the Prophet Mahommed, and that these came originally from one common stock, to wit, the Kohailah. The finest breeds of horse, are to be found among the Annazee and Shaumar tribes, east and southeast of the Damascus, extending quite to the Euphrates.

The value of an Arab mare is, literally, not to be estimated in gold, since no amount of money will effect the purchase of one of the pure blood. This fact arises from causes that are evident to one who knows the Bedouins. In the first place, money is of no use to an Arab. He needs very little for his ordinary purposes, and more would be an incumbrance—to be buried, given away, or lost. His mare is his life; with her he is free to travel on the desert, to fight or fly, to rob his legitimate enemies, and protect his friends. If he should exchange his mare for gold, he would be a fair subject for plunder, without the means of defence or escape, and having no home, would be at a loss to bury his treasure where it would be of practical use to him.

The colour of the Arab horse varies, but is most frequently white, or light chestnut. They are not large, rarely above fourteen hands high, and while at rest, none but an experienced horseman would observe their points. But when in full motion they are glorious animals. "A high bred mare should hide her rider between her head and tail," saith the Koran, for the Koran is not silent on the subject of horses, and many of these animals nearly perform this duty.

Mr. Prime says, it is only by accident that an Arab horse of pure blood is obtained, so that out of hundreds of horses imported into England and America as Arabian, it is not probable that until within the last year, one horse of pure blood was ever brought into either country. He mentions that he met a gentleman in various parts of Syria, who was from New Orleans, whose object in visiting the East was to obtain these animals. [This gentleman was probably A. K. Richards, Esq., who has imported several Arabian horses.—Eds. Bos. Cult.] He had, by a fortunate occurrence, obtained one mare, a noble animal; and when last heard from, was about to go

down among the Annazee to look for others. The inferior horses, not of high blood, are always for sale, and bring prices, in the desert, varying from \$150 to \$750. There is but little Arab blood in any horses out of the Arabian country.

The attachment of the Bedouin to his mare, Mr. Prime observes, is not that affection which has been so frequently the subject of poetry and prose. On the contrary, there is no sort of affection existing on the side of the man, and the beast receives only just as much care and attention as will ensure her against illness and death. Seldom covered and never housed, it is often a subject of the utmost astonishment that the Arab horses do not perish from exposure. But for their incredible powers of endurance, they would undoubtedly do so. After a long day's journey, or a sharp ride of hours over precipitous paths, without food or water on the way or halt, the horse is left standing in the air, the saddle is not removed, being a substitute for clothing, as well as a preservative against sharp stones, if she rolls, and while the rider lies under the shelter of his black tent, or on the ground, wrapped in his boornose, the steed shivers in the desert starlight; but she is no less ready for the road in the morning.—*Transcript.*

### Big Head

May be cured with very little trouble. A horse with the big head becomes stiff all over, and the large muscles leading from the eye to the nostril becomes perfectly rigid. Anoint those muscles well with the oil of Cedar, and sear it in with a hot iron three or four times, with an intermission of six or seven days, but rub the oil on every day. Take a piece of poke root, about as large as a goose egg, put it in six quarts of water, and boil down to three quarts; drench the horse with one pint of it every other day as long as it lasts; fill the drenching bottle with a pint of fresh water after the poke tea has been put in it.

This prescription has cured horses when they were so very stiff that they could scarcely step over a door sill six inches high.—*Valley Farmer.*

### Vitality of Garden Seeds.

Parsnip, Rhubarb, and other light, scale-like seeds, will scarcely retain their vitality for more than one year.

Artichoke, Asparagus, Egg Plant, Endive, Corn Salad, Lettuce, Mustard, Parsley, Skirrett, and Spinage seeds, will keep from three to four years.

Broccoli, Cauliflower, Cabbage, Celery, Kale, Radish, Kohl Rabi, Rape, and Turnip seed, will keep four and five years.

Beet, Cucumber, Gourd, Melon, Pumpkin, Squash, Burnet, Chervil, and Sorrel, will keep five and six years without their vitality being much impaired.

From the Richmond "South."

### Caution Required in Selecting Seeds of the Chinese Sugar Millet.

Within the last few days I learned, from a more careful observer than myself, that there are plants growing among the Chinese Sugar Cane, or Millet, which have no saccharine juice, and yet are so similar that they would not be suspected to be different, without tasting the sap. All the crops observed to be thus intermixed are of the second year's growth, from seed supplied from the Patent Office. It may be that this intermixture, (or degeneracy?) is not general. But every cultivator will do well to examine his plants saved for seed, and to be sure that all such non-saccharine plants are excluded. The spurious may readily be known by tasting the sap of the green stalk. Even without this surest test, one who has well compared the two plants may distinguish them by the eye. The sweet or true plant has its seeds covered by a close-fitting sheath or envelope, which, when ripe, is perfectly black and glossy on the outside. Some of these sheaths, (but not generally,) have a fine and soft hair, less than a quarter of an inch long, extending from each. The other plants have most of the seed-covers of a brownish black color, not glossy, except of a few of the seeds, and with a hair about half an inch long, standing out from every seed-cover. The pith is white, comparatively sapless, and without sweetness. These plants are generally the tallest and strongest, and stand erect in many cases after all the surrounding true canes have been prostrated by wind. The heads of the worthless plant are usually larger, fuller, and more beautiful, and hang slightly and gracefully drooping to one side. Specimens of both plants have been placed in the office of the State Agricultural Society.

There is a rule for selecting seeds of the true cane, whether African or Chinese, which it may be well to observe, or at least to test, but which I report upon information, without any personal or experimental knowledge of the facts. From Mr. Leonard Wray, the introducer of the Natal Sugar Millet, (or "im-pee.") into France and this country, I lately heard that the practice of the Kaffirs, (directed by long experience,) is to cut off the heads designed for seed when they are barely ripe enough for the seeds to germinate. The proper time is when the seed is still partly in the milky state, and when the solid and harder part of each seed may be mashed between the finger and thumb. The theory is, that unripe seeds produce a growth that goes most to form sugar, and (as I infer,) the most perfect or fully ripe seeds are more productive of seeds than sugar. Late as it now is, this notice may still enable many persons to test the opinion, by saving and, next year, trying their latest

seeds, which otherwise would be rejected as unripe and of no value.

If this African practice is correct, and the opinion on which it is founded, the spurious Chinese Sugar Millet may be the result of successive plantings of well-ripened seeds. Either this plant is a new production, (degenerated as to sugar, but improved as to grain,) owing to some unforeseen cause, or otherwise there must have been some few seeds of this, a different *sorghum*, not distinguishable among these of the true seeds of the Sugar Millet distributed from the Patent Office.

EDMUND RUFFIN.

September 28th, 1857.

For the Southern Planter.

### Failure of the Chinese and African Sugar Millet (*Sorghum Saccharatum*) to Produce Sugar.

*Mr. Editor*.—With the permission of Ex-Governor Hammond, of South Carolina, I send to you, for publication, the following extracts from two letters recently received from him. From these, in addition to all other known and recent testimony, I deem that there can remain no longer any doubt of the impossibility of obtaining *sugar*, to any useful end, from the juice of either the Chinese or the African Sugar Millet. Gov. Hammond had grown these on a large scale—on more than 100 acres—embracing 15 or more of the African varieties. Every proper care was taken for the culture—and a fine crop was raised. No proper expense was spared for the machinery, &c., for grinding the cane and boiling the juice. The results are stated in his letters.

But though (in contradiction to former general expectation, and to much prior and particular evidence,) it seems that sugar cannot be produced from these plants, that conclusion, in my opinion, detracts but little from their value for this region. There is no doubt that excellent syrup may be made, even by very rude means and methods—and, by proper means, probably in profitable quantity, for general home consumption. This is enough for us. Also, the feeding value of the green plants is of much importance. Even when I formerly gave credence to the many assertions that sugar could be made, I did not then suppose that the practical operation could be profitable here, or as cheap as to buy the sugar made from sugar cane in hot climates. I hope that numerous experiments and fair trial will be made of the Sugar Millet, and of all its varieties, so that the true general value, and the most productive kinds may be known.

EDMUND RUFFIN.

REDCLIFFE, S. C., Oct. 15th, 1857.

*My Dear Sir:*

\* \* \* \* \* I got my new wheel made, and started my mill again on the 2nd October.

But Mr. Wray, who was absent and unwell, did not commence his experiments until the 6th October. He did not try my battery, but used his little apparatus, with steam evaporation. He selected his canes, and had what juice he wanted, and made I don't know how many boilings during that and the next four days. The juice was good—standing several times at 10° *Beaumé*. But neither by his patented nor any other process could he make sugar from his Imphee. He has brought up some syrup which he thinks will grain yet. I don't think it will, or that sugar can be made from either the Imphec or the Chinese cane. I dare say both of them have a small portion of cane sugar in them, but I fear not enough to be worth looking after. If the saccharine matter indicated by 10° *Beaumé* were cane sugar, this plant would be far superior to the sugar cane. But I give it up for sugar purposes. The Imphee, as you saw, is a larger growth than the Chinese cane, but from all that I have seen and heard, I would [not?] like to say that any variety of it is superior to the Chinese.

With regard to the seed, I am now fully satisfied that all the varieties of the Millet readily *hybridize*; and I think also that the Kaffirs were correct in telling Mr. Wray that if the *ripe* seed were long planted the cane would lose all its saccharine qualities, and take rank with Dourah corn. I found so large a proportion of worthless cane—with the largest stalks and finest heads generally—that I cannot have any part in *selling* the seed. I have gathered the seed of the few assorted canes that seemed purest, and placed them at Mr. Wray's disposal. The remainder I am feeding to my stock. I would not be willing to guarantee that a single seed will be pure—but if Mr. Wray will make, as he says he will, a careful selection, head by head, they will probably be as pure as most of the Chinese. It so happens that these assorted seed are perhaps his best varieties. They are the Necazana, Booiana, Koombana, Boomwana, and Enyama. These and the E-engha, and Slagoova, are so different in appearance from Dourah corn, that Mr. Wray, in assorting his seed last spring at my request, was more successful in selecting them than the others—but they were all near enough to the Dourah, or degenerate Imphee, for some hybridizing to take place, and therefore I *guarantee* none.

I shall plant *all* the varieties next year, (by no means omitting Chinese,) but not so largely as this year. I shall only aim to make what syrup I want for my own use, and to test more carefully the forage value of the plant. I shall plant upland that is good for twenty bushels of corn, in five feet drills, and expect 100 to 150 gallons of syrup per acre. Unless alcohol may be made economically out of this plant, or it proves better for forage than I now think, it will produce nothing *for sale*—and

syrup can be made from it for use only when there is no other pressing plantation work—or at some distance from the great highways of commerce. \* \* \* \* \*

J. H. HAMMOND.

“Oct. 23, 1857.”

\* \* \* \* \* “I find the cane has greatly deteriorated in the last ten days, in all respects, from over-ripeness. *Beaumé's* saccharometer stands at 0° both in the cane juice and water. Yet the cane juice makes good syrup, at the rate of 1 for 8 of juice. In the juice of cane cut and shocked a month ago, *Beaumé's* saccharometer disappeared entirely. Yet this made fair syrup. My conclusion is, that however valuable *Beaumé's* saccharometer may be as a test for sugar cane juice, it is utterly worthless as a test for any variety of this Millet Sugar Cane. The Imphee juice, at 10° *Beaumé*, and at half an inch below 0 *Beaumé*, is almost equally good as far as syrup is concerned; and also as to sugar, as neither degree produces that. \* \* \*

“J. H. HAMMOND:”

### Remedy for Mange in Hogs.

To the Editor of the Southern Planter:

In answer to your inquiry, whether arsenic is a remedy for mange in swine? I have never tried it; but am perfectly satisfied that mange in swine is always produced by local and external causes, such as wet and rotten beds, hogs sleeping in hot stable manure, &c., &c. Changing the range of the hogs, and removing the local causes, is usually sufficient, with some flour of sulphur mixed in corn meal, or salt given occasionally in dry weather, in March or April; but when it does not readily yield or disappear with this treatment an external application of two parts of tar to one of fish oil, and a large table-spoonful of the flour of sulphur, well mixed and well rubbed on with a corn cob. One application will always be sufficient. This application will destroy all vermin on the hogs, but where it is applied for that alone, a less quantity of tar and more fish oil is best.

If you think this worth an insertion, it is at your service. JNO. B. COLES.

Nelson Co., October 22nd, 1857.

From the Germantown Telegraph.

### Feeding Stock--Cutting Fodder.

Mr. Editor,—It has ever been a fault in the husbandry of this country, that we have performed most of its details more by guess than by rules deducted from experience; and especially has this been the case in relation to feeding our domestic animals. If you ask yonder aged farmer how much hay his cows consume during the winter, per head, he will probably answer that, unless the season is unusually protracted and severe, he finds one and a half tons to be amply sufficient, without either grain or roots, and fed without cutting; but his neigh-

por will assure you that he never has been able to carry a cow through, in good condition, with less than three tons—making a difference of one-half. Why this wide discrepancy? You question another as to the quantity of grain he allows per acre, in sowing,—say, for instance, oats. He will tell you that on good soil, well prepared, and which was the year previous in Indian corn or potatoes, measured in the hill or row, he usually allows one and a half bushels, and that, he thinks, amply sufficient for any soil; but his neighbor, over the fence, or across, allows *three*. Some plant four, some five, some six quarts of Indian corn to the acre; and in potato culture, the usage varies still more widely. Each is certain that his method is the right one, and will not be satisfied that it is not when he sees his neighbors harvesting double the quantity of produce in consequence of pursuing a course diametrically opposite to his own. There must be something wrong somewhere; ALL cannot be right, if it were, all would experience the same results.

The Wool Grower, not long since, published a statement in regard to cutting fodder for cows, in which it is asserted that three cows were kept *one hundred and sixty days* on a daily allowance for each cow of  $8\frac{1}{2}$  lbs. of hay, and 9 quarts of shorts, and that each continued to give twelve quarts of milk per day for the whole period, and adds that "they came out in the spring, good beef." Now many allow twice the amount of food here indicated, and some even more than that. Why, I repeat, do we encounter such wide discrepancies—such emphatic contradictions in practice and its results? If we allow—as we no doubt should—that there is often a very great difference in the nutritive value of the food, still it does not meet the exigency of the case, by any means, for a difference of two-thirds would often be required to do this, and such a difference can never in reality exist. In the case of oats, and other field products, much may, and doubtless does, depend upon circumstances; yet not enough to render so wide a diversity of practice necessary. The fact is we are, as we ever have been, *guessing our way along*—a very poor method, indeed, and one that can scarcely be expected to produce, in the aggregate, however successful it may occasionally prove, otherwise than the most disastrous results. Exact knowledge is no less necessary on the farm than on the ocean, in the counting room or the workshop, if we would reap the largest profits from our labors. And this knowledge, we trust, is already beginning to dawn upon us, and if we are only true to ourselves, "the good time coming," of which we hear so much, cannot be far away. We must endeavor as far as in us lies, to "magnify our calling," and to keep our eyes open to the many new things which are presented for our contemplation.

AGRICOLA.

Lower Dublin, Nov. 15, 1856.

From the British Farmers' Magazine.

### Top-Dressings—Their Application and Effect.

"Nitrate of soda is the only artificial manure which can safely be used as a top dressing at any time; the nitrogen, being in the form of nitric acid, is not volatile, as it is when in the form of ammonia. When guano or sulphate of ammonia is used for a top dressing, it should be sifted very fine, and sown before or during rain."

So Mr. Lawes advises us in "Rendle's Directory," and, undoubtedly, it is sound wisdom to follow his teaching in such a matter. But observe the theory upon which the recommendation, or rather, instruction is founded: It is, that the nitrogen, whether in the acid or alkaline combination, benefits plants through the soil, and that the portion of ammonia which exhales into the air around the stems and leaves of vegetation is wasted. By changing our theory, we get a very different rule for practice. Thus, Prof. Buckman, in his "Essay on the Roots of the Wheat-plant," inclines to the use of such top dressings for wheat as are rich in ammonia, and of such a consistency, or in such a condition, as to be capable of giving off this gas equally and abundantly. And the theory upon which he builds (though cautiously and with due diffidence) is, that the stem and flag of the plant respire ammonia. Hence, one reason why "the surrounding the wheat-plant with ammoniacal manures at the season of its most vigorous growth may be productive of benefit."

"While we look over a wheat-field," he says, "on a fine sunny day as summer advances, and see the dazzling dancing in the atmosphere a few feet over the plants, which is caused by the evaporation of water through the cellular system of the leaves, we may know that the crop is pumping up its food from the soil; but as this is just the time for liberating the ammonia also from the soil, there is, I think, reason to believe that the atmosphere charged with carbonic acid and ammonia is, at this very time, being eagerly respired.

Wheat in its *growing history* is completed in a few weeks, although the production of strong plants for growth occupies, in the winter varieties, many months: and it is just as the new growth commences that ammoniacal manures are

so beneficial, as the nitrogen therefrom has to be eliminated in a short time; and as the leaves are small and upright, if we suppose ammonia to be respired by them, they will require a quicker and more constant and greater discharge of this gas, commencing, too, at a certain time, than is the case with a plant with large leaves which grow without any serious interruption from their birth, and whose under-surface is the only inhaling one, and which is so arranged as to insure the due but more gradual and more certain performance of this office without loss."

Let us now turn to other authorities on the subject. Mr. Haxton, who gives the following directions for top-dressing wheat: "Guano is more liable to be affected in its results by the weather at the time of sowing, than nitrate of soda; and, indeed, its success depends, in a great measure, on being well washed into the soil when applied as a top dressing. Nitrate of soda, on the other hand, is not volatile, and is so easily dissolved that the dew melts it sufficiently for the plants to suck it in both by leaf and root. By mixing the two together, the result, according to the chemical law of catalysis will, in all likelihood, be that the guano is rendered more soluble while the solubility of the nitrate is in some measure lessened; and even laying aside the operation of the law, the mere affinity of the nitrate for moisture would, of itself, tend also to dissolve any minute particles of the guano in contact with it, and both these pass into the circulation of the plant, even, although little or no rain should fall." Guano is adapted for early dressing, and nitrate of soda for later dressing in spring; the former being less soluble, less active to begin with than the latter, and lasting longer in its effect. If it is found necessary to top dress wheat late in spring, the manure should be as soluble as possible, and the nitrate surpasses all artificials in this property.

Mr Hannam tells us (in the same Cyclopædia,) that in all manures which are designed for application in autumn and winter, the ammonia or nitrogen should be supplied in a form that will, as far as possible, prevent it operating too quickly; "for example, it would be preferable to supply the nitrogen in union with other organic matter, as in rape-dust, bones, woolen rags partially decomposed, blood, gu-

ano mixed with charcoal and gypsum, & rather than in the shape of salts of ammonia, which are so speedily soluble." winter dressings of artificial manure should be mixed in the soil. All mixtures which the ammonia exists in a saline form should be applied as a spring top dressing upon the crop, if possible, in wet weather. All mixtures containing organic matter rich in ammonia, as rape-dust or guano applied with spring crops, should be hrowed in immediately; and if applied a top dressing, should be used only in wet weather. Spring top dressings, containing organic matter, should be applied earlier than those purely saline.

These rules are based upon a consideration of the degrees of solubility and lasting or evanescent action of different manures, and also of the requirements of various crops at different stages of their growth: the inference for practice being the same as that arising from a consideration of the volatility of the manures, when accepting the theory that the ammonia nitrogen feeds plants by their roots.

Yet the practice of applying highly volatile ammoniacal manure upon the surface of land upon which a crop is growing which may follow as a deduction from the theory that plants inhale ammonia by the leaf and green stem is not without its share of reasonableness. If the vertical stalk and branching flags of wheat can arrest this gaseous nutriment from the air, it may be worth while to load the atmosphere immediately around them with this useful element, by placing upon the soil, and beneath the overshadowing mass of leafy substances which will gradually dissipate into the air. As an illustration, we may take Prof. Buckman's allusion to one of the uses of farm-yard-manure to the turnip crop: "It is buried in the soil and gradually decomposes, at first slowly, but faster the longer it is exposed to atmospheric and chemical actions, giving its inorganic matters in solution through the roots, while ammonia is given off into the atmosphere indeed so quickly in some of the warm close days of the early part of September that every farmer knows when this valuable crop is growing fast by the peculiar odour that he is aware of, in passing a turnip-field."

Of course, as a general rule, we would advise the farmer to bury his manure in

the safe-keeping of his soil, or if applied as a top dressing, choose cool weather, to obviate waste by evaporation, and showers wash in the soluble riches; but we are no means sure that these are the only methods that should be pursued. For some purposes, and in particular stages of the growth of some crops, it may be quite reasonable and profitable to *manure the atmosphere* as well as the soil; that is, to use rather volatile ammoniacal manure underneath the foliage of a crop, as well as mix it into the land. Considerable loss here would evidently be; but when artificial manures are ploughed or harrowed, there is also a large proportion carried out of reach of the roots of the plants, and locked up in a form useless for their requirements. And it should be borne in mind that the kind of top dressing referred to is not at all of the prodigal and absurd character of the scheme by which the farmer seeks to generate immense quantities of carbonic acid gas and ammonia at his farmstead, dissipating them into the atmosphere, so that the winds highly charged with these invigorating and fertilizing elements might amazingly force on the vegetation of his farm!

#### Bones: and how to Dissolve them.

We have frequently referred to the value of *unburned bones* as a fertilizer. That one dust is superior to any and every other manure purchased from outside of the farm, we are so strongly convinced by experience and observation, as well as by theory, that we buy no other fertilizer, and probably shall not, so long as this article can be obtained at anything like a reasonable price. The chief reason for our not writing more on this topic is, that the supply is so limited that it hardly seems worth while to wake up an interest in the matter, and create a demand for what cannot be supplied.

The present year we had about one-fourth of an acre planted with a great variety of garden stuff, using bone sawings, (obtained from a bone comb and knife-handle manufactory,) in the hill or drill *with every variety of seed*. This was put on thus the rate of about five barrels to the acre. We held in reserve the sink-slop vault, described on page 157, (July No.,) expecting to draw largely from it. But the damp season has left no demand for watering,

and as for additional fertilizing material, why everything has grown so rank and fruitful that a pruning knife or hoe has been constantly needed to thin out or lop off the superabundance. We should hardly be believed, did we write down what beets, turnips, tomatoes, corn, asparagus, kohlrabi, cauliflower, strawberry plants, rhubarb, &c., &c., &c., we have raised.— We attribute these chiefly to the bone dust, so finely pulverized that it was all ready at once to nourish everything it came in contact with. An assistant at our elbow says, "that two to four feet trenching must come in for a share of the credit."— Well, allow for that, and the bone dust still did the thing. Please turn to the articles on manure, in the first numbers of this volume, and look over the reasons there given *why* bones are so valuable to plants.

We said bones are scarce, and so they are, comparatively, yet a vast amount could be gathered in the country were there a general, thorough "bone-hunt" instituted upon every farm. Give the boys ten cents a bushel for all they will collect for you, and you will soon find a cart load. There are plenty of vagabond boys in most neighborhoods who might be engaged in such a job, with profit to the community as well as to themselves and friends.

But the great difficulty is in *using bones*. They should not be burned, for that destroys at least seven-eighths of their real value. They should not be dissolved in ashes, for that is almost as bad as burning. They are best when ground to *powder*—not merely crushed into small pieces. In this form (powder) they can be put directly into the hill, or drill, with seed, or around and in contact with growing plants, without the least danger of injuring them.— They furnish most excellent nutriment and stimulant to all sorts of growing crops and vegetables, no matter what the kind or variety.

The greatest difficulty lies in getting them ground, since bone-mills are scarce, and few of those in operation grind the bones *finely* enough for immediate benefit. There are few farmers in the older States who could not afford to haul bones 20 or 30 miles to have them ground, but even this is impracticable in most cases. We do not know of twenty bone-mills in the country. Some get bones pulverized in

a mill used for grinding tanner's bark.— One of these is better than no mill, but does not grind finely enough.

#### DISSOLVING BONES IN ACID.

A very good fertilizer may be prepared by dissolving bones in sulphuric acid, commonly called "oil of vitriol." It is a cheap liquid, nearly twice as heavy as water, and costing, by wholesale, at the manufacturers, about two cents per pound for a good article. At a distance the price is higher, proportioned to the expense of transportation. It is put up in large glass bottles, called *carboys*, each holding from 120 to 160 pounds. The carboys are covered with boxes or basket work to protect them, and cost from \$1 to \$1.50. Sulphuric acid is a very caustic burning fluid, which will destroy the flesh or clothing wherever a drop touches. On this account great care is necessary in handling it. We knew of one severe accident from setting down the carboy too suddenly after pouring out—a portion of the liquid flew up into the operator's face. There need be no difficulty with proper care. We have used very many tons of it for sundry purposes, and have never suffered in the least. If by chance any should fly upon the skin or clothing, an immediate application of water should be made. Ammonia ("hartshorn") applied afterwards, will generally restore colors changed by it. Old garments should be worn in operating with it.

To dissolve bones in sulphuric acid, choose any tight barrel or cask,—an old meat barrel will do, wooden hoops are best—and put into it, by measure, two to three times as much water as you have acid to be used. Into the water in the barrel pour the acid slowly. If all be put in too quickly a great heat will be the result. The bones, broken or unbroken, can now be packed into this liquid until they rise some distance above it. Cover the barrel closely with a board, or wooden cover.—The contents should be stirred with a stick, and the bones pushed down from time to time. As they gradually disappear, more bones may be added, so as to keep the liquid filled with them. In the course of four to eight weeks the acid will cease to act. If the dissolving is required to be done more speedily, the bones should be broken into small pieces with a hammer, before adding

them to the acid. Some persons have tried to dissolve bones, and become discouraged because the operation was not completed in a day. For large whole bones two months is often required for the complete solution, and it is better not to try to dissolve the whole. Keep the liquid filled with them, and the portions undissolved can be used in the next batch.

To use the liquid, pour it off from the remaining bones and mix it with a large quantity of dried muck, or dry swamp mud pulverized. Almost any kind of earth except sand, will answer to dry the liquid with, and sand might be used. The most dark colored vegetable matter it contains the better. A cart load of earth to a bushel of bones, dissolved, will be better than a smaller quantity, though one-fourth of this amount may be used. Mix the mass thoroughly together and work it fine with a shovel, hoe and rake. This may be done on a floor, or on a hard ground surface. When finished, pack away into barrels or boxes to be used weeks or months afterwards.

*American Agriculturist.*

#### Cattle Feeding in the Western States.

Our Eastern beef markets are now so dependent on their main supplies from the States west of New York and the Alleghenies, and for all future time must so remain, that it becomes a grave question for the Cattle feeders of those States, to inquire into the fact, whether they cannot produce better beef, and at cheaper rates than they now do, and consequently at a greater profit than the present loose method of feeding will admit. An examination into this matter within the last few years convinces me that very little of *certainty* is known, among many of the Western Cattle feeders, as to the *comparative* profit or loss in their business. In my visit to Ohio and other Western States, I have had frequent conversations with sundry individuals who follow this important branch of Agriculture as to the details of their operations, and the cost of producing flesh on their beef Cattle.

In order to get at the question, I will place it thus:—A feeder buys a drove of steers at the age of three years past—as that is the usual age of *good* steers, *grade* Shorthorns, or Devons—bought by them



for this purpose. I do not take into my calculation 'scrubs,' or 'Common Cattle,' as they are universally admitted to be beyond the rule of *ages* with the others, and must grow to four, five, or six years old, before they can be profitably fed for market, and give beef of but inferior quality, after all. This drove of steers is purchased at any time during the summer, say previous to the first of October, in good grass condition, and ready for corn feeding by that time. They are then put into the 'feed lots,' and fed until fit for market, or until the price of beef warrants their sale, which may, according to their condition when put up, be from December, until the next April, or May. The usual manner of corn feeding, is so well understood at the West—viz: corn in the stalk and husk, out of doors, and without shelter—that further remark on that head need not be made.

In reply to any questions made indiscriminately to Ohioans, Kentuckians, Indianians and Illinoisans—for the great feeders are in those States chiefly—and to the most intelligent of them, their answers have severally varied for four months feeding, say from October to February, from fifty, to sixty, seventy five, or eighty bushels of corn per head, reduced to *shelled* measure. Others have answered, that it takes *about an acre* of corn to feed a bullock for market, with out stating what 'one acre' of corn is, but calling it fifty to seventy-five bushels, on the 'bottom,' or other of their best lands.

Now, this is the report of intelligent men, who understand their business, and have got rich by it and are supposed to know what they are about. And how vague it is!—what *certainty* is there about all this supposition, or 'reckoning,' or 'guessing,' if they were Yankees. But if like the 'Yankee,' or the 'Yorker,' it costs him thirty, to fifty cents a bushel, to *grow* his corn, would not the Western feeder *know* how many bushels of corn, with plenty of 'good English hay,' or corn fodder, it takes to feed *his* bullock, and of course whether he can make, or lose by the business? Our *Northern* feeders never feed whole grain, for they cannot *afford* it.

A *part* of the Cattle business of the West has undergone an almost entire revolution within the last five years, through the transportation of their stock to market

on the rail roads. And here rail roads have produced the same revolution in the value of their corn crop, by the facilities of getting to market, and increased prices they give them, but as yet, hardly so well appreciated by the farmers, as in the prices they get for their Cattle.

In many places where corn, a few years ago, was worth ten cents a bushel, it is now worth thirty cents, because a rail road penetrates their vicinity, and so in proportion, more or less, as they are near, or distant. These increased prices are every year growing more general, because rail roads are penetrating, and will continue to penetrate the country wherever people live and make crops to carry away. It therefore becomes the Cattle feeder to begin to count the cost of his feed, and consequently to ascertain whether he cannot economize in its expense, so as to maintain his business at an equal profit in the face of such increased cost, as he has heretofore done, for corn, with the facilities for its production, will probably, for *our* time, at least, be the great beef making staple of the West. A consideration of this, will be the subject of another communication.

Ohio Farmer.

### Principles of Agriculture.

A paper was recently read before the Farmers' Club of New York, by Dr. R. L. Waterbury, which seems to have conflicted with the views of the savans of that illustrious body, consisting of Messrs. Mapes, Waring, *et id omne genus*, who undertook to answer it. On reading the report of their remarks, Dr. W. found it necessary to disclaim the views attributed to him, and in doing so gives the purport of the paper read by him as follows:—

That without the use of any foreign fertilizer, produce enough may be sold off from a farm in most portions of the Union to pay the expense of conducting it; and yet, by judicious management, the soil may be annually improving in condition;

That this can be effected easiest in those portions of the Union where the value of land is the least, and where, consequently, the farms are largest, and the longest rotations of crops can be profitably resorted to;

That no system of farming is deserving of our attention that does not recognize necessity of farm exports;

That a State may, to some extent, export agricultural products, without diminishing in capability to produce them;

That an inspection of the census returns of the United States and of the State of New York, shows that the amount of crops of this State has increased for the last ten years much faster than the area of improved lands in the State, and that consequently the lands cannot be "running out ;"

That the processes of Nature, to which we owe the present alluvia condition of the surface of the earth, are still at work, and that land left entirely to itself will, by the action of water and vegetation, improve in fertility ;

That the process of tillage alone may be made to accelerate this improvement, and help to provide for the necessary waste of marketing ;

That rain penetrates the porous parts of the earth's surface, and percolates through them until it comes impervious strata, and that it runs along this impervious strata until it finds egress as springs, and that spring water is impregnated, more or less, with saline substances ;

That the evaporation which is continually going on of the water from the surface of the earth, leaves the saline matter in the surface, as but a small part of the water that falls as rain ever reaches the sea ;

That the mineral springs of Saratoga and other localities, are exaggerated illustrations of this process, and the more fertile conditions of valleys is to be in part referred to the same cause ;

That, in the present thinly populated condition of our Continent, the true purpose of America agriculture at this time is to wisely direct these natural forces, rather than apply pinches of guano and tea-spoonfuls of super-phosphates to individual plants, although such applications may pay on some farms, and probably do pay well on all *market gardening* operations.

The objection to soil analysis is this :—

The difference between the early soil of Virginia and the same soil in its present condition, has been made by loss of 1,200 lbs. of alkalis to the acre. But this 1,200 lbs. forms not quite three ten-thousandths (000.27) of the soil to the depth of a foot.

The idea that any amount of variation

within such infinitesimal limits can be measured and defined by *quantitative analysis*, is absurd. Top-dressing of the same amount would, in the same way, fail of being detected.

That directions given by agricultural chemists have led to successful results, is undoubtedly true ; but these directions have been founded rather upon experience and observation than upon chemical analysis.—*New England Farmer*.

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### Wintering Milch Cows.

A word on feeding cows for milk and butter. I have experimented for the last five years upon different kinds of dry feed—corn, barley, oat and buckwheat meal, fine and coarse middlings, shorts and bran, wet—with cut straw, hay and stalks. My cows give more milk and make more butter, from corn meal, wet, with cut straw, than any other food, by from one-third to one-half. It will not do to feed hay or stalks at the same time—it fattens the cows too much. Try four quarts of meal and one bushel of straw per day—that is, two quarts morning and night—the straw at noon ; they will gain in flesh at that. It is true, as you have remarked, that "corn meal is bad for milk," if it is fed with hay or stalks. Two quarts fed with hay or stalks is first rate for other cattle, or the same amount on straw is cheaper and better than hay and stalks without the meal.—Stabling is indispensable in the above feeding.

S. B. BARNARD.

Livonia, N. Y.

[*Rural New Yorker*.]

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### Fattening Turkeys.

The alimentary properties of charcoal are very great ; indeed, it has been asserted that domestic fowls may be fattened on it without any other food, and that, too, in a shorter time on the most nutritious grains. In an experiment made to test the value of the article, four turkeys were taken and confined in a pen, and fed on meal, boiled potatoes and oats. Four others of the same brood were also confined at the same time, in another pen, and fed daily on the same articles, but with one pint of very finely pulverized charcoal mixed with their meal and potatoes ; they had also a plentiful supply of broken charcoal in their pen. The eight were killed on the same day, and there was a difference of one and a half pounds each in favor of the fowls which had been supplied with the charcoal, they being much the fatter, and the meat greatly superior in point of tenderness and flavor. This would appear to establish, beyond a doubt, the benefit of charcoal for fattening purposes.

## Horticultural Department.

E. G. EGDELING, Contributor.

### Work for the Winter in Garden and Orchard.

The Winter days are come, and our readers may perchance be thinking that there is nothing to be done in the Flower Garden, Kitchen Garden, or Orchard, until the Winter solstice has passed away, and the sweet breathing Spring wakens all nature into life and loveliness again. A very natural idea certainly, in view of the biting frosts, the howling winds, the leafless trees, the congealing streams, and the bleak, drear aspect of the season, but an erroneous idea, nevertheless, as we hope to convince all those who honour us by a perusal of our lucubrations. This is the time emphatically for work, which greatly needs to be done, and which neglected now, will likely go undone altogether. As the Spring and Summer draw near, there is so much requiring immediate attention upon the farm, that Madam's flowers, and vegetables, and fruit trees, will probably be overlooked entirely, or if they receive any degree of attention, it will be in scanty measure, grudgingly bestowed. Now there is comparatively little work for the farm hands, and whatever is done in the garden or orchard, will be so much gained in the ensuing season, and will be that much less to be done at the busier period of the year. To promote as far as we may the convenience and profit of all concerned, we purpose in this, and the ensuing number of the Planter, to suggest certain things which ought to be done now, with a view to the permanent improvement of the garden and the orchard. And first, we will walk in to the Flower Garden and see what work there is which can be performed during the winter.

If there be any flowers, which are tender and likely to be injured by the frost, the first thing of course is to give them sufficient protection. Dahlias, to instance, need to have the stalks cut off, and the roots taken up, laid in the sun to dry, and then put away like potatoes, in some place where they will not freeze. The same remark applies to tiger lilies, gladi-

olas, and other roots, which will occur to the reader.

If the present winter should prove severe as the two preceding ones have been, it will be well to protect the roses with a few brush, or leaves scattered about the roots, and so of other out-door plants, which severe cold is likely to injure.

About the ground there will be probably dead stalks, all of which should be cut down and taken away, and the entire surface should receive a top dressing of manure, put on two or three inches thick.

If Hyacinths, Tulips, Jonquils, and the like have not been planted earlier, plant them now, breaking the ground deep, and making it very rich, and putting the bulbs about five inches below the surface, and putting them in a bed to themselves. After planting, cover the entire bed with manure, or litter of some kind.

Honey-suckles put out very early and should be taken in hand sometime in December or January, and all dead wood and leaves cleared away from the trellises, and the vines re-arranged and trained. If the trellises are old and decayed, remove them and supply better, and where poles have been used, supply such as may be wanting.

Layers which have been made from roses and other plants, may be taken up now and removed to the place where they are destined to stand. As to the mode of planting layers, see former articles on the Rose, &c.

This is a good time for making and repairing gravel walks, especially as in your walks in the garden at this season, you are very likely to detect how and where your ways need mending. When you observe a defect in the walk, don't pass it by with the thought that in the Spring you will have it repaired, but haul the gravel at once, and have the work done while there is opportunity, and while the need is apparent. And so if you have neglected the making of walks during the Summer, neglect it no longer.

In every well arranged, well regulated flower garden there ought to be some nook, or corner, appropriated to a compost pile, and to this spot you should haul during this season, oak leaves, woods earth, and the like materials, for compost, so that in the coming Spring and Summer, you will have all the materials for your

operations at hand. Throw it all into a neat, compact heap, and there let it be until it is wanted for use.

THE LAWN should come in for a share of attention now. The moles will be moving about and turning up sod, and doing great damage, unless they are watched closely. To guard against their mischiefs, roll the lawn frequently with a heavy roller, and rake the whole surface nicely to remove all dead grass, leaves, and litter of every kind, and after such raking, give the lawn a top dressing of manure. The snows and rains of winter will dissolve this, and take it down to the roots of the grass, feeding and protecting it, and preparing the way for a vigorous and beautiful growth next season. If there are any bare spots in the lawn, let them be re-sown with grass seed now, or re-turfed, as you please. If there are trees on the lawn, now remove all dead branches, and trim them as needed, and if other trees are needed, which are to be removed from the adjoining woods, this is the time for transplanting them. In taking up such trees do not bring mere poles, without roots, but take up trees with at least two or three feet of roots around, and, if possible, bring along with the roots some of the earth which adheres to them. And in selecting such trees, take those which stand in situations where they have free access to sun and air, as such always have more fibrous roots, and thrive better when removed to exposed places, than such as are grown in thickets.

From the Lawn we will pass into the Orchard, and see what we can do there. First we will have a peep at the trees, to see if they need pruning. And here observe, if the trees are sickly, unhealthy, and rather deficient in growth of wood, prune them at this season, as Winter pruning tends to augment the growth of wood; but if the trees are healthy and sufficiently woody, leave the pruning for the Summer, since Summer pruning tends to fruitfulness. If there is moss or dead bark adhering to the trees, it will benefit them to scrape it off with an old scythe blade, or other sharp instrument, and look about the limbs and forks of branches for insects, and destroy them. Give the whole orchard a good dressing of manure, and plough it in deep, taking care, however, not to go too close to the trees, so as to injure

the roots. Near the trees stir the ground with a fork or hoe, working the manure into the soil. Where young plantations have been made this fall, the trees ought to be properly staked, and fastened securely to them, so as to prevent the winds from disturbing the roots. For want of this simple precaution, young fruit trees often fail to grow, and then the nurseryman is anathematized for a result which has been brought about by the stupidity and carelessness of the cultivator.

THE KITCHEN GARDEN must by no means be neglected. We shall find there probably a few cabbages, parsnips, carrots, salsify, turnips, ruta-bagas, beets, &c., &c. These our first care will be to take up and put away carefully, guarding them as much as may be from the action of the frost. After having done this, cover the whole garden with good manure, and if it can be done spade it in deep. We say use the spade, because the plough ought never to go into the garden at all. Better have a small one, to be well cultivated with spade and hoe, than a large one, to be run over by the plough every year. If there are wet, marshy places about the garden, this is the time for making ditches and drains, and as our farmers almost invariably put the garden on a slope, it is generally the case that there is need of such drainage.

Next season we shall want a considerable quantity of poles and stakes for beans, peas, and the like, and now is the time to have them collected, and put in place ready for use, so that they may be in hand at the very moment that they are needed. If this be overlooked, we shall probably find ourselves next season so busy with field work that our beans and peas will be injured before we can spare a hand to gather poles and stakes.

Look after your herbs now, and if you have none, or a few, get a supply from a neighbour, and plant them. Sage, parsley, thyme, pot magorum, leeks, chalotts, tansey, horse-radish, and other useful and desirable herbs, if planted now, will come in very nicely on many occasions.

The strawberry beds may have now, as we directed in a former article, a covering of pine-tags, not so much to protect them from the cold as to keep the fruit from contact with the

earth, and if not done, manure the plants as heretofore advised.

For several winters past, the raspberries have been so injured, that they failed to bear the ensuing season. To guard against this, take poles, and level the canes down to the ground, laying these poles on them, and then cover them with straw, pine brush, or something of that sort, which will protect them from the cold. In the Spring, remove the poles and the covering, and the canes will resume their erect position, and then trim them. A gentleman near Richmond, who adopted this plan last Winter, had a fine crop of raspberries the last season, whereas none of his neighbours, who neglected this precaution, had any.

All this work is of course such as can only be done during fair weather, when hands can safely work out of doors; but there are some things which can be looked after during foul and inclement weather. Among these is looking after the seeds which have been saved for the next year's planting and sowing. If these be left too implicitly to the care of Uncle Jack, or Uncle Bob, the chances are that when they are required for use, he will bring you a box or barrel, in which you will discover a mouse's nest, and perhaps a brood of young ones, but precious few seeds that have not been destroyed by the vermin, and what remains so hopelessly mixed and mingled, that radish cannot be distinguished from cabbage, or turnips from mustard.

Overhaul your potatoes, and see if they are sound, and if there be decaying ones, remove them, and see if the mice and rats have gone into them, and made channels through which the water can pour into them.

These hints must suffice for the present issue, though there are many others which might be mentioned and enlarged upon. These, however, show that there is no need to be idle during the Winter months, any more than during the Spring and Summer; nay more, that he who would reap the fruits of the earth in the season of their ripening, must be "instant in season and out of season." A well kept farm, orchard, or garden, furnishes employment for the skill, tact, and energies of the cultivator,

and excellence can only be purchased at the cost of ceaseless and continual vigilance and exertion.

### Apples.

A LETTER FROM HENRICO.

An intelligent friend, living a few miles from the city, has forwarded to us the following letter, for which he will please accept our thanks, and which we publish as an interesting verification of our remarks on the topic of which the letter treats:

*October 28th, 1857.*

DEAR SIR:

I was much pleased, as well as instructed, by your article in the last Planter, on "Apple Trees." In confirmation of your theory, that apple trees will bear fruit annually, I take pleasure in giving my experience for the past two years. Last year my orchard bore abundantly, as well as many trees scattered about the farm. After gathering the fruit, I felt it would be ingratitude on my part to pay nothing back for this rich yield. So I hauled and spread out in the orchard a pretty good covering of manure from the stable yard. In February, 1857, I ploughed this in, and planted Irish potatoes. To my great surprise, (and gratification,) my trees bore nearly as many apples as last year, with a decided improvement in the quality of the fruit. I had always been of the impression that apples were produced in alternate years—and I believe this is a fact when the trees are not regularly manured and properly cultivated. As a proof—not a single one of the scattering trees before mentioned, had an apple upon it, though in more favorable positions for bearing. These were not manured, nor well tilled. It has long been a matter of surprise to me that Virginia farmers neglect the culture of this most delicious fruit; one not only of pleasure and comfort to the household, but profitable to the husbandman. These hasty lines are at your disposal.

HENRICO.

REMARKS.—Henrico's experience is that of every individual who has fairly tested the theory to which his letter refers, and our only wonder is that anybody should ever have supposed that apple trees would yield fruit annually without manuring and appropriate cultivation. The farmer who expects to raise wheat, corn, or tobacco, knows that his land requires to be fed with manure year by year, and to be thoroughly cultivated besides, and if

he failed to meet these wants of the soil, all his fields would soon become barren and unfruitful. Why should he suppose that the orchard would prove an exception to this law of universal application? Certain it is, this law does apply to the orchard as well as to the wheat field or the tobacco lot, and he is not wise who forgets it, and will not only find his apple trees yielding their fruit only once in two years, but sooner or later will have an orchard of barren, unproductive trees. We have another fact in this connection, which is even more striking than the fact detailed by HENRICO. Near the city is a gentleman, who has a row of apple trees which are planted on the side of a road, with cultivated land on one side, and the hard, beaten track on the other; and this singular and significant fact is patent to all who look upon the trees, that while on the side of the trees next the cultivated land the fruit is large and fine—on the other next the road the fruit is decidedly inferior. Is there any method of accounting for this difference, except by looking to the character of the nourishment drawn by the roots running out from the opposite sides of the trees? The roots running into the cultivated land take up much more sustenance from the soil, because it is manured and worked.

The idea which HENRICO seems to have entertained heretofore, that apple trees are not to be expected to produce fruit oftener than once in two years, has, we believe, been very prevalent in this State, and had its origin in the fact that farmers usually bestowed no labour upon the orchard, never manured it, and consequently one crop of fruit exhausted the energies of the trees, and a rest year was absolutely necessary to their recuperation. But let those who have orchards act properly, give the trees every year, and during the Winter season at that, a good manuring, and every man that has an apple tree upon which to try the experiment, will soon learn that apple trees will, and ought to produce annually.

We have advised that this manuring be done during the Winter, and we will state a few reasons. If the ground is stirred at that period, it will expose many insects to the cold, which would otherwise live in embryo until the ensuing Spring, and then hatch out to prey upon the tree and upon the fruit, it will tend to keep

back the blossoms to a later period of the Spring, so that the late frosts will be less likely to destroy the young apples, and the rains and snows of winter will dissolve the manure, and carry its elements down into the soil where they can be readily taken up and appropriated by the roots of the trees. But whether at one period or another, our earnest, urgent advice to each and all is, to manure your apple trees, and give them all needful cultivation; and we shall be pleased to receive from HENRICO, or any other person, any and all facts within their knowledge, likely to convince our Virginia farmers that the apple orchard is a desirable and valuable adjunct to every well regulated homestead.

### The Profits of Market Garden Farms.

Scarcely a year passes, but some individual, misled by a false estimate of the profits of market gardening, in the vicinity of this and other interior towns and cities of the Commonwealth, breaks up his establishment, buys at an enormous price a few acres of land near the city, and enters upon the occupation of raising vegetables for sale in the market, dreaming all the while of the wealth which is to be won by his industry, energy, and skill. A year or two suffices to dispel the delusion, and the experiment winds up, with the wreck of a fortune which would have sufficed for the comfortable maintenance of the unfortunate man, during the term of his natural life, had he only been content with the surer, if slower gains of legitimate farming. There always will be men, who in their haste to be rich, will fall into temptation and a snare, and peril whatever of fortune they may possess; and it is with no hope of benefitting such that we have undertaken to devote some space to a consideration of market gardening and its profits, but with the view of doing what we can to save others who would probably act upon false information, and so heedlessly rush to ruin and the wreck of their fortunes.

That under proper conditions, market gardening can be made profitable, it is no part of our purpose to deny. The statements which from time to time have been published in the Planter, put this beyond all question; but we call attention to the fact that in every instance these profits have been realized from farms

which were so situated, that the cultivator had access to the markets of the large cities of the country, such as Baltimore, Philadelphia, New York, and Boston. There has been, so far as we know, no authentic report of a profitable market garden farm situated elsewhere, and in our judgment none such can be found. Certainly within our knowledge there is none, and we have enjoyed very large facilities of observation among the gardeners of the State. The result of that observation may be summed up thus: That while market garden farms, which are so situated that the cultivator can have ready access to the markets of the cities before mentioned, are very valuable, and may be rendered highly profitable, that such farms located elsewhere are the least profitable and valuable property which a man can possess, and that culture less profitable than any other form of agricultural pursuits, upon which an individual can enter.

We write this as the deliberate conclusion of our judgment, after years of inquiry and investigation, and we doubt not that every man who has reflected upon the subject and taken the trouble to inform himself, will concur in the opinion, and we could bring to support it, did we deem it necessary, facts and arguments which would establish its correctness beyond the possibility of cavil.

Suffice it to say, however, for the present, that during the period of our residence in Richmond, numerous persons from different parts of the State, and some from other States, have tried this experiment in this vicinage, and it is a knowledge of the result in every such instance which has induced us to write the present article. We have yet to meet with the man who made money, and we could tell of numbers who have suffered losses which they can never repair, losses which have entailed poverty, deprivation, and in some instances suffering upon wife and children. Nor were these isolated examples, which after all, might be regarded as mere exceptions to a general rule, which might be explained by mismanagement, want of skill, extravagance of expenditure, or some other fortuitous circumstance. These things would prevent the realization of profit from farming anywhere, and under any circumstances; but the cases to which we allude were the experiences of men who would

have succeeded had success been possible, but who failed, because in the nature of things failure was inevitable. The demand here for garden products was not sufficient to justify their production in such quantities as would pay, the profits of this culture arising more from the sale of large quantities than from the procurement of a large price. Do the best he could, raise as many vegetables as he might, the owner of the market garden farm could sell but a limited quantity of truck, and that far too little to enable him to make money.

There are localities now in Virginia where it is otherwise. To instance, the people about Norfolk and Portsmouth have a direct connection by water with all the large Northern cities, and in those markets ready sale can be found for any quantity of vegetables, and for all the productions of the market garden farm. Such culture there ought to be profitable, and we believe that it has so been found; but cut those people off from their access to the markets of Baltimore, Philadelphia, New York, and Boston, without affording them an equivalent demand for their products, in some other direction, and market gardening will at once cease to be profitable there. If they had to depend upon the sale of their products in the Norfolk market, they would starve, or break, in less than three years, every mother's son of them.

Now just what would be the condition of the market garden farmers, about Norfolk and Portsmouth, if they were cut off from the markets of the great Northern cities, is the fact with those who come to the vicinity of Richmond or any other of the interior towns and cities of the State, and purchase land to be cultivated as a market garden. That they can make money is impossible, that they must lose is inevitable, and they are not wise if they allow themselves to be deceived by contrary representations. Our interests would be greatly promoted by making an impression contrary to that which we are seeking to make, as the greater the demand for land near the city, the more valuable would be all that we possess,—but we hold it our duty to tell the truth, even if in so doing we lessen the value of what we own. We know that these things are true, not only from our observation, but by a fair experiment; and our earnest advice to any farmer

who is thinking of leaving his country home, to tend a market garden farm near the city, is to abandon the idea forthwith and forever, or until the demand for the products of such farms here, is much greater than it is now, or is likely to be for many years to come.

It is not pretended that an individual living upon a farm within a few miles of the city, and pursuing general agriculture legitimately, may not increase the profits of his farm by raising for sale in the market, every kind of vegetable, in addition to the staples which he cultivates. That is certainly true, and we have more than once endeavored to convince the farmers all over the State, that a degree of attention to many little things which they have been wont to neglect, would tend largely to enhance the profits of agriculture in the State. That is a very different thing from the cultivation of a piece of land solely with reference to the supply of the markets with vegetables. The one case, what vegetables are raised and sold at any price whatsoever, is so much additional profit derived from the culture of the soil, while in the other the owner of the market garden farm has no reliance except upon sales of truck, and if he cannot sell that at remunerative prices, and in large quantities, he is a gone goose, there is nothing which he can fall back upon. There is then nothing inconsistent in the views we have expressed concerning market garden farming, and the advice which we give all farmers to raise vegetables for family use and for sale in the market; and we say in all candour to our readers, if you must have a market garden farm, go where you can do a profitable business, to some locality which gives you access to the markets of the larger cities of the Country; but unless you desire to become poor, settle not in the vicinity of any of the interior towns or cities of the State to pursue this business.

#### The late Fair and the Next.

The last exhibition of the State Agricultural Society, while fully equal to any which have preceded it, when regarded as a whole, was certainly much inferior as an exhibition of the products of the flower garden, the kitchen garden, and the orchard. There were but few exhibitors in this department, and those chiefly individuals residing near the city of Richmond,

and hence the fact developed by the list of premiums awarded, that nearly every prize was taken by persons living in counties contiguous to this city.

This ought not to be, and we hope will not be the case another year. It is discreditable to the farmers, gardeners, and people of the State at large. There is no department of the Fair, which could be so well supplied, and with so little cost and trouble to the exhibitors.

It is a matter of considerable expense, trouble, and annoyance, for one living in Augusta, Greenbrier, Wythe, Pulaski, or other remote county of the Commonwealth, to bring to the city for exhibition, a fine colt, heifer, sheep, fat ox, or superior hog, but it would cost comparatively nothing to bring a pot of pickles, a jar of honey, a dozen fine apples, a bushel of superior potatoes, a parcel of mammoth turnips, a pound or two of superior butter, a cake of home made cheese, a bottle of domestic wine, a jar of jelly, and such like articles.

Not only could these things be readily brought to the Fair, but could as readily be procured. There is not a member of the State Agricultural Society, but could do something to add to the interest and success of this department of the Fair. All are engaged in the culture of fruits, vegetables, and esculent roots, or if they are not, they ought to be. Each one has a dairy, and is engaged in the making of butter, and many are making cheese every year. Every family bakes bread and puts up preserves and pickles. Why then should there be any deficiency in respect to these things at our annual exhibition?

It is to be feared that there is a disposition on the part of the mass of the members of the Agricultural Society, to shift from their shoulders all responsibility for the success of these annual exhibitions, and devolve the whole work upon a few individuals. It is expected that Major Kent shall show a fat ox or two, that Col. Ware shall bring down a few pens of superior sheep, that Mr. Rives and others shall have their stallions on the ground; but A., B. and C., to the end of the alphabet, appear to think that their whole duty is done when they have come to look upon what is exhibited by others.

This is a most erroneous view to take of the



matter, and one that will infallibly lead to the entire cessation of these annual exhibitions. A few individuals cannot keep up these exhibitions. They can only be perpetuated by the conjoint efforts of all the persons comprising the Agricultural Society, and each one must be willing to do whatever he can to promote the success of each exhibition. Each one must accustom himself to think of the exhibition as something which concerns himself individually, and its success as depending in a good degree upon his individual exertions. Believing thus, his action will be respondent, and instead of twenty or thirty exhibitors, there would be at each as many hundreds, all deeply interested in the success of the Fair. It is not difficult to perceive how largely this would increase, not only the list of articles on exhibition in every department, but also the attendance of persons at every exhibition.

But we must not pursue this train of thought farther, as it is leading us away from our main purpose in this present writing, which was simply to ask all our readers to do something this year to have the horticulture and floraculture of the State better illustrated at the Fair of 1858. We commence to urge this subject thus early that all may have it in mind from now until the period of the exhibition arrives, and may make their arrangements to bring some contribution, be it ever so simple, to the common stock. Perhaps you can do but little, and you may be tempted to think that little unnecessary. Cast such thoughts from you and do what you can. There are but few who can do a great deal, and it is only by each doing something that a great deal can be accomplished. The ocean is a vast body of water, but all its vastness is but the aggregation of an almost infinite number of drops; and the solid earth on which we tread is composed of an infinite sum of particles of matter. Let each one of the thousands who make up the membership of the Agricultural Society, bring something to the exhibition of '58, and it will be extensive beyond anything which has been dreamed of heretofore.

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DISCOVERY OF NITRATE OF LIME.—There has been discovered on the farm of Mr. James Peage, near Staunton, Va., an apparently inexhaustible supply of nitrate of lime, containing large portions of saltpetre.

### Root Pruning.

Everybody knows what pruning is, what its advantages are, and have an idea, more or less correct, of the manner in which it should be done. We speak now of the pruning of the branches of trees, shrubs, and plants. But there is another kind of pruning which, in certain cases, is of infinite advantage, and with which the majority of fruit-growers in this region are not quite so familiar. This is ROOT PRUNING,—a process something similar to that other pruning of which we have spoken, only it is applied to the roots of trees, instead of the branches; and since there is often need of its application to fruit trees, we propose now a short description of the cases to which it is applicable, the results attainable by the process, and the manner in which the process is performed.

The class of trees which are chiefly benefited by this process, are those which have an exuberant growth of wood and foliage, but which, on account of that very exuberance, fail to produce fruit, or produce it in very limited quantities. The difficulty in all such cases which is to be remedied is, that the tree draws an overplus of nourishment from the soil, or sometimes an improper kind of nourishment,—and in one case or the other, the remedy is, to diminish the amount of nourishment, or to change its character. We have heretofore shown, that where the tree is unfruitful from an excessive supply of sap, it can be rendered fruitful by partially girdling it; but in many cases even this proves insufficient, and then root pruning is the only remedy. And in the cases where the tree produces fruit, but of unpleasant and harsh flavour, it often happens that a resort to this process, by changing the character of the food furnished to the tree, changes totally the character of the fruit, greatly improving its flavour. Besides which, this process applied to trees in the spring tends to check the early development of the blossoms, and thus to preserve the fruit germs from the late frosts, which so often disappoint the expectations of the orchardist. These, then, are the cases to which root pruning is applicable.

The process of root pruning is simple and readily comprehended. Having ascertained that the tree needs such treatment, the first thing, of course, is the removal of the earth from about the tree, so as to get at the roots;

and if the tree has tap-root, they are the ones to be pruned. This digging down is to extend at least so deep as through the surface soil, as it would not answer to cut the root close to the trunk of the tree. Having reached this point, take a sharp chisel, or other sharp instrument, with which it can be neatly done, and cut through the root in a slanting manner, making a smooth, clean cut. When there is no tap-root which can be pruned, any other of the leading roots may be cut in like manner. Wherever this cut is thus made, numerous fibrous roots will put out in every direction, spreading themselves all through the surface soil, and draining nourishment thence for the tree. The amount of pruning proper in any given case, must of course be left to the judgment of each cultivator, who looking to all the facts, must take away so much of the roots as may seem likely to promote the ends he has in view. No general rule can be given for the guidance of those who attempt this process, but a little good sense and observation will prevent any fatal blunder. Of course when the pruning is done, the earth is to be put back over the roots, and a little manure would do no damage; and in every case root pruning is to be done during the winter.

The immediate and direct effect of root pruning is, of course, to diminish the amount of nourishment drawn from the soil by the tree, thereby stunting its growth, and so producing fruitfulness. Why this should make the tree fruitful it is not easy to tell, but that the fact is so, is beyond all question. An analagous instance is presented in the case of a budded or grafted tree. If it be allowed to stand where it was when the graft or bud was made, a prodigious growth of wood will be the result, and but little if any fruit. The removal of the tree impedes the development of wood and foliage, but hastens the period of fruit-bearing,—and the oftener the young tree is removed, the sooner will it bear fruit. This is accounted for by the fact, that every removal breaks some of the roots, which is but another form of that very process which we have before described. In the case of a tree where the tap-root is pruned, another result follows, that instead of draining nourishment from the lower strata of soils, the new-formed roots will drink it in, from the richer surface soils, and thus often the character of the fruit is greatly improved.

We have thus far spoken of this process as applicable only to fruit trees, but it is equally applicable to all flowering shrubs, and to some vegetables. The Cauliflower is one instance of a vegetable.

Two examples, illustrating the value of root pruning, will very appropriately conclude this article. The first is the case of a pear tree, which stood in the grounds of a gentleman in the city of Richmond. At the precise spot where the tree stood, there had once been a deep well, which was filled up, and afterwards the pear tree in question planted. There was, consequently, a very deep soil into which the roots penetrated. The tree had grown prodigiously, but year after year it produced nothing but leaves and wood. The owner directed that it should be cut down, but his gardener insisted that he should be allowed to try what a little management could do with it. He first girdled it partially, thinking that would render it fruitful; but a year passed and it bore no fruit. He then resorted to root pruning, dug down until the tap-root was exposed, and cut it off as directed, and the ensuing season the tree produced a crop of pears, and has continued to bear ever since.

The other case was that of two apricot trees, planted at the same time, and not far distant; one of which at maturity bore fruit abundantly, while the other out-grew the former, had more and more beautiful foliage, blossomed season after season, but produced no fruit. The owner applied to the Editor of a horticultural journal for a remedy, who advised a resort to root pruning, supposing that the unfruitfulness of the tree was occasioned by an over-supply of sustenance from the soil in which it stood. The remedy was tried, and the result was, that the barren tree became as fruitful as the other.

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PLANT EVERGREENS.—Evergreens scattered about the grounds relieve the dreariness of winter, and give a cheering aspect to the homestead. The eye rests upon them with pleasure standing amid the desolation and decay of the season; and they may serve to remind us, also of the better part of our nature which survives the decadence of the physical frame.

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## LIST OF PAYMENTS

*From July 24 to September 28, inclusive.*

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

r Wm Wirt, July 58	\$2 00	Edgar Burroughs, 15 Ja 58	\$2 00	Jno D Hughes, July 58	\$2 00
Wirt, "	2 00	Jno R Barnes, Jan 58	2 00	Wm H Fowlkes, Jan 58	1 00
W Bataille, Jan 58	2 00	J J Burroughs, Dec 57	2 00	Jas Garland, "	1 00
V G Coleman, Feb 58	2 00	J L Ransom, Dec 58	5 00	J D Belfield, July 59	5 00
F Moses, July 58	2 17	Dr J R Woods, Jan 58	2 00	Jos Johnson, Jan 60	5 00
uy F S Trigg, Jan 60	6 56	Dr H L Jeffries, "	2 00	G A Fowlkes, July 58	2 00
W Cook, Jan 58	3 88	Dr A J Brodnax, Aug 58	2 00	Dr F N Mullen, Jan 60	5 00
V A Reynolds, Jan 58	3 24	Gen H B Woodhouse, Ja 58	3 00	Jos A Peck, Jan 59	5 00
Hightower, Jan 60	5 00	H F Woodhouse, "	3 00	Wm M Willeroy, Jan 58	2 41
Cauthorn, Jan 58	1 00	G D Scates, "	3 25	Ro McCurdy, July 58	2 00
r J G Brodnax, July 58	2 00	B N Robinson, April 60	8 00	Jno Haw, Jan 59	5 25
r Geo C Scott, Jan 58	1 00	Gen S F Patterson, Jan 58	1 00	M Clarke, Jan 60	5 00
hos S Martin, "	2 30	Jno M Preston, Apr 58	2 00	Dr J R Baylor, Jan 58	1 25
Warner Lewis, "	3 25	W Fitzgerald, Jan 58	2 34	S T Peters, "	2 00
Samuel, "	3 21	E Jacob, "	1 25	Geo W Morton, Oct 57	2 00
saac Hudson, "	1 00	W T Mason, "	2 00	M Durrett, Jan 58	5 62
r W S Morton, Apr 59	4 00	J D Smith, "	2 60	W E Preston, May 58	2 00
ohn Jeter, Jan 58	2 00	Wm Gilison, Jan 60	7 50	J B Lucas, Jan 58	2 00
L Taylor, Jan 58	3 25	C D Nelms, July 57	2 00	L J Bowden, Jan 58	6 25
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o P Fickle, Nov 58	5 00	Col J S Dillard, Apr 58	2 00	J T Taurman, "	2 00
Wm Townes, Jr, July 58	2 00	N H Turner, Jan 58	2 83	H E Dennis, Sep 58	2 00
E Woltze, "	2 25	Wm C Jones, July 58	2 00	H M Bowyer, Oct 58	5 00
V M Hite, Jan 58	4 92	W A Turner, Jan 58	2 00	W M Radford, Jan 60	5 00
as Arnold, "	1 00	O H P Corprew, June 58	2 00	Jno T Greenlee, Jan 58	2 73
C S Hundley, Jan 58	3 29	B M Rhodes & Co. Jan 58	2 00	F B Whiting, Jan 60	5 00
N Gresham, "	4 40	R F Hannon, "	2 00	Geo Stillman, Sept 58	2 66
A T M Rust, Jan 60	5 63	Wm Gough, "	2 00	Dr Thos Smith, Jan 59	3 00
o Wilson, July 58	2 50	Jos R Bason, Aug 58	2 00	Wm Worsham, July 58	2 00
Dr Jno S Jackson, Jan 58	2 00	R H Harwood, Jan 58	2 00	Benj R Woody, Jan 58	2 00
no G Wright, Apr 58	5 00	J C Coleman, Aug 58	2 00	C B Easley, "	2 00
Dr J S Lewis, Jan 58	4 75	J S Atlee, July 58	2 00	J Flippo, "	2 00
M Goddin, "	2 62	N Quesenberry, Jan 60	5 00	A D Upshur, July 59	5 00
Dr J G Cabell, "	1 67	M B Carrington, Jan 58	1 00	W C Daniell, Jan 58	2 21
no G Hughes, Jan 59	4 37	Jno Morton, "	1 00	John Ellett, April 58	2 00
M G Harman, Jan 60	6 00	A T Moir, "	1 00	E Legrand, June 58	2 00
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B Penn, "	2 50	Dr E F Gunter, "	2 00	W H Harrison, Jan 59	2 00
no Willis, "	3 87	J Massie, "	2 42	Chas T Friend, Jan 58	2 00
aml A Guy, "	2 00	Thos M Hughes, "	2 30	C H Rhodes, "	3 00
I C Williams, "	2 50	Ro Saunders, July 58	2 00	Dr J H Ellerson, Jan 59	2 00
os A S Acklin, Apr 58	2 00	Capt R O Jennings, Ja 58	3 25	Dr R Eppes, "	5 00
E McConnell, Jan 58	2 00	W E Coles, "	3 25	Wm Copland, Sep 58	2 00
T W Walton, "	1 00	S M Pettit, "	2 40	Chas Guerrant, Jan 58	5 00
V A Horseley, July 58	2 00	Jno Sturdivant, "	3 25	A Bailey, "	2 00
F W Smith, Jan 58	2 00	Jas T Crockett, "	5 00	C A Anderson, "	3 00
P Marshall, Jan 58	2 00	D D Byars, "	2 42	A D Pollock, "	2 00
Col G Scott, Jan 60	5 62	W Godsey, Dec 57	5 00	G H Adair, July 59	5 00
Dr G P Holeman, Jan 58	2 00	E T Winston & Co, Jan 58	2 00	J H Anderson, July 57	4 00
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R T Bibb, "	3 25	E J Thompson, "	2 00	Wm Woodson, Jan 58	2 00
A E Smith, "	2 50	N Mason, "	3 25	Jno A Harman, Jan 59	5 00
P White, "	2 00	C H Lynch, "	2 00	Col D S Johnston, Oct 58	2 75
H James, 15th Feb 58	2 00	R Allen, Jan 58	2 42	Dr O F Baxter, Jan 59	5 00

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# Mr. Lefebvre's School,

Corner of Grace and Foushee Streets, RICHMOND, VA.

The next Session of this INSTITUTION will open on the FIRST DAY OF OCTOBER, 1857, and close on the First Day of July, 1858.

## TERMS FOR THE SCHOLASTIC YEAR,

For Board, - - - - -	\$200	For two lessons (of an hour) a week, - - -	\$ 80
For Washing, - - - - -	20	For three lessons (of an hour) a week, - - -	120
For Lights, - - - - -	6	For four lessons (of an hour) a week, - - -	160
For English Tuition, - - - - -	40	For the use of Piano, - - - - -	6
For Modern Languages, (each,) - - - - -	20	For Drawing, from Models, - - - - -	20
For French, when studied exclusively of the English branches, - - - - -	40	For Drawing, from Nature, - - - - -	40
For Latin, - - - - -	20	For Painting in Water Colors, - - - - -	40
For Music on Piano, Harp, Guitar, Organ or Singing: - - - - -		For Oil Painting, - - - - -	50
For one lesson (of an hour) a week, - - - - -	40	Primary Department—for Children under 11 years of age, - - - - -	30

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All letters to be directed to HUBERT P. LEFEBVRE, *Richmond, Va.*

[July '57—1y

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The present Session closes on 3d July next. Number limited to 14. There will be several vacancies on 1st February next. For terms, &c., address

Dec 1857—1y

REV. S. W. BLAIN,  
Greenwood Depot. Albemarle Co., Va.

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