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THE SOUTHERN PLANTER AND FARMER,

DEVOTED TO

Agriculture, Horticulture, and Rural Affairs.

L. R. DICKINSON.....Editor and Proprietor

RICHMOND, VA

NOVEMBER, 1878.

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THE SOUTHERN PLANTER & FARMER,

DEVOTED TO

AGRICULTURE, HORTICULTURE AND RURAL AFFAIRS

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

L. R. DICKINSON, - - - - - EDITOR AND PROPRIETOR.

Vol. XXXIX. RICHMOND, VA., NOVEMBER, 1878. No. 11.

[For the Southern Planter and Farmer.]

DR. PAGE ON THE ANALYSIS OF FERTILIZERS.

Your card asking my "opinion as to the value of chemical analyses of fertilizers to the farmer as a protection against fraud," is just received; and I will answer it, to the best of my knowledge and belief, without the slightest intention of being drawn into the discussion carried on in your journal. The discussion, so far as I have read it (I have not read all the articles), seems to me to turn upon the definition of "analysis." One side seems to regard the analysis of fertilizers from the standpoint of mathematical determinateness and exactness, while the other side looks upon it as only approximately so; and, considering the number of "factors" involved, regard it as of little value—perhaps useless. As is the case in most disputed subjects, the truth, in my opinion, lies partly on each side. The literal meaning of "analysis" is "an unloosening or breaking up of any thing understood to be complex, in which simpler constituents or elements may be thus brought to view." Mathematical analyses, in which we may look for exactness and determinateness, exceeds any thing attainable in chemistry, because the chemist has to deal with things known by experience and connected by physical causation; *things* he can experiment with freely, it is true, and can determine upon with very considerable approximation to accuracy, but not with mathematical exactness. The character of the evidence of chemical analysis is not equal to that of the mathematical; and its inferiority in this respect is well known. But, while this is true, the evidence afforded by chemical analysis is sufficiently determinate and exact to afford the farmer valuable information in regard to the proportion and value of the elements of plant food contained in a

given ton of manufactured fertilizer. But, analysis cannot be properly considered in this connection without the related process called "Synthesis," which means "a putting together or compounding;" and this is especially applicable to the chemical analysis of all manufactured fertilizers. The compounding of fertilizers with different materials, with the object of presenting certain elements in definite proportions, to be applied to the soil to produce certain effects, is, in reality, an *arbitrary synthesis*. The active elements in the fertilizer put together, in this way, are advertised to be so much by weight or per centage, and to be worth so much in money value to the farmer. How is the farmer to ascertain the truth of this advertisement, except by a chemical analysis of the article in question, or by an experiment in the use of it, requiring twelve months' time, and the loss of interest on the money and labor, as well as the risk of finding it worthless?

If the compounder of the fertilizer uses materials in which certain proportions of phosphoric acid, nitrogen and potash are contained, chemical analysis, although not possessing the determinate exactness of mathematical analysis, can be made with sufficient accuracy to afford reliable information in regard to the existence and proportion of these substances in the mixture. And if this mixture is applied to the land with proper care, in sufficient quantity, the experimental result, *in a majority of cases*, will prove practically that these valuable constituents *did* exist in the mixture. On the other hand, if the compounder of the fertilizer uses materials in which the valuable elements of plant food are contained in smaller and variable proportions, I believe that chemical analysis can be made with sufficient accuracy to afford information of the fact; and if the mixture is applied to the land with the same care as the other, the experimental result, *in a majority of cases*, will prove practically that the valuable constituents *did not* exist in sufficient quantity in the mixture. During the past six years, I have used many manufactured fertilizers, as well as chemical substances of known value, on various crops, and, with the exception of the present year, when the fertilizers were washed out of the soil by torrential and excessive rains, I have found, in a large majority of cases, the experimental result to sustain the analysis.

As far back as 1857, Stockhardt, of Germany, published a tariff of prices of fertilizers manufactured at that time, with the aid of which, in a very simple manner, the cost of the manure could be compared with its real value. In this tariff the estimation of the money value of each of the three important constituents of these fertilizers in general, was based upon the price that would have to be paid for it in other and also commercial forms, containing a known and often guaranteed proportion of the substance. The per cent. composition of a fertilizer being known, the purchaser could then tell, on consulting the tariff, whether he was required to pay any more for the number of pounds of nitrogen or phosphoric acid in one hundred pounds of the article he was buying than he would have

to pay for the same number of pounds of nitrogen in the form of sulphate of ammonia from the gas-works, or phosphoric acid from bone-black of the sugar refiners (Caldwell). In 1866, Stockhardt prepared a greatly improved form of tariff, which was adopted by the farmers throughout Germany, and the values allowed are regarded as not far from correct for phosphoric acid, nitrogen and potash. Prof. Johnson, in a report in 1869, gave the following values in *gold*: Potash, 4 cents; soluble phosphoric acid, $12\frac{1}{2}$ cents; insoluble, $4\frac{1}{2}$ cents; nitrogen, 17 cents. The mean of the four values of nitrogen in Stockhardt's tariff was 17.9 cents. This system, from all accounts, has worked well in Germany, where the law has been strictly enforced; and I have no hesitation in saying that the character of the fertilizers has changed greatly for the better, since chemical analyses have been resorted to in this country as a means of protection of the farmer against fraud. That different results often occur from different methods used in the analysis, producing discrepancies after the analysis has been made, and manifesting a lack of determinate exactness, I am prepared to admit; that with certain methods, chemists have sometimes made the calculated value of the article exceed the cost, I am also prepared to admit. But, for all that, I agree with Professor Johnson, "That the farmer, in a large majority of cases, will not err in refusing to lay out his money for any article whose cost largely exceeds the calculated value" of phosphoric acid, nitrogen and potash contained in it.

University of Virginia.

JNO. R. PAGE.

PLANT FRUIT TREES.—It is a beautiful custom, in some parts of the old world, to plant a tree whenever a child is born, which becomes its especial property. During the period of infancy the tree is cared for most assiduously by the parents and relatives of the child. Its fruit is sold and the proceeds invested for the child's benefit. At the proper age the child assumes charge, and the tree receives the most careful attention, as there is some superstition connecting the welfare of the tree with the happiness and prosperity of its owner. A custom of this character would be a blessing to any country, and especially to ours, which contains within its widely extended borders, soil, climate and every other condition favorable to the growth of every kind of fruit, not strictly tropical. We should be fruit eaters instead of fruit consumers, as we now are. Inhabitants of the extreme Southern States especially should devote considerable attention to this subject—far more than they now do. It is a very appropriate celebration to plant a fruit tree. Any family inaugurating such an observance will soon have quite an orchard with no apparent labor. The associations which will necessarily attach to each individual tree will be a constant enjoyment or a pleasant memory.—*Exchange.*

He is the happiest, be he King or peasant, who finds peace in his home.

[For the Southern Planter and Farmer.]

LETTER FROM DR. PAGE, OF THE UNIVERSITY, TO
GOV. WM. SMITH.

WARRENTON, VA., September 25th, 1878.

I am now investigating the means by which to make "farming pay." When my conclusions are reached, I hope to be able to make them so plain as to be easily understood by the commonest understanding. In the prosecution of this design, I addressed a letter to Professor Page, of our University, in which I laid it down "*that we must manure more and at a reduced cost*"—a postulate from which none will, I presume, dissent. But the grave question is, How are we to do it? In reply, the Professor favored me with the views I now send you, with permission to give them to your readers if you think them calculated to promote the cause of agriculture.

In haste, yours truly,

WM. SMITH.

UNIVERSITY OF VIRGINIA, September 20th, 1878.

HON. WM. SMITH,

Dear Sir,—Yours of the 18th instant just received. It affords me pleasure to know that my report strengthens your mature conclusions in regard to the interest of the Virginia farmer.

"That we must manure more, and at a reduced cost," is a subject of the greatest importance; and I fully agree with you, "that farm manure, properly composted, ought to be the main reliance of every farmer" to make the crop and to get the land well set with grass seeds. That "barn-yard manure, carefully attended to and kept under shelter, will furnish nitrogen," most highly valuable as a plant food, should never be lost sight of; but the amount of nitrogen produced will vary according to circumstances, which will be stated as follows:

I. It will be proper to consider the sources of nitrogen in farm-yard manures. They are (1) the excrements of animals derived from nitrogenous compounds in the food or fodder consumed. (2) The materials used for their bedding and litter, provided they are kept in stalls and are properly cared for. These two sources of nitrogen differ in their yield: (1) All the nitrogen contained in the litter and refuse fodder appears in the manure, if properly attended to. (2) The nitrogen in the food is consumed in proportion to the requirements of the animal. If it should be a young, growing animal, a certain amount of nitrogen will be consumed to build up the tissues of its increasing body. If it should be a cow, giving from three to six gallons of milk a day, the nitrogen of the food will be taken for the production of milk and its caseine. If it should be an animal fattening for meat, the increased production of cellular tissue, in which to deposit the fat, will consume the nitrogen in considera-

ble proportion. If it should be an animal already mature in growth and fat, neither gaining or losing, the nitrogen of the food consumed would be very nearly compensated in the excrementitious matter.

From the above statement of the facts, so far as ascertained, it follows that it is the mature fattening animal—one without any drain upon the system—whether an ox, cow, sheep or hog—that yields the largest production of nitrogen contained in the food, in the excrements, the manure of which is richest in nitrogen. According to Messrs. Lawes and Gilbert, only a little over four pounds of nitrogenous matter is retained by a fattening ox, out of one hundred pounds of the same in its fodder and food. Experiments conducted in Germany go to show that milch cows withdraw from the nitrogenous substances of their food from 25 to 40 per cent. of nitrogen, which does not appear in their excrements. Wolff states that the average consumption of nitrogen by a milch cow for the demand of its milk is 20 pounds out of every 100 pounds in its fodder. It is stated that the horse withdraws about 12 per cent. and the sheep about 5 per cent. of the nitrogen in its fodder. They return, therefore, about 88 and 95 per cent., respectively, in their manure. Doubtless the greater loss on the part of the horse is due to the fact that so much of his excrement is lost on the road. The fattening hog is said to return about 87 per cent. of the nitrogen in its food in the excrements [Lawes and Gilbert], so that it makes a larger draft than the fattening ox does on the supply of nitrogen in the food.

II. We will next consider the form in which nitrogen exists in farm-yard manure. Observation and experiment show that with the exception of the sheep, the larger part of the nitrogen is contained in the solid parts of the excrements. In some cases, there is more than twice as much in the solid as in the liquid parts. In the solid excrements a great deal of nitrogen is contained in the undigested and insoluble nitrogenous material of the food, which passes through the intestinal canal undigested and unassimilated, and has to undergo a further change after it passes into the manure heap. The urine, on the other hand, represents a portion of the nitrogenous constituents of the food taken in, digested, and then eliminated by the kidneys; abounding in compounds of nitrogen, mostly in solution, and ready for the use of the plant as food, but liable to very rapid alteration, when exposed to the air, changing into the very perishable compounds of ammonia and nitric acid. It is a matter of great importance that all of the urine should be saved.

III. We consider next, the amount of nitrogen in farm-yard manure. From what has been said, the proportion must vary according to the character of the animals that make the manure, the richness of the food consumed, the kind and proportion of litter used, shelter, temperature, &c.

Professor Caldwell states, that in one instance where the excrements were carefully preserved for analysis, the manure of sixteen fattening oxen contained 0.98 per cent. of nitrogen; and the mixed

manure of forty milch cows and thirty-six head of young cattle, contained 0.41 per cent. of nitrogen. Horse and sheep manure is said to contain the same proportion of nitrogen as the manure of fattening oxen. An ordinary mixture of farm-yard manure may be considered to contain, in a fresh condition, about 0.45 per cent. of nitrogen. In a well regulated process of rotting manure very little nitrogen need escape; while the ligneous or woody matter of the litter, being decomposed into carbonic acid gas, which escapes, decreases the bulk very considerably. The process of the operation of rotting may be so conducted as that the product may be richer in nitrogen than the materials that yielded it, while a large proportion of the carbonaceous matters is oxidized and passes off as gaseous carbonic acid. The best authorities agree, that well-rotted manure is about one-fourth richer in nitrogen than manure which is unrotted, notwithstanding the great difference of opinion as to the methods of saving and applying manure to the land. The final products of the decomposition of all the nitrogenous compounds of the food of animals are ammonia and nitric acid and their compounds. The important thing to do, is to preserve these compounds in the manure for the plant. They may readily escape before they can be applied to the land. The changes of a chemical nature that take place in a well-regulated heap of rotting manure, are these: The urine undergoes very rapid change into ammonia, which, unless retained by the organic matter and moisture, escapes as carbonate of ammonia gas. The nitrogen contained in the solid excrement, made up of undecomposed nitrogenous matters, undigested by the animal, is not so liable to escape. If the action in the manure heap is rapid, the passage into ammonia will be rapid, and the loss will be apt to be considerable; but if the action be slow, the ammonia, gradually formed, will be converted into nitric acid, which, although very soluble and easily washed out, may yet be retained securely for the plant. In order to secure the latter object, the heap should be kept in compact mass, moist, and the too free access of air prevented. The question as to the solubility of the nitrogen in fresh and in rotted manure, as before stated, has not been definitely determined. But upon the analyses of Dr. Voelcker it is generally assumed, in England, that 100 pounds of well-rotted manure will contain about five pounds of soluble matter; one-fourth of a pound of which will be one pound of nitrogen.

IV. The next most important question is, the money value of the nitrogen in a ton of farm-yard manure. The estimates, be it understood, can only be approximate. The amount of nitrogen depends upon the extent to which it is present in the form of soluble compounds. At the rate of twenty-five cents a pound for the nitrogen contained in sulphate of ammonia, and in nitrate of soda or Chili saltpetre; the nitrogen in stable manure, of average quality, is considered to be worth sixteen cents a pound, or twenty cents a pound if the manure is well rotted. At these rates, a ton of well rotted stable manure would be worth about two dollars. Whatever may

be the theoretical value of a ton of stable manure, the fact remains, that there is no other manure that will pay better in the crop, and improve the land more permanently than it does practically.

V. The last consideration is, the best method of making the manure rich in nitrogen. This has been really answered in what we have said before; but to be more explicit we must have (1) the largest number possible of well fed, fattening animals in stalls, with sufficient litter [straw] to absorb all the liquid portion of the excrements. (2) When the manure is put into the pile or heap, it must be protected by a good shelter from rain, wind and sunlight, with moisture, air and warmth enough to keep up a *slow chemical action* or combustion, in order to carry it into a rotted condition. Sulphate of lime or plaster, in moderate quantity, sprinkled over the heaps every few days, cannot be otherwise than beneficial. Pure, dry clay and alluvial earth scattered over the heap, from time to time, will likewise serve to fix and hold the ammonia tending to escape. Besides these substances, I would use nothing else with the manure of the farm-yard. Ashes and lime carbonate, and even phosphate of lime tend to liberate the nitrogen in the form of gaseous ammonia and soluble nitrate of lime. The object of the farmer in saving farm-yard manure should be, *primarily, nitrogen*, with all the phosphoric acid and potash inherent in the material of the manure. If we undertake to accumulate all three of these valuable constituents, viz., nitrogen, phosphoric acid and potash, by the addition of substances containing them in the same compost heap, we run the risk of incurring chemical incompatibilities, which make many of the commercial fertilizers worthless.

From the experience I have had, I prefer to apply the pure ground bone, the dissolved bone and the superphosphate of lime, mixed with the potash, directly to the land, rather than compost them with the farm-yard manures, for the reasons given above—that they tend to liberate the ammonia. The question as to the cheapest form in which to purchase phosphoric acid, nitrogen and potash, is one of great importance to the farmer—whether in the form of manufactured compounds already mixed, or in the form of chemical substances yielding these valuable constituents, respectively, in definite proportions.

When phosphoric acid can be obtained at the rate of from 12 to 15 cents a pound in pure ground bone, strictly pure dissolved bone, and high grade superphosphates, and nitrogen can be obtained at the rate of from 25 down to 12 cents per pound in sulphate ammonia, nitrate of soda, rectified peruvian guano, dried blood, slaughter-house and fish refuse; when potash can be obtained at the rate of from 6 to 8 cents per pound in the form of muriate of potash, testing 80 per cent.; and when as much of the substances containing these important constituents can be transported in a barrel as in a ton of ordinary manufactured fertilizers, I contend that it will be a great saving to the farmer to purchase these chemical substances and mix them himself in the proportions to suit his land. In this way he

gets rid of all the *inert matters* contained in the ordinary fertilizers, saves the cost of freight and hauling, and uses substances of known value.

The cheapest forms of potash, freight considered, are muriate of potash, in bags, testing 80 to 87 per cent; sulphate of potash and 40 per cent actual potash; which forms I have generally applied at the rate of 100 pounds per acre, mixed with from one to two hundred pounds of bone, and from fifty to one hundred pounds nitrate of soda, mixed with alluvial earth broadcasted, and put in with double shovels, previous to the seeding of wheat, which is either drilled or broadcasted and harrowed in. Unleached wood ashes, from hard wood, are estimated to yield about 4 lbs. potash to the bushel.

Nitrate of potash is in such demand for the manufacture of gun-powder and fire-works generally that it is too costly for agricultural purposes.

In composting *stable manure*, plaster, alluvial earth [and, perhaps, pure ground bone] may be used with advantage; but I would not use the potash compounds in the heap, as they tend to liberate the ammonia. It would be better to apply the potash compounds in advance directly to the land, and harrow or double-shovel them in, and then follow with the compost. The carbonate and phosphate of lime may be used advantageously in composting large amounts of crude vegetable matter, which, changing into humus, combines with the lime, in which form it subsequently holds the ammonia that is evolved in the process; but in the more highly nitrogenous substances—as stable manure and farm-yard manure—the carbonates of the alkalies have to be used with considerable caution if it be an object to save and retain the ammonia in the compost.

Trusting that you will pardon the length of this communication, believe me,

Very respectfully, yours,

JNO. R. PAGE.

P. S.—The value of stable manure as a complete and direct plant feeder, is due to the phosphoric acid and potash, as well as nitrogen it contains in the organic material of which it is composed. The phosphoric acid and potash, like the nitrogen, is derived from the food consumed, except a small amount taken in the water drunk by the animal. As in the case of nitrogen, different proportions of these substances are withdrawn from the food, according to the circumstances indicated for that element. According to Professor Caldwell, an approximate estimate of the number of pounds of phosphoric acid and potash abstracted from the food in a year for each 1,000 pounds of live weight, in the stalls, in young cattle, milch cows and fattening oxen, gives about the following:

	<i>Phosphoric Acid.</i>	<i>Potash.</i>
Young Cattle.....	16.	2.
Milch Cows.....	5.	4.7
Fattening Oxen.....	4.5	1.5

Showing that the fattening oxen withdraw less from the food and leave a larger proportion to pass into the manure than milch cows and young cattle. In the process of rotting the manure, the phosphoric acid and potash suffer very little change, in respect to their forms of combination, if the manure is kept so as to prevent its soluble portion from being washed out. They do not form gaseous compounds in the heap like nitrogen, and are not apt to escape in that form. The chief loss of weight in manure in the process of rotting is by the loss of carbonic acid and water, along with which ammonia is also very liable to escape; but phosphoric acid and potash, as already stated, not being lost in this way, rotted manure will be richer than fresh manure in these substances.

Stable manure and farm manures generally are too variable in composition to attempt to give precise figures as to quantity and value of the phosphoric acid, potash and nitrogen. Professor Caldwell assumes that the following estimate will not be far out of the way: "Well rotted manure from well fed animals, if we assume that it contains 0.25 per cent. of phosphoric acid and 0.6 per cent. of potash, one-fifth of the phosphoric acid and two-fifths of the potash may be soluble in water. If soluble phosphoric acid is rated at 16 cents a pound, the mixture of soluble and insoluble acid in rotted manure may fairly be rated at 10 cents a pound; the potash may be valued at 6 cents. At these rates, the five pounds of phosphoric acid and the twelve pounds of potash in a ton of stable manure would be worth 50 and 72 cents respectively. The amount of nitrogen in a ton of well rotted manure has been estimated, at 20 cents per pound, to be worth \$2.00. A ton, then, valued for the nitrogen, phosphoric acid and potash would be worth about \$3.22." This is not perhaps an over-estimate if the manure is properly cared for. If our people would only consider this subject thoroughly, they could not fail to see the great importance of making greater efforts to convert all they can make in the form of mixed crops, into meat and manure. Let them remember, too, that fattening animals make the richest manure. Milch cows, young cattle and animals half fed yield poor manure, and much less profit.

Again, I ask pardon for inflicting such a lengthy article on you, and trust that you will give it the consideration of your mature experience and such corrections as your practical knowledge of the subject may suggest.

J. R. P.

DRAINAGE.—To drain a depression in a field where a clayey or hard pan subsoil prevents the sinking of rain water, and the lay of the land is unfavorable for ordinary methods of drainage, first dig a hole, as if for a well, through the impervious stratum at the bottom hollow, fill it up to the brim with refuse stones, remove the excavated earth so as to allow the surface water free access to the pit, and standing water will never injure the grass or grain crop in that part of the field.

[For the Southern Planter and Farmer.]

PEANUT SEASON FOR 1878.

The peanut season closes here 1st October. I make the product of the United States of crop of 1877-'78 :

Virginia.....	405,652	Bushels.
Tennessee.....	305,000	“
North Carolina.....	90,000	“
	<hr/>	
	800,652	“

The consumption of the United States has been :

Brought over from previous crop :

Tennessee.....	186,000	Bushels.
Virginia.....	100,000	“
North Carolina.....	40,000	“
Crop of 1877-1878 as above.....	800,000	“
	<hr/>	
	1,126,000	

And which is about the same as for years past since the war—the deficiency some years ago having been made up by importations of foreign, mainly from Africa, which now has entirely ceased.

The old crop and surplus of October 1st, 1877, has been entirely used up, and we begin this year with none to go over.

The estimated crop to come off will, no doubt, largely exceed last year. The season has been good and a largely increased area been cultivated. In 1876-1877, Virginia produced 780,000 bushels, and some think we will exceed it now. Therefore putting

Virginia at.....	800,000	Bushels.
Tennessee at.....	450,000	“
North Carolina at.....	90,000	“
	<hr/>	
	1,340,000	

There is a prospect of an ample supply for the next year. Dealers generally anticipate no trouble in handling this quantity, provided the trade is met fairly from the beginning, and undue speculation and withholding supplies during the winter months of largest consumption be avoided. With a large surplus in April, suspicion is always excited.

The trade only wants a fair working margin, and with low prices in every article, if no profit appears, they are let alone promptly, and something else substituted. The experience of the past three years more than justifies this opinion.

The opinion as to the present crop is, that in quality it will be very

good, excepting only any damage in curing from damp, foggy weather to cause mildew or dark nuts while in the shocks in the fields.

There are some nuts grown in California and other States, but they hardly enter into any estimate. California has not produced any beyond her own wants for some years.

Norfolk, Va.

THOS. B. ROWLAND.

BREADSTUFFS—THE PROBABLE REQUIREMENTS AND RESOURCES OF THE VARIOUS COUNTRIES.

We are indebted to the *New York Produce Exchange* for the following interesting information :

The French wheat crop of 1878 is placed by the *Bulletin des Halles* at 82,500,000 hectolitres, 2,838-1,000 bushels each, or 20,000,000 hectolitres less than an ordinary average crop, and it says, the general opinion is, therefore, as poor as that of 1873. The weight does not seem to exceed this year 74 kilos per hectolitres, which makes further deficit, and reduces the outturn of the crop to 61,000,000 quintals, of 220½ lbs. each, or 27,110,000 quarters. In regard to the probable resources during the present crop season, that journal gives the following. Germany is not included, as it only exports from one port what it imports in another :

	Imports required.	Presumed Surplus for export.
	Quarters.	Quarters.
France	6,900,000	.....
Russia .....	.....	6,200,000
Italy	1,030,000	.....
Great Britain	12,070,000	.....
Austro-Hungary .....	.....	2,250,000
Belgium	515,000	.....
Portugal	175,000	.....
Holland	620,000	.....
Denmark .....	.....	175,000
Sweden	70,000	.....
Switzerland	1,200,000	.....
Norway	103,000	.....
United States .....	.....	13,800,000
Algeria	175,000	.....
Sundries, including India .....	.....	700,000
Total, quarters	22,858,000	23,125,000
Equal, bushels	182,864,000	185,000,000

Remarks and exceptions we make to the foregoing as follows: The estimate of the probable surplus of the United States is placed by the *Bulletin des Halles* at 110,400,000 bushels, which is probable 10 million bushels less than the United States can supply of her surplus for Europe.

The Russian export has been as high as 72½ million bushels, and as low as 33 million bushels, with an average export for 12 years of about 49½ million bushels, or 6,187,500 quarters.

The French wheat crop in previous years since 1870, for which year there was no report on account of the Franco-German war, has been as follows :

Years.	Acreage.	Total Product. Qrs.	Consumption. Qrs.	Imp'ts.	Exp'rts.
1871.....	15871000	28762000	31163000	4930000	302000
1872.....	17144000	41435000	31231000	2809000	1864000
1873.....	16867000	28089000	30925000	4047000	1043000
1874.....	16774000	4552000	32542000	5562000	2775000
1875.....	17187000	34518000	*31465000	1072000	827000
1876.....	16410000	32021000	*31000000	1978000	1385000
Av. 6 yrs.	16742166	34224166	31387	3508000	2142000
Av. 10 yrs.					
1850-59..	15802400	30419100	27985100	1166730	928600
Av. 10 yrs.					
1860-69..	12056500	34041700	30949500	2406500	1662300

*Estimated.

The area under wheat in France in 1877 was 17,260,566 acres, and the crop was estimated at 34,350,000 quarters, or 274,800,000 bushels, but the quality of the crop was mediocre, and, although more in bushels than the crop of 1876, it made less bread than the smaller crop of 1876. The imports of wheat and flour into France in 1876-7, Sept. 1st to August 31st, were equal to 14,335,554 bushels, vs. exports, 6,955,261 bushels, giving net imports over exports, 7,380,293 bushels to supplement the crop of 1876. The imports for the corresponding period in 1877-8 were equal, in wheat and flour, to 26,658,920 bushels of wheat, vs. 3,698,425 exported, giving net imports 22,560,903 bushels.

The wheat crop of 1878 in France is estimated at 27,110,000 quarters, vs. 34,350,000 quarters for the crop of 1877, or 7,240,000 quarters less than the crop of 1877, which was 18,632,040 bushels more than the crop of 1876. The quality of the home crop in last two seasons has been inferior, but perhaps less so in 1878 than in 1877. France is bare of reserves of old wheat, and the imports of foreign wheat have gone quickly into consumption, leaving small stocks at the ports of import, except at Marseilles, where the stock at last report was less than two million bushels of inferior wheat imported from Southeastern Europe.

The net imports of wheat into France in 1877-8, Sept. 1st to August 31st, were 22,580,903 bushels, which were required to supplement the poor crop of 1877; and the crop of 1878, also poor, is 57,920,000 bushels less than the crop of 1877. It would seem from this that if the estimates of the crops of the two years are approximately correct, the requirements of foreign wheat in 1878-9, Sept. 1st to August 31st, would be the difference between the two crops, plus the amount required to supplement the crop of 1877.

WHEAT CROP IN GREAT BRITAIN—FARMERS' DELIVERIES.—

Rates of same per acre; imports; rates per acre for cereal years ending August 31st:

Cereal Years.	Areas. Acres.	Farmers Deli'ries. Qrs.	Rates per Acre, Bush.	Imports, Qrs.	Rates per Acre, Bush.
1875-6..3,	115,657	8,467,196	22	14,081,000	36
1876-7..3,	307,837	8,083,816	19½	13,321,000	36
1877-8..3,	372,590	7,923,220	19	14,416,000	34½

The returns for 1877-8 show a total supply, home and foreign together, of 22,339,000 qrs., but they do not represent the total consumption, which, for a population now estimated at 3,386,000 and a minimum consumption of 5½ bushels per capita, aggregates 23,280,000 qrs.

The out-turn of the wheat crop in 1878 in the United Kingdom is estimated at 11,800,000 qrs., being at the average of 28 bushels per acre. Deducting 800,000 quarters for seed, there are 11,000,000 quarters of home-grown wheat available for consumption. The estimated requirements of foreign for 1878-9 were 12 to 13 million quarters, by Mr. Thomas C. Scott.

The exports of wheat from Egypt for the six years from 1872 to 1877, inclusive, have been 16,015,060 bushels, or an average of 2,669,177 bushels, with a minimum of 90,480 bushels in 1872, and a maximum of 4,697,680 bushels in 1876. The average exports of wheat from Egypt for the ten years from 1867 to 1876 were 3,068,960 bushels, or 383,620 qrs., and in 1877 were 354,021 quarters.

The exports of wheat and flour from Australia from 1874 to 1877, inclusive, were 582,725 tons, including 195,782 tons to the United Kingdom, and the remainder to the neighboring colonies, or an average to Europe of 48,945 tons, with a maximum in 1876 of 101,490 tons, and a minimum in 1877 of 7,305 tons.

The exports of wheat from British India from 1872-3 to 1877-8, crop years April to April, have been 17,507,230 cwts., or an average of 2,917,872 cwts., with a minimum in 1872-3 of 394,010 cwts. and a maximum in 1877-8 of 6,206,069 cwts.

The United States will probably have a surplus of 120 million bushels of wheat from the crop of 1878 available for export to Europe.

The exports from Chili for Europe for the crop years Sept. 1st to August 31 have been 1,312,716 cwts. of wheat in 1875-6, vs. 705,402 cwts. in 1876-7 and 182,596 cwts. in 1877-8.

Austro-Hungary is expected to have an export surplus of wheat from the crop of 1878 of 2,000,000 to 2,500,000 quarters, or 16,000,000 to 20,000,000 bushels.

Switzerland, it is estimated, will require to import during the cereal year from September 1, 1878, to August 31, 1879, six million bushels of wheat.

Belgium and Holland will probably require to import more than

1,135,000 qrs., or 9,080,000 bushels of wheat, as will be indicated by the average imports of the last ten years.

Turkey is not mentioned as a source of wheat supply. That country exported to France 963,510 qrs. of wheat in 1876 and 510,734 qrs. in 1877; besides which Great Britain received from Turkey 1,885,193 cwts. of wheat in 1875-6, 1,262,173 cwts. in 1877, and 257,914 cwts. of wheat in 1877-8.

The exports of wheat and wheat flour from Atlantic and Pacific ports since July 1, 1878, have been equal to 50,356,239 bushels of wheat, vs. 18,398,647 bushels for the corresponding period in 1877.

DR. STOCKBRIDGE ON THE PRINCIPLES OF FERTILIZATION.

It has been the stern necessity for fertilization, and this alone, which has resulted in investigations for discovering the principles upon which it rests. Therefore, only in those countries where the impending results of decreased soil production have caused alarm has serious attention been given to the subject of the "principles of fertilization." Under such conditions the investigations have generally been empirical rather than philosophical; the search has been for expedients of practical local application rather than for principles of universal force and influence. The former method has hitherto been most successful, and by it the soils of China, though having been dropped for thousands of years, are still maintained in the highest state of fertility. In Europe empiricism has had its day and its labored results.

American agriculture of the past and present is little better than a studied system of land plunder and devastation. From the time of the first cultivation of American soils down to the present each succeeding generation of agriculturists has travelled westward seeking new fields to destroy. Though our large area of unoccupied land waiting to be despoiled may supply our wants, even by the present system, for many years, the inexorable law of nature will at no distant day work out its results, which are already foreshadowed in all the Atlantic States. The soils of New England, of the Middle and most of the Southern States are sterile compared with their original productiveness. The cattle which once grazed on our hillsides have disappeared, because the sweet nutritious herbage of early days has given place to the poorer grasses, breaks and brambles. Where two acres formerly furnished summer feed for a cow, ten acres now give her scanty substance. The Carolina farmer must traverse the detailed round of cultivation for the sake of harvesting an average crop of nine bushels of wheat or fifteen bushels of corn per acre; and the average yield of hay on our whole area in grass meadow is but a ton per acre. The so called land of exhaustless fertility is constantly receding Westward, and East of it there is always a vast

territory of comparatively exhausted soil. Notwithstanding the wide differences of soil characteristics in different sections of the country, notwithstanding our great climatic differences, like causes in our system of culture will everywhere, with unflinching certainty, produce the same results. What that system has already accomplished on both slopes of the Appalachian range it will repeat on the virgin soil of the Western prairies, on the valleys of the Upper Missouri, the Platte and the Red River of the North.

All the power of our National and State governments; all the intelligence and energy of our commercial effort, and improvements of mechanic arts as applied to the farm, are in combined action to hasten the catastrophe.

If this very slight sketch of the present and prospective condition of our farm lands is not overdrawn, fertilization is a necessity; in the East to recover what is already lost, in the West to prevent an impending calamity.

WHAT ARE FERTILE AND WHAT ARE STERILE SOILS.

Though the deplorable condition of our soils has been produced by artificial means, it is clearly the result of the action of natural law; for fertility and sterility are both nature's work. But what, so far as the soil is concerned, is fertility? and what is sterility? Fundamental to these questions are the questions, what are crops? and in obedience to what law are they formed in the case of fertility? and what is the law which prevents their growth in the case of sterility.

Though these questions have often been ably answered, we shall attempt to answer some of them from our own stand-point and in our own manner. Crops, whatever their kind or variety, are organisms, endowed with life; growing or enlarging by additions, to the several parts of the structure, of various materials, in kind, quantity and proportion according to the laws of their nature; of the dry weight of this material about 95 per cent. from the soil. Every substance in nature will not form food for the animal, and no substance will supply nourishment or support life until it has been digested and assimilated; this is equally true of the plant. The soil is the store-house of a certain portion of the food of plants, but even the comparatively few soil elements which enter into their structure must be radically changed before they become properly plant food and can be taken up and assimilated, and in this fact lies the difference between fertility and sterility. However abundant the elements of nutrition may be in a soil, that soil is sterile until these elements have, by chemical action, been converted into a soluble form and thus become immediate plant-food, and as soon as this change takes place the soil becomes fertile.

By continual cropping and renewal of the crops the available plant-food becomes exhausted and the soil becomes sterile. There must be an annual deficiency of food so long as cropping continues, caused by the fact that the natural power of the plant to gather and use the prepared food is greater than the power of nature to develop the

material. For this annual deficiency between natural demand and unnatural supply, the farmer must provide, if he would maintain the fertility of his soil or harvest abundant crops. A critical examination of the plant itself will alone inform us what are the materials which, incorporated and removed from the soil by the plant, leave the soil sterile. We must also ascertain the method by which these materials are prepared from the crude soil mass, that we may be able to aid or retard the process at will.

AERIAL AND ASH CONSTITUENTS OF PLANTS.

By separating our plants into their constituent parts by means of fire we ascertain that they are all composed of two distinct classes of material—that which came from the air, the aerial, and that which was taken from the soil, the ash; and all plants contain both classes, though the proportions vary greatly according to the nature or variety of the plant. There is, therefore, a law of composition as rigid as the law of specific form and quality. In the ash of plants we find in all but eight or nine elements, and of these but four are found in our ordinary agricultural plants in any considerable quantity. Any element found in a plant in its normal condition, however small the quantity, is a necessary constituent of that plant; and all elements not needed in the plant by the law of its composition are rejected.

The aerial portion of plants consists of but four elements, and each has its specific use. These elements which we have found formed all our agricultural plants are: Silica, lime, potash, magnesia, soda, phosphoric acid, sulphuric acid and chlorine found in the ash; and carbon, oxygen, hydrogen and nitrogen composing the aerial portion. However small the quantity of either of these elements entering into the composition of a plant, it is essential. The leading elements in quantity are as follows: Carbon, nitrogen, potash, phosphoric acid, lime and magnesia.

With rare exceptions, the ash constituents are found in all soils, either free or in some of their many combinations, and the organic elements always surround the plant, both in the soil and air; but the fact that these elements exist everywhere is not sufficient, for plants do not feed on crude materials. Green crops or yard manure, as such, cannot increase the growth of crops; this is done by the various named elements after their elimination from their crude compounds. The feeding organs of plants are the fibrous rootlets and the leaves; through their delicate pores nothing crude, not even the elements as such, can enter. Plants can receive their food only in a liquid or gaseous form.

I have thus far stated what I believe to be the process and natural law of the growth of our crops, the only material they use and the only form in which it is available, the manner in which it is gathered and disposed of; and I wish now to speak of the specific work and duty of the farmer as a director of the process. The farmer's portion of the work is physical; nature's is chemical. He has at his

disposal air, sunlight, water, the crude soil and various gross compounds. These contain the elements of plant-food and his duty is to aid nature in their elimination. The soil consists of two classes of materials—particles of rock, containing the elements of plant growth, and carbonaceous substances, the *débris* of former crops of plants.

BARN-YARD MANURE VERSUS COMMERCIAL FERTILIZERS.

The air and its gases are the primal agents for producing the requisite changes in the soil particles; insoluble silicates are converted into soluble carbonates, nitrates and sulphates, producing actual plant-food. Whatever aid the farmer may render the forces of nature in preparing food from the crude elements of the soil, the plants will consume the material faster than these forces can supply it. If, therefore, he would maintain the fertility or crop-producing power of the soil, he must supply this deficiency by the application of bulky material, in which food can be produced for plants faster than it can be in the soil or of the elements themselves in an available condition. The former method should be first resorted to because to it belong the manures of the farm, the refuse of former crops; and, of course, contain only those elements of fertility found in the crops of which they are composed, a very small portion of the bulk of the substance.

Nature is a ceaseless worker, and each year produces from the crude soil a certain amount of plant-food, so that if the farmer annually returns to the field the refuse of the crop produced on it, it will continue to increase in fertility. But this is frequently impossible; for a large proportion of the crops and animals grown must be removed for the support of those not producing their food by labor on the land, and this portion is lost to the farm.

We must, therefore, resort to the second method, and apply the prepared material directly to the land.

The question here arises, Is it not necessary to apply all the elements of nutrition, as they are all essential to the proper growth of the plant? It has been proved beyond the possibility of a doubt, that of the four organic elements entering into the structure of crops only one, nitrogen, will ever need to be applied to the plant, for the others exist in a free and obtainable condition in boundless quantities throughout all nature. It is likewise proved that with rare exceptions our soils will manufacture, with sufficient rapidity for all the needs of the crop, all the inorganic elements, with the exception of potash and phosphoric acid; therefore, as an almost absolute rule, the three elements, nitrogen, potash and phosphoric acid, are the only ones which need to be applied for the production of perfect plants. The exceptions to this rule are in each case governed by the law of the composition of special plants and are themselves reducible to rule.

It must be distinctly understood that only three elements of nutrition need be applied to plants, not because they are indifferent to the presence of the others, but that nature can be depended on to supply them in abundance.

Let us now make direct application to these principles—using farm-yard manure as our standard and illustration, because it is the farmer's standard fertilizer, by which he measures the value of every other article offered for the same purpose. It is the best substance known for fertilizing crops, in that it will eventually furnish all the elements needed in their structure. But it is faulty as the food of plants—first, because it cannot afford nutrition until its elements are liberated from their compounds; second, or it cannot be changed in its composition: it is not an economical manure, as it has no special adaptation except for the crop from which it was produced; third, because of its bulk and weight it is costly to transport and mingle with the soil; and fourth, there is not and cannot be enough of it produced to meet the elements.

Besides this substance, yard manure, we will compare the three elements, nitrogen, potash, and phosphoric acid, in immediately available form, and in reserve any other element required to meet the exception to the general rule named. If our premises are correct, the best fertilizer for any given crop is one composed of these three elements in proportion as they are contained in that crop. But even though the elements in manure were available, it could be perfect for but one crop, while the elements can be made a practical perfect manure for every crop.

Again, chemicals are better than manure because they may be more cheaply transported, handled, carried to distant parts of the farm and thoroughly mixed with the soil. They are better than yard manure, because they not only enable us to grow as abundant crops with less labor, but their supply can equal any demand. They also enable the farmer to continually crop his land, sell the crops, and yet maintain the fertility of his soil.

Scientific experimenters have long known that certain chemical elements would produce perfect plants without the aid of those matters which are commonly supposed to belong to soils and manures; but these gentlemen have failed to direct the attention of the agricultural community to the fact in such a manner that they have realized that it might be turned to great practical account in farming. The condition is desperate in Massachusetts; the entire amount of yard manure made gives but six-tenths of a cord to each acre of tilled land. But I believe that in the elucidation, reduction to practice and adoption of the principles of special chemical fertilizers, there are bright hopes for our future agriculture.

The want of the hour is the breaking down of all barriers between practical and scientific men; the farmer should learn that the growth of plants is not an accident, but the result of active, changeless law; the latter should learn that science to be valuable must be useful; that if it would win acceptance with farmers, its conquests must not only be in naturally arranged theories and in the laboratory, but in battling with sterility in the open field.

This paper elicited remarks from several members of the club and was very generally commended. In reply to a question asked as to

how a farmer unacquainted with chemistry and having only such knowledge of his soil and the requirements of growing plants as can be arrived at outside of books, shall select the proper fertilizers, Professor Stockbridge said that when he knew the vender to be trustworthy, to depend on him for a compound and test it; otherwise, purchase the required elements in simple form and compound them at home and test them.

TOBACCO.—There is a little item in the history of tobacco that will be fresh to a good many old smokers and chewers among the tribe of gardeners: "Tobacco was brought to England in 1560. Jean Nicot, the French Ambassador in Portugal, received it from Fleming, who came from Florida, and it was he who offered the first example to Catherine de Medicis, the Queen took a fancy to tobacco, the Court followed her example, and the plant, which had been formerly called Nicotina, from the name of Nicot, was named *Herbe de la Reine*, and became celebrated as a panacea. The taste for tobacco became so general that Kings were alarmed at it; James I., King of England, in 1619, launched a pamphlet against the use of tobacco. Pope Urban VIII., in 1624, fulminated a special bull against it, and in all the churches the beadles were authorized to take possession of the tobacco boxes which they found in the hands of the faithful."

CURING CLOVER HAY.—My plan is to start the mower at 2 or 3 o'clock in the afternoon, after all water has evaporated, and the heat of the day is past. Rain or dew will make clover hay black if it is cured before it (the rain or dew) falls upon it. By cutting in the after part of the day the clover does not cure enough to damage, and as dew is only on the top of the hay it soon dries off. Clover don't want much sun; if it gets too much the leaves rattle off, and you have stems. By 10 o'clock start the rake; and by 2 or 3 o'clock set the men to putting it up into cocks. Don't let it stand two or three days, but turn it out the next day if the weather is good, and haul it in. It only wants to remain in the cock long enough to get hot, and when it is opened and aired it is ready to be housed. Apply a little salt while unloading, say sow as you would grain, about twice over the stack or mow, while the load is being taken off. Don't get worried if it heats some after it is put away; it will come out bright and sweet in the spring. Stock prefer well cured clover hay to the best gilt-edged timothy, and it ought to be the best judge in such matters. Poor clover is the worst of feed. The great secret in making good clover hay is to keep it free from moisture, except its own—while mould don't damage it much.—*Con. Rural Sun.*

The San Francisco Bulletin asserts that the prospects of beet culture in the State are exceedingly promising, and with the decline of cane-sugar manufactured in the Southern States, it is not improbable that it will ultimately be the source of supply of a large portion of the sugar consumed in the United States. The venture of the Alvarado Company has proved eminently successful, and the farmers of the locality have discovered that it is possible to raise a very fair crop of beets when wheat from excessive moisture or drought has entirely failed.

[For the Southern Planter and Farmer.]

HOW TO RID WHEAT OF WILD ONIONS.

Having discovered recently that the wild onion, or garlic, which is so objectionable in many sections of Virginia and elsewhere, in the wheat crop, may be gotten rid of by a very simple process, I have thought proper, for the benefit of farmers, to communicate to you the manner of so doing, and to explain how it was effected.

In the month of July, my wheat was threshed by a steam thresher, and the wheat immediately removed to a room, where it remained until the early part of this month, when it was fanned out and sent to the mill. The portion of the crop I refer to was largely mixed with the onion, and was kept separate from the balance of my crop, which was less affected; in fact, I thought it would impair the value of the grain very much, either for sale or grinding, as I experienced last year in some flour the evils of having garlic-flavored flour. In a very few days after the wheat was put in bulk from the machine the smell of the garlic was exceedingly offensive, which I afterwards ascertained was due to the fermentation of the juices of the onion sweat, which resulted in the destruction of them except where they were on the surface of the bulk of wheat, and were not kept sufficiently from the air to undergo the sweat necessary to their destruction.

My attention was called to the examination of the facts which led to the destruction by finding the wheat so entirely rid of garlic odor when it was fanned. After the sweating process, all you find of the garlic is the apparently undestroyed hull of the onion, but when pressed between the fingers you find the body of it and the scent all gone.

Albemarle Co., Va.

T. A. MICHIE.

[For the Southern Planter and Farmer.]

QUERY.—A lady subscriber wishes to know if cotton lots, in a high state of cultivation, yielding from one to one and a-half bale per acre, will depreciate if cultivated in corn *only*. Let rest every other year and manured highly. I will be very much obliged to some of the experienced farmer contributors to the *Planter and Farmer* for this information.

Southampton Co., Va.

H. P. P.

Ashes Around Fruit Trees.—Ashes scattered around fruit trees and lightly worked into the soil, will produce a remarkably beneficial effect. Potash is an important element in fruit of all kinds and can easily be applied in the form of ashes. These therefore should, on no account, be wasted. We know a farmer who would save every stick he could find in the forest, roadside, river bank and elsewhere, in order to make ashes for his orange trees. He was well repaid for his trouble.—*Exchange.*

Stock Department.

CONDUCTED BY DR. M. G. ELLZEY, AGRICULTURAL AND MECHANICAL COLLEGE, BLACKSBURG, VIRGINIA.

OUR POSITION ON THE VALUATION OF FERTILIZERS.

If our readers please, we have no intention of making ourselves ridiculous by entering upon a war of words with Col. John Washington, or anybody else. We have other matters to do besides answering tirade with tirade "*vox et preterea nihil*"—as it were, the blowing of the idle wind. In Col. Washington's article, in the last *Planter and Farmer*, there is no attempt made to answer anything we have brought forward, nor can we be expected to re-state what we write as often as anybody chooses to misunderstand and misstate our position. Col. Washington attempts to show that we, a professional chemist, were entirely ignorant of the simplest facts, in connection with analysis, until he, a lawyer, as we understand, took us in hand. The extracts he makes from our writings to show that we thought, before we learned better of him, that "chemistry won't analyze a manure" have no such meaning, and we will not waste words about it. The Colonel accuses us of treating with lofty scorn the State chemists of Virginia, North Carolina, Georgia, and other States and telling them they do not understand their business. We have written nothing of that sort anywhere, and what would the Colonel have to say if one of the very gentlemen named by him, and whom he gratuitously undertakes to defend from our lofty disdain, had himself been applied to, to answer what we had written and declined to do so on the ground that he held the same opinions himself? Dr. Pendleton, late Professor of Agriculture, scientific and experimental, of the University of Georgia, has written and read before the Agricultural Society of his State a paper exhaustive of the whole question, which leaves little to be said on our side, with less on the other, and to that paper appearing in our Department with a note by ourselves, we ask the attention of our readers. As to the man of straw and the windmills, if Col. Washington is satisfied, we are satisfied.

About orchard grass—we learned our "first lesson" thirty odd years ago of our own father, and we have been abundantly familiar with it and its culture ever since. We have been to the farm to which Col. Washington referred us near Blacksburg, but not at Saltville, which is one hundred and one miles away. We there found several fields formerly seeded with Western seed along with wheat in the fall, where it had failed to

catch, as any seed will do very generally if put in in that way; we put our friend on his guard about that, telling him what we learned thirty odd years ago, that it does much better with oats in spring. Our friend altered his practice accordingly and has not failed since. On his place now are three good stands, one of seed from Col. Washington at \$2.50, one from seed saved in Montgomery county by a Dunkard farmer at \$1.50, and one from Western seed, the latest, at \$1.50. We will go no further than to say that the stand from the Western seed is manifestly much the best of the three, and we refer Col. Washington back to his own authority. We will close by asking one question: If we have written of pauper immigration, and wild cat money, and repudiation, and other of the vagaries of Dennis Kearnyism, as now prevailing in Virginia, in a manner so out of accord with the views of Col. Washington that he feels compelled to say we have written of these things arrogantly and ignorantly, what has that to do with the analysis and valuation of manures?

THE SOUTHDOWN SHEEP.

There is in England a range of chalk hills known there as the Southdowns. The high and dry and rather thin pastures of that district have been occupied, since a very remote period, by a black-faced breed of sheep—small, hardy and prolific, and furnishing mutton superior to that of any other sheep. From sixty to seventy years ago, the average weight of the fleece of these sheep was not above three pounds, and the gross weight of the animal between eighty and one-hundred pounds. Within that period they have been wonderfully improved. Mr. Ellman, Mr. Webb, and, more recently, Lord Walsingham, have brought the breed to a high state of perfection. The weight of the fleece has been doubled, and from thirty to fifty pounds added to the weight of the animal; their hardiness is well preserved, and their aptitude to fatten, always remarkable, has been carried to the very highest point. Now all this has been accomplished without the infusion of any foreign blood, and none of the English breeds bears any comparison to the Southdowns in fixedness of type, or distinctness of character as a breed; nor, as we might anticipate, is any of them comparable to this breed in prepotency in their crosses upon other type. The modern Southdown, as bred by Lord Walsingham, who has as is admitted on all hands brought them to the highest point of perfection attained by any breeder, is an animal of remarkable beauty and symmetry in all its outlines—well-wooled, small-boned, and carrying thick flesh in the prime parts—the fat and lean well marbled; The offal reduced to a minimum proportion, and the mutton of a flavor unapproached by any other sheep. There is perhaps no need that we should write out a description of an animal so well known as the South-

down; we will rather point out some of the changes in style. We have already adverted to the great increase in the weight of the sheep and of the fleece, accompanied by a decrease in the ratio of the waste and offal parts. We find the leg shorter and finer than twenty-five years ago; the rib much better arched out on each side of the spine, greater lung-room corresponding to and indicative of better feeding qualities. The head is smaller and shorter, the forehead well woolled over between the ears, and the wool extending close up along the lower jaw, nearly to the chin. The old black-mottled color of the face and legs is changed to a light brown for the legs and a smoky French grey color for the face. The place which among horses is occupied by the Arabian and his congeners of the Oriental type, is, among sheep, held by the Southdowns. We learn from a gentleman of England, among the first connected with the shipments of live-stock from Canada to that country, and still engaged in the business, that the sheep now most enquired for in the English markets is one of about one-hundred pounds gross, and *not too fat*. He represents that the heavy, coarse sheep loaded with outside fat, turnip and oil fat, are no longer saleable in their markets, when sheep of the kind mentioned are to be had. Good, native Virginia ewes, with one or two Southdown crosses, fills that gentleman's idea of a mutton precisely. Southdown bucks are cheap. A word to the wise is sufficient.

BLOOD—WHAT IS IT?

What do you mean by blood? Blood? Why blood is the nutritive fluid of animals intended by nature to supply material of growth and development and for the renewal of life in the tissues. How then do you make sense when you say that an animal possesses half the blood of its sire, one-fourth of its grand sire, &c.? You don't make sense at all, and the idea you have in your own mind and which the word blood, as you use it, conveys to others, is of the vaguest. The young animal's blood is its own: it made every particle of it out of its own food. It has no more one-half its blood from its sire and half from its dam than it has half the hairs on its spine from each parent. What do we actually mean when we say that a sheep is a half-blooded Cotswold? We mean simply that one of its parents was of that breed. What do we mean when we say of a horse he has one thirty-second part of the blood of imported Messenger? We mean that he is the fifth in descent from that great animal through either the male or female line of his ancestry, and we mean nothing more. Now the physiological forces or tendencies which have controlled the organization of this horse may have been transmitted to him from Messenger through the four intervening ancestors in precisely the proportion indicated by our common mode of stating the case, viz: one thirty-second part of those forces may have descended from Messenger,

on the other hand these forces may have descended through the intervening organisms without modification, or they may have been completely overpowered and neutralized by countervailing forces or tendencies encountered in the intervening organisms. If we do not mean that it is to be taken for granted that precisely one thirty-second part of the aggregate result of the individuality of the native horse is due to the transmitted influence of imported Messenger, when we say he has in his veins one thirty-second part of the blood of the great father of all such as do trot, then our talk is nothing but mumbo-jumbo and means nothing but what might be much more simply stated, that the animal before us is fifth in descent from imported Messenger. But we say an animal has half the blood of its sire and half of its dam; very well then, that accounts for all the blood; now what sense is there in saying the same animal has one-fourth the blood of its grand-sire and one-fourth of its grand-dam? We have before us a heifer, whose dam was one of those nondescripts we call a scrub and whose sire was a Devon bull, now, when we say that is a half blooded Devon, what do we mean? If we mean to convey the idea that it is exactly intermediate between the Devon and the scrub in its organization, there is no evidence of the truth of that statement, but on the contrary, as far as we are able to know or to judge, the characteristics of the Devon greatly predominate in the so called half-blood. The truth is, that so far from their being any mathematical precision as our nomenclature implies, the real result is always in the highest degree problematical in every special case. Practically, in making crosses between two breeds or races, we always encounter race prepotency and in coupling sire and dam individual prepotency; The influence of which prepotencies we can in no case precisely estimate or measure before or after the fact. Suppose we have two horses fifth in descent through the male line from Messenger, each of these animals are said to have one thirty-second of the blood of Messenger, and we conclude that each stands in precisely the same relationship to their common ancestor, but in one case the characteristics of Messenger have descended through a line of prepotent sires; in the other it may be through a line all the individuals in which was utterly lacking in that power. In the one case the five prepotent sires have preserved, nay, possibly intensified the characteristics of the great ancestor; in the other case, the resistance offered to the transmission by the five prepotent dams has annihilated every trace of the influence of the "old horse." It is certainly convenient and concise to say a calf for instance is one-half one-fourth or one-eighth Jersey, but if we seek to convey thereby any thing more than the degree of relationship, we shall enter upon the region of very doubtful speculation. To take a practical view of the subject, it is certain that no definite rules can be laid down by which we can determine

in any given case what is to be the perpetuity of the influence of any outcross from any breed or family of animals; but there is much experience leaving a tendency to establish that in a great majority of cases five pure crosses will obliterate all traces and effects of an outcross; the meaning of which is, that an ancestor more than five generations remote, has ordinarily no influence upon the characteristics of any given animal. It is a notorious fact that many of the most celebrated animals of various breeds have been short pedigrees. We believe that any sire in the ancestral line nearer than the fifth has, under all ordinary circumstances, more influence in the make-up of any animal than all more remote than the fifth put together; that is to say, in estimating the value of the pedigree, more importance is to be attached to each of the ancestors named nearer than the fifth degree than to all named or possible to be named beyond that, yet with a determined perversity which is beyond all criticism. The Shorthorn breeders give to the bottom cross in the pedigree more consequence than the top cross, even if there be twenty intervening. This mania, or rather this job, has put an exaggerated and ridiculous value upon the so called fashionable families of these cattle undoubtedly to the great detriment of the breed. We are firmly convinced that seven pure crosses at the outside ought to admit any animal into the Herd-Books and Registers. This law would be founded on a law of nature and would therefore be wise and right. The opposition to it is at war with nature and therefore unwise and hurtful. So great an authority as Blackstone has declared that even civil laws can have no validity or rightful effect unless they are in accord with, and founded upon the laws of nature.

PROF. GOESSMANN ON FERTILIZERS.

From a friend, Professor of Agricultural Science in the college of a neighboring State, we have a letter, for which we are much indebted, referring to our position on fertilizer valuations. He calls our attention to the Fifth Annual Report Massachusetts Agricultural College, 1875, wherein he says Mr. Goessmann substantiates our position as to the impossibility of valuing nitrogen by analysis. Prof. G. says: "Our dealers have not yet been seriously asked to recognize the great difference in value between nitrogen in the form of ammonia compounds, guano, meat, blood, fish pulp, &c., and that in the form of hair, horn, woolen refuse, leather scraps, &c., although in the latter case it is hardly worth one-half the amount of that in the former." Now, let us refer to page 11 of Dr. Ledoux's Report of May 31st, 1878. "I admit further," says Dr. L., "that to determine whether all the ingredients in any one fertilizer are or are not obtained from the very best material, would in many cases take more time than a chemist could command." Prof. Goessmann

says it cannot be done, and asks, as State Inspector of Manures, to have the law amended so as to require the manufacturer to state the source of his nitrogen. Dr. Ledoux further says: "While we give the first-class manure its full commercial value, doing it no injustice, we give the second or inferior one a value somewhat above its real worth. This, I candidly admit, is unfortunate," &c. Dr. Voelcker says analysis affords data sufficient to determine "about how much ought to be paid for a fertilizer?" Now, the point is, What does Dr. Ledoux mean by "some-what?" and what does Dr. Voelcker mean by "about?" Professor Goessmann says the value of the inferior is less than one-half the value of the good, and the mistake made by the Station, causes the farmer to think, in so far as he trusts the estimate, that he has gotten his nitrogen, the most costly and useful of all the materials in these manures, at exactly what he ought to pay for it, when Prof. Goessmann says he has paid more than twice what it ought to be valued at. This is, indeed, "unfortunate," and the effect of it is to encourage manufacturers to seek cheap and worthless sources of nitrogen, and to keep them to palm it off on the farmers at more than double what it is worth, thereby driving out of the market the really valuable materials which furnish nitrogen, and driving honest dealers out of the field in favor of sharpers. If we overstate the case, will some one point out wherein we overstate it? If the State will follow Dr. Ledoux, and "candidly admit" that all tinkering on its part with private business is "unfortunate," we shall get on better thenceforward. But, we suppose, there are some who still believe we ought to have usury laws for the defence of borrowers, not knowing that they are only making the terms harder than before for those whom they are seeking to protect. If "meddlesome midwifery is bad," meddlesome State-craft is worse. Professor Mallet has stated the matter briefly thus: "Gross frauds may be detected, but exact valuation is a delusion." Now, it is easy to frame a law so as to make the detection of gross frauds in commercial manures so dangerous nobody will attempt them. The idea of exact valuation is obliged to be abandoned, and they who have advocated it may as well give it up. Facts are the sharpest kind of pricks; they cannot be kicked against without somebody being hurt.

THAT most excellent and ably edited paper, the *Lynchburg News*, has reduced its subscription price on its daily, tri-weekly and weekly issues. The *News* is especially and deservedly influential and popular, and we are glad to think increasingly so in the Southwest. Its market reports are considered by stock men especially accurate and valuable. This is no mere advertising puff, which we are in no way called upon to write, but is a voluntary tribute to a journal we always receive and read with pleasure.

ITEMS.

THE active demand for young bulls is a noticeable feature of the Western stock sales. The farmers of that section mean to be ready for any demand of high class beef to go abroad as that trade continues to increase in volume. It behooves the people who own the grass lands of Virginia to move in the same direction. Young Shorthorn bulls, well bred and of superior quality, are offered for sale very cheap and in large numbers by the various well known breeders of the State; whereas for lighter lands the Devons are better. It will be very unwise for farmers who raise cattle at all not to have improved sorts, which can be accomplished without any great outlay, by purchasing thoroughbred bulls. One great drawback to the sale of these animals is the high cost of transportation, usually about 30 per cent. added to the cost of the animal. This is very unwise on the part of the railroads. Any distance within 100 miles the animals may be driven home at less than half the cost by railroad. The companies stand greatly in their own light about this. The freights are certainly unreasonable. We were charged \$11.50 on a calf from Christiansburg to Culpeper, and \$7.50 on two small pigs about the same distance. Such charges are clearly out of all reason and operate greatly to the prejudice of the business of breeding improved stock, and the general improvement of the stock of the State. We hope the managers of the roads will see the wisdom of lowering these charges. Some enlightened graziers have found it paid them to give away thoroughbred bulls. Railroads, we are satisfied, would find it to pay them in many cases to carry them free into new neighborhoods along their lines. Certainly they could afford to carry improved stock of all sorts for about one-fifth what they now charge. It costs about thirty dollars to carry a 1400 pound steer from Wytheville to England, and \$11.50 to carry a 400 pound calf from Christiansburg to Culpeper. It costs only twenty-five cents more to carry a steer from Chicago to Fauquier than from Wytheville to Fauquier. It costs eight dollars to send a Southdown buck from Christiansburg to Baltimore. A State which pays eleven millions taxes, and such transportation charges as this, need not expect to prosper. It cannot be doubted that the railroads themselves, instead of contributing to the general prosperity, tend to crush enterprise and drive off immigration, and thus to ruin their own business. When business revives, we hope and expect to see the narrow guage system greatly extended, so as to establish competition for local freights and greatly reduce the charges. We are not now making war on the railroads in any captious spirit, but criticizing their policy without ill feeling towards them. We do not believe in legislative interference with their business. We believe in limiting the functions of that

honorable body to the utmost. But we appeal to these companies to be more liberal in their policy, in the confident belief that they, themselves, will reap a rich harvest in so doing.

FROM papers before us, extracted from the Reports of the Agricultural Society of South Carolina, we learn that the fine ground South Carolina rock acts as well as the so-called soluble phosphoric acid in the field on wheat and oats. It has been held that this rock must be treated by sulphuric acid before it becomes "available" in the soil. The papers before us show that the facts are otherwise. Let it be remembered that in this rock the phosphate is in its most insoluble form. We have held that solubility and availability to plants were far from synonymous terms. The experiments of Dr. St. Julian Ravenel, the distinguished chemist of South Carolina, place this fact beyond doubt. Mr. Lawes, the great English experimenter, after forty years of experiments with all sorts of phosphates, "has nothing definite to offer concerning the difference in value between the so-called soluble and insoluble phosphates." What, now, becomes of Dr. Voelcker's statement that only chemistry is able to tell whether a manure is good or worthless, and to show the comparative values of different manures?

The wise will hereafter "set less store by" superphosphates or soluble phosphates, and pay less to have the chemist tell all about differences in value where none exist. We have also the following from the editor of the *North Carolina Farmer*: "It is a principle of political economy that articles of necessity to the farmer should be exempt from taxation or taxed very lightly. Therefore, the heavy tax imposed by our last General Assembly, on the manufacture of fertilizers, is an unjust burden upon agriculture, for the farmer being the consumer, pays it by *this indirect tax*." Let our readers be good enough to make a note of this—commercial superphosphates of the best class contain about twenty-five per cent. of the soluble phosphate of lime. In other words, you must buy four tons of superphosphate to get one ton of biphosphate of lime, and three tons of the sulphate of lime or plaster, which can be bought ground at from seven to eight dollars per ton, of the best quality. Now, the four tons of superphosphate will cost the farmer say \$175.00 taking off three tons of plaster at \$25.00 leaves \$150.00 per ton for biphosphate of lime. This is a high grade case; a low grade case would be far worse. These, it would seem, thus cost not less than an average of five times more than they are worth. Whereas, the so-called insoluble phosphates are being demonstrated to be highly efficient manures when finely ground, and they may be had, if equal quantities of phosphoric acid are considered, at one-fourth the price. There is no necessity for treating ground bones with sulphuric acid to hasten their ac-

tion; the acid and the cost of manipulation greatly and necessarily increase the cost of the phosphate of lime. That there are soils greatly benefited by the gypsum is not to be questioned, but it can be had very much cheaper than by this process of manufacture. The wisest of us have yet much to learn before we have an exact science of agriculture or even an exact science of manures. We many times mistake theories for facts, but the real facts which are to establish our general propositions reveal themselves slowly to patient investigation.

THE total export of live stock of all kinds from the United States amounted in 1868 to only \$733,395, and to the first of August, 1878, to \$5,844,653—a great and rapid increase, which has told largely on home markets, and when we think of the state of prices notwithstanding this, we cannot but feel that without this great relief in the nick of time the depression must have been calamitous indeed. We appear to have now sounded the depths, and the gradual increase of circulation already provided for, with the hope and prospect of improved banking facilities for the rural districts, enables us to look forward hopefully in the live-stock business. To no business man whatever is the use of money at low rates of interest so important as to the grazier and breeder of live stock. The expansion of this export trade, to which we may now reasonably look forward, promises a coming era of great prosperity in stock circles. It will be wise and far-sighted policy, where possible, to avail ourselves of the prevailing low prices to provide ourselves with the best blood obtainable in all sorts of stock. Those who are breeding ought now to put nothing but the very choicest tops on their pedigrees. A grand rally in values is at hand; and when it comes, the animals so topped will leave those which have been plainly and carelessly bred during the hard times very far behind, and this is especially true of Shorthorns.

We have to thank the *Raleigh News* for a kindly reference to the work of our "Historical Society." "We cannot," says the *News*, "too highly commend the admirable spirit which prompts the movement, and with which it is being prosecuted. What more virtuous and patriotic labor can claim the services and zeal of the citizens of a great State—and especially one of the 'Old Thirteen'—than that of preserving the records of her renown, not only from considerations of pious and filial veneration, but as a legacy to posterity! What is so calculated to excite the glow of State pride, and to kindle in the minds alike of the present generation and their descendants, the fire of a lofty emulation, as the story and study of the deeds and fame of an illustrious ancestry? We trust the Society will receive assistance from every quarter of the Old Dominion to enable it to erect and finish the fire-proof building needed for the safe keeping of its precious archives."

BASS are being caught in New river at Buchanan's Bottom, a few miles from the place where the first fish were put into the river. These fish were caught by Judge Bode and Colonel Lewis, of Salem, General Hayes, of Louisiana, Colonel Hilleary Jones and the writer, near Salem, and were taken to New river at Central Depot by Mr. William F. Page, of Lynchburg, which was done in September, 1875. The bass caught have been of two sizes—about six to eight inches, and about three to four inches in length—so that we have had two sets of young from the original fish. The operations of Capt. John Sumter, of the A., M. & O. R. R., to whom the thanks of all interested are due, and the recent operations of Mr. Page for Colonel McDonald have, we think, placed it beyond peradventure, that in the next few years we shall have grand bass fishing in this wonderfully beautiful river. We believe that the land-locked salmon are also a success in this river, and we hope Colonel McDonald will get some more fry of this sort in there every year until the matter is fully tested; for if not in the great pools of New river, then we fear no where in Virginia will this species find a suitable abode.

WE have always loved Game fowls. Not that we have ever been a cock-fighter or ever seen an old-fashioned cock-fight, or ever expect to see one, or ever want to see one, but there is something fascinating in the appearance of the high-bred Game cock. It is the noblest and most beautiful of the feathered creation. We are now breeding from a brown-red cock, and among our hens is a nearly white bird of singular beauty. She has hatched three broods to this cock, every one of which have been pullets, and feathered almost precisely alike, the plumage being very nearly like that of the ruffed Grouse, and of singular beauty. We are aware that there are, and must be, and certainly it is well that there should be, differences of opinion in such matters. We fancy that for the table both the eggs and the flesh of the Game fowl are superior to all others. We could hardly be bribed to forego the pleasure we have in keeping them and selecting and mating them, according to our own notions, and without regard to the standards set up by the fancy or the brutal tests of the pit. We select chiefly for that bold and magnificent bearing and carriage technically called, we believe, "Station." Appearances are said to be deceptive, but they are so, we believe, only to careless and unpractical observation in most cases. A Game cock that fills the skilled and practiced eye will seldom flinch from the gaff. The chivalrous gallantry of their conduct and bearing towards their females is worthy of old King Arthur himself. In this respect, old War Eagle, our splendid old brown-red above referred to, is a pattern for all young Game cocks. We have watched him under all possible circumstances, and his manners are as courtly and as graceful as the most finished of the old Virginia gentlemen, so celebrated in history. In short, we give

it as our opinion, unreservedly, that War Eagle is himself a perfect gentleman—a thing which can be truly said of very few of the mankind of the period, even in old Virginia, such as is left of her—a mere ghost of her former self. Flunkies, tale-bearers, rogues, back-biters, liars, slanderers, perjurers, and every species of knave, seem to be fearfully multiplying and increasing everywhere.

FROM the *National Live Stock Journal* we learn that the sheep-peddlers from Vermont in the very heart of pious New England have been caught cheating and lying and defrauding about pedigrees “out West.” It serves any man right who will pass by breeders of established reputation and known integrity to buy sheep from a peddler. It ought to be well and universally known that of all vagabonds that infest the earth none is less worthy of belief than a Yankee peddler. Think of a “solid Western farmer” paying one of these irresponsible scamps five thousand dollars for a sheep which proved to be a fraud, and was resold at five dollars. It is to be hoped and believed that that farmer of the “solid Western” sort will buy no more sheep at “long prices” of sheep-peddlers from “down East.” With sorrow and confusion of countenance, it is obliged to be confessed that for “ways” that are low and mean, and for “tricks” that are simply downright stealing, it is not the “Heathen Chinee” who is peculiar. Ah Sin himself could not surpass that princess-pedigree trick, for instance, out West there.

THE Hampton Normal and Agricultural Institute has *purchased* an additional farm. It has also received an award at the Paris exhibition. General Armstrong has administrative ability of a high order. He is the right man in the right place. That is what is the matter at Hampton. Please mark the word *purchased*, not *donated*, not *appropriated*—*bought*. In these times of universal asking of alms, that word has a refreshing sound. Oh, that we had other Armstrongs. If there had been a weak and incapable man at the head of this great enterprise, it would have sunk long ago out of sight of contempt. This Hampton enterprise is in truth a great enterprise of christian philanthropy. It has been pressed with an ability and success worthy of all praise. This school is the focal point of a great and humane and christian endeavor to elevate a race of men, morally and intellectually, by teaching them the great lesson of self-dependence and self-help, and we rejoice unfeignedly at its success. It has been pushed in the face of ill-boding prophecy and in the teeth of disheartening prejudice with unfaltering resolve, and to marked and distinguished success, which we chronicle with great pleasure.

EXIT High Schools, as a “luxury;” score one for Gov. Holliday! Oh! for the day when we may write *exeunt omnes*.

In the *Country Gentleman's* review of the New York State Fair at Elmira, the following is said of Herefords: "The remainder of the cattle must be dismissed with brief remarks. The seven Herefords were all sent by a Maryland breeder, Mr. John Merryman, who has long enjoyed almost a monopoly of the breed in his own State." No Herefords in New York worth showing? Yet we are told these are the best cattle on the face of the earth for beef, for work, for grading purposes, and as good as the best for milk. How is all this? The Brahmins appear to be outnumbering the much vaunted Herefords in the show-rings in this country; and we suspect will eventually do the country more good, especially at the South. Whatever may be the case in England, in this country no breed of cattle can gain any hold upon the people unless they have a high rank as milkers, and this the Herefords have not; where blue-grass is to be converted into beef the Shorthorns are good. If the problem be to convert oil and turnips into blubber and dung, the Herefords may be suitable for that purpose. Our information is, that even the British stomach is beginning to revolt at so much condensed oil, whether it be surnamed beef or mutton. An extravagantly fat animal is simply a monster, and it is not fit to eat. It is of no use any longer to try to rule this country by English tastes and English practices.

THE *Southern Planter and Grange*, of Atlanta, Ga., refers to the paper of Dr. Pendleton, reproduced by us in this number, and fully endorses our position on the fertilizer question. It speaks of the paper as one of ability, and states that it made a strong impression. We know Dr. Pendleton through his excellent work on Agricultural Science, which we keep constantly on our table as a book of reference.

Again, says the *Planter and Grange*, "A certain guano of so low a grade as to be shut out from sale in the State by our legislative standard, beat eight high-grade fertilizers tested with it in the field." So much for "high and low-grade fertilizers." The trouble is, that in these modern times the whole earth is cursed with legislation over-much. "Poor Puss wants a corner," applies to about five in every seven who have been taught by the advocates of the public school that the State is bound to take care of her children. Therefore, if there is no corner for "poor puss," a corner must be made for that "child of the State," and other "children of the State" must pay for it. Oh! for a government that neither helps nor hinders the citizen, but enforces only in his behalf the law of equal freedom, and leaves him to work out his own destiny in his own way without attempting to shield him from the inevitable and just consequences of his own follies and vices.

WE are very much pleased to see from the *Loudoun Mirror*, that Dr. Quinby, of Loudoun county, has recently purchased three nicely bred Shorthorn heifers, of the Princess tribe, and a bull of the same distinguished and valuable sort. Dr. Quinby occupies a very eminent position in the medical profession, and his studies in biology, comparative physiology and anatomy, can be utilized to the fullest extent in the fascinating pursuit of breeding improved live stock. We congratulate the Shorthorn breeders of Virginia upon the accession to their ranks. Loudoun bids fair to be a leading county in our State in the number and variety of improved stock. The breeders of the Southwest will have occasion to look to their laurels. This great interest is rapidly increasing in Virginia, and we hope another decade will place her along side of Kentucky.

IN reply to the question of friends, we would say that the so-called Poland-China hog is a new breed, and that its origin appears to have been in a cross between a large white Chinese hog and the Irish grazier, and this mixed breed subsequently crossed with the Berkshire. No Poland about it.

AMONG the cows sold at the Sayers' sale were the Young Marys to Maj. A. M. Bowman—Ellen Muscatoon, bred by Mr. William Warfield, and by his celebrated bull Muscatoon; and Ellen Muscatoon second, a cow calf of the above by Sayres' Loudoun Duke. This is a well-bred pair of Young Marys and well topped; their progeny will do credit to any herd. We are glad they have gone to so good a breeder as Major Bowman.

OUR friend, Major George Chrisman, of Rockingham, in a private letter, gives a good account of his very excellent little herd of Shorthorns, which has been notably increased by the birth of several fine heifers. His young bull, Lexington, proves a fine stock-getter, and is a fine specimen of his race. We wish our friend much success in this and all his undertakings.

AT a late sale of Shorthorns in England, these cattle brought the highest average ever obtained in that country, which looks well to owners of these cattle everywhere.

THE ROSE OF SHARON TRIBE.

Eds. Country Gentleman.—Many of your readers interested in the Rose of Sharon family of Shorthorns in this country, will be gratified at the following notice taken from a report of the Yorkshire Agricultural Society's Show, held at Northallerton the first week in Aug., 1878, and which is found in the *Agricultural Gazette* (Eng.) of Aug. 12:

"It was both bold and generous in the owners of the Dunmore and Berkeley Castle herds to send specimens to compete with the Yorkshiremen at home. This co-operation caused the show of Shorthorns to have almost unprecedented interest. It was not merely West-country Shorthorns, North-country Shorthorns, and Southern cattle coming to compete in the cradle of the breed. But Lord Dunmore's consignment had a wider connection still. First, of all English breeders, the Earl of Dunmore took cognizance of the remarkable success in the United States of Mr. Abram Renick. When this most skillful breeder was hardly known to one English-born man in twenty, some of the Renick branch of Mr. Bates' Roses of Sharon family were imported to Scotland. They have done there what they have done elsewhere—bred well, fed well, and showed well against the closest competition.

"In 1874, in these columns, an account of the Red Roses at Dunmore was set forth in full. Lord Dunmore sent one family party of five to compete in the class for families at Northallerton. This class was one of the finest ever got together. And few on-lookers but held that the Renick group were among the very choicest of the class. They were eventually placed third. The dam (now called Red Rose of Indiana) was only imported at the Christmas of 1873, carrying within her a heifer calf, begotten by a bull exported from Towneley (called Baron Hubback 3d). She afterwards produced at Dunmore in succession three heifer calves. All three were by Duke of Geneva 6th (a 10-year-old pure Duchess bull), and she is in calf to him again. The dam herself is by a Mazurka bull (a family which has risen into great distinction in the States). As a proof of the difficulties which breeders have to encounter in matters of color, it may be said that, whereas the older daughters of these twain are light roans, the youngest is yellow-red and white.

"Lacking the uniform appearance of Col. Loyd Linlsey's red team, or the weight of the Marquis of Exeter's Quintette, by Telemachus, no family looked better bred, or better beef, than did the Renick cattle from Dunmore."

As an Ohio breeder of Roses of Sharon for the last twenty-four years, and being more largely interested in them than any other family of Shorthorns, and having always claimed for them at least excellence equal in every respect to that of any other family of this noble race, and acknowledging the above to be very graceful and high commendation, I most respectfully beg leave to disabuse the public mind in regard to the family exhibited by Lord Dunmore and spoken of as belonging to the Renick branch. The cow, Red Rose of Indiana, above mentioned, was bred in Ohio by the undersigned, and is distinctly of the Ohio branch of said family as well as are all of his Lordship's Red Roses named after the States of our Union, to distinguish them from the Renick branch, all of which have Scotch terminations. She is of my family of Crystal Queens, and 3d in number, being full sister to Crystal Queen 7th, (now in my herd, calved Aug. 1873, who is nursing her third calf), both being sired by the fifteen-sixteenths Duke bull Mazurka Duke of Airdrie (37086) so long and successfully used in the herd of Hon. T. C. Jones. Their dam also remains in my herd, having given me ten calves and is still breeding.

C. HILLS.

Crystal Spring Farm, Delaware, O.

[For the Southern Planter and Farmer.]

MY LOG BOOK FOR A WEEK IN MARYLAND AND
FAUQUIER AND LOUDOUN COUNTIES, VA.

Having promised myself for years to visit the above counties, I planned to go, likewise, to Rockville (Maryland) Fair, and left on the 12th, breakfasted in a hurry at Washington, and after sixteen miles travel by Baltimore and Ohio road, reached Rockville, Md. The Fair at Rockville has been held but a few years, and is located near the town and depot in a beautiful vale and grove around the edges. The attendance was good—of a solid, fine looking people. Perfect order, with no “games of chance” or gambling of any kind, and no liquor sold on the grounds. At a dinner for invited guests, presided over by the President and his wife, there were no liquors; an example it will be well to adopt at our State and local Fairs.

The exhibition was very full and complete, and I thought superior in most things. The display of ladies productions were fine; vegetables and crop products excellent. The display of machinery was fine; stock of all kinds very good, with the usual share of trotting stock and a few thoroughbred animals, and a good display of Percheron-Normans of all ages. The first premium for stallion was given to one of my horses, raised by me, beating my Imported horse (as well as at Staunton Fair last year). The President, Mr. Gassaway, is an earnest and industrious worker. Of the few I knew, was A. Bowie Davis, Esq., late President of the Maryland Society, active, enthusiastic, young, but, I must say, old, but only in years, and such men should only die very late, and their examples should live after them. I am glad to see the Potomac only divides us from most of the people of Maryland, and may it ever so be. On my return home I stopped at Thoroughfare Mills, where *they say* Beverley & Son’s plaster, from Nova Scotia, is ground, and has done much towards the improvement of lands wherever used. At this point I was met by Robert, Jr., and found our friend, Robert, Sr., at his house lecturing a distinguished Richmond lawyer, who is in his “Horn Book” learning about the horned tribe—how to improve a farm near Middleburg, which he will find a *safety box* for his city earned fees—not easily drawn out for other investments in the future.

The surface of the country looked as bright and cheerful as a ruddy-faced country child well washed, with freshly combed and curled head of hair. Mounted on horses, familiar with gaps in fences, across ditches, rocky fords with flush waters, and clover half knee deep, mixed with orchard grass raised in *Kentucky* (stick a pin here); the clover seed bought in Baltimore, plastered with his Nova Scotia plaster, and grazed with Southwestern Shorthorn grade cattle of the most select and superb kind, intended for market within a month, to give place to his usual fall supply for the next year. I found his cattle usually three and a half years old, and had been fed about four barrels of corn and on the stalk-fodder during the

winter before, followed by hogs, as is usual in the cattle feeding districts.

The grass was fine; corn crop the same, and wheat also, and the new crop of clover and orchard grass the best I ever saw. In front of the mansion, on a high hill, beyond the railroad and valley, there are several fields lately bought and cleaned up and well taken in grass. The strips of land not covered by plaster show a marked difference, as seen by my bad eyes. If this is common, then his land and plaster agree well. We returned and dined, and off again through the fields and stack yards of straw, and met with a lot of fine beef cattle on wheat stubble, clover and orchard grass half knee high, dense and beautiful. Gates were rare, or, our course was not through them, but the horses seemed to understand how to cross fences and not hunt gates.

We went by the village "The Plains," made by cross-roads and the railroad crossing them, with some neat residences, the principle one the parsonage of the Episcopal church, speaking liberally if not too much so for the times we live in. Here we entered another of our friend Beverley's large farms, with fine fields of corn, one with fine cattle and all the balance of the farm in grass; a fine new barn in which his bone mixtures were being mixed this wet day. In this ride our lawyer friend parted with us to get home before dark to his "safety-box." We returned after night by another route and found we had exchanged a lawyer for a preacher, who had come on in our absence with two married daughters and their children, on a visit, and two other daughters and his son, Robert Jr., a chip of the old block, who is well trained in the way of the father. We had not time to see his milch cows, and many of his stock cattle were away on distant farms. As he sells off his calves as veals it is a strong suspicion his cows are common place, as he did not show them, and his hogs were being diminished by cholera. Good or high bred sheep are too *expensive* for *him* to keep, and the wild mountain-raised Southwestern Virginia jumped too high for most of the fences, which are mainly of stone, hence his thousands of acres have but few sheep (?). He buys his clover and orchard grass seed from Kentucky, which he should save.

Of his gate-ways, \$50 to \$100 spent with carpenters, to be paid in supplies, would be an expenditure in the right direction. He, in his usual way and hurry, started with me in his buggy, by way of the Plains, through a farm of 800 acres. On the road we passed a *working* manager (and all should be in these times) driving a three-horse harrow, and halted a moment to tell him he would leave Monday for Southwestern Virginia to purchase cattle to fill his pastures, as the fat cattle would be out in October, and what might be best to do, and speaking in his praise to me, and said that with another hand they did all the winter work and feeding fields of cattle, and with *some* spring and summer hands they worked his farm, but that "some" was more than he expects me to think. He hurried on, as he always does, in all that he finds to do, and halted a few minutes to

compare notes with a cattle dealer brother, who had telegraphic information of railway break and hoping for an open market in Baltimore. Next market day he hurried off his cattle, which our friend B. understands the advantages of, as he availed himself of the railroad riots effects and got unusual fine prices last year. Again off in his hurry over a pretty, but thinner country, a few miles to Rector-town, and another quick cattle chat and off for some six miles, when we entered the estate of Col. R. H. Dulaney, where we halted to see if the cattle of Col. D. were fatter than his, and he hurried on again a mile and a half to the Colonel's residence, where we were glad to be, and none so glad, as the whip, horse and buggy, and the latter relieved of twice 225 pounds avordupois. Col. Dulaney had a suspicion of our movements and was near at hand, and it being near 5 o'clock, it was a good hour and place to be, and our lack of water on the way soon made our *fatigue*, hunger and thirst, things of the past.

The next thing these cattle graziers think of is to show their jewels, but, unlike the old mother of ancient days, when asked to see her jewels, pointed to her boys. These gentlemen, knowing each other's ways, the Colonel had his pair of bays to a spring wagon and we were off to his cattle, and though shot, maimed and winged, we made a good time. We saw three fields of fat cattle, also a fine lot of Berkshire and Essex hogs. Here we saw a cattle feeding barn of a capacity to feed over a hundred head, the manure falling into a basement of same dimensions and the best improvements for such work. Here he had two half Cleveland stallions; the sucking colts are very fine and some young mares and a team of Cleveland cross, but dark sent us in, that our reckless friend might get tea and wait the moon's rising that the whip-horse and buggy might get him home by midnight. Irreligious but not bad, having been taught early in life the way to church on Sundays, I gladly joined the Colonel and his party of three carriages, he drove us over a fine clay road, four miles to Upperville to church, where we heard a good sermon and returned over the old Alexandria and Winchester Pike a short distance, and through fine fields, through a Jersey herd of milch cows, next a lot of fat cattle, and by a commencement for a splendid home of an absent son and a finished one near him for a married daughter, and a little farther on another for his youngest son lately married, who is a farmer too.

Col. Dulaney has several fine flocks of sheep; some good grade Shorthorn cattle, and a few pure bred; also some of the descendants of his old Black Hawk horse, now dead, who was a nephew to mine. He has granddaughters and sons of Revenue and Nini through Orion, and I hope to see them at our Fair. Col. Dulaney has consented to be again one of our Executive Committee, and doubtless he and his sons will be liberal exhibitors in the future.

The next day we attended the Loudoun county Fair, at which there was a large crowd, mainly of the country people of a sturdy, respectable order; the men stout, the ladies reasonably handsome, and their handiwork abundant, and a good supply of all to be met with at a

Fair. Horses, fine and stout, with several six-horse teams and fine wagons—some high bred stallions and a highly creditable display of horses for farm work, the Percherons for the lead. Cattle were of best improved breeds—fine yokes of oxen; the sheep were good, but not a large display; swine fair, but not numerous.

This whole country is well fenced with as fine, substantial stone fences as I ever saw.

Albemarle Co., Va.

S. W. FICKLIN.

[For the Southern Planter and Farmer.]

SEEDING OF WHEAT.

I have been much interested in the articles published in the *Planter and Farmer*, on the subject of wheat seeding. These articles are the more instructive that they are written by men of state-fame as farmers. Though, myself, in no wise famous as a tiller of the soil—on the contrary, to my great mortification and discomfort, rather a failure—I have concluded that my experience in that line may not be unacceptable. Many experiments have convinced me that, for my farm at least, one bushel of seed per acre is sufficient, and that any variation from that quantity should be in favor of less rather than more. Some years past I seeded a tobacco lot which had been very heavily covered with stable and farm-pen manure, at the rate of two bushels to the acre. The straw was short and spindling, and the yield not more than four to one. A few years afterwards I seeded a lot of eight or ten acres in Turkey wheat, at the rate of one bushel. The seed was bought, and though apparently very good, had been damaged by heating in the bulk—consequently but little of it germinated; in fact, so small a proportion, that I told a neighbor I would not so far take advantage of any man as to give him ninepence to ensure a return of seed. From that lot, by no means what one would call rich land, there were reaped and marketed eleven bushels to one of the finest quality I ever saw. Last fall I seeded a lot of Willis' Flat. Often hindered by excessive rains and little freshets, the work was conducted slowly, and by small plats—the last being about four acres, in very bad condition. Three days after came the *big* fresh, covering not only the four acres just seeded, but the balance of the field on which the wheat had grown considerably. The deposit of mud was so great that I despaired of ever seeing one straw on that plat. About Christmas a few spires appeared, scattered here and there, which by April had so far increased in number, that they stood upon an average about ten or twelve inches apart, and yet, at harvest time, the straw stood as thickly there as on other portions of the field. My conclusion is, therefore, that thick seeding is not necessary to ensure a profitable return. Without doubt, the question is greatly controlled by the winter temperature, so much so, that each man must make his practice conform to the circumstances of location and texture of soil.

Now, Mr. Editor, a few words about fertilizers so-called. I am inclined to think that war, pestilence and famine, could scarce work more mischief than has been wrought by these same fertilizers. Before guano was imported, I was, by the use of a compound similar to Lee's Prepared Agricultural Lime, slowly but steadily improving my farm, which had been greatly impoverished by my predecessor. When guano came, I went crazy like the others, and in my madness put on more money in the shape first of that article and afterwards of commercial fertilizers than the land originally cost. At first all went on grandly, but in a few years the crops began to give back—the land was bare of weeds and natural grasses—became less and less productive, in fact poorer and poorer, until the condition was worse than at the beginning of the process. Why was this? The manufacturers and agents from whom I bought fertilizers said it was evident they did not suit my soil. Why did they not disclose the *fact* that they made an article suited only to certain soils, and describe these soils? Simply because such a revelation might hinder sales. If a man makes a manure adapted only to particular purposes and certain kinds of soil, and recommends it generally and without reserve, keeping concealed its special nature until he has pocketed the money, does he not commit a fraud on the purchaser? It looks very much like it.

Fluvanna Co., Va.

M. B. CARRINGTON.

Editorial—Farm, Garden and Fruits.

CONDUCTED BY DR. THOMAS POLLARD, COMMISSIONER OF AGRICULTURE OF VIRGINIA.

WORK FOR THE MONTH.—By the time this reaches our readers, the seeding of wheat and Winter oats and rye will be about finished, and the press of business will now permit attention to smaller, though important matters.

CORN, if not housed, should be now put in corn-cribs, which should be built open, and rat-proof as far as practicable. It had better be thrown in unshucked and shucked out during wet weather, in the Winter. If left in the field longer, there is loss from rogues and stock and birds. The crop in Virginia is generally very good. Some portions of the Valley and other sections suffered at one time from drought. The crop in the United States is a very large one.

THE TOBACCO is all cut, and contrary to appearances, at one time, particularly on the "Southside," the crop will be very good, and better in quality than last year, though the acreage was less.

ROOT CROPS should be housed or stored away in pits out doors, except

ruta bagas, which endure cold weather remarkably well, and may be permitted to stand until next month.

The chilling blasts of approaching Winter admonish us to make provision for making Stock comfortable. A hand should be sent around to all the quarters to tighten up loose boards, and put on new ones where needed. Litter, if the farmer has not plenty of straw, should be put away under shelter for bedding, and if provender promises to be scarce, then the straw may be kept for feeding, and pine and oak leaves should be provided. Nothing pays better on the farm than taking good care of stock in cold weather, and the humanity also of the matter should be taken into consideration. It would seem that any conscientious, humane farmer would himself sleep better when he knew his stock were warm and comfortable, and not shivering in cold, piercing winds or storms of snow or rain. If stock are not well housed and fed, they will come out in the Spring in a poor, unprofitable condition; and if they are not well protected from the weather, then increased quantity of food must be supplied to keep up animal heat and prevent great loss of flesh. And it is unwise to put off feeding stock until very cold weather. As the pastures decline, hay and other feed must be provided, and the quantity increased as the weather gets very cold. Experiments prove that an ordinary sized cow will eat 25 pounds of hay per day, or $2\frac{1}{2}$ per cent. of their weight, though some cows of the same weight eat more than others. *En passant*, it has been found in Germany, by Prof. Heinrith, of the Experimental Station at Bostock, that one and a half pounds of peanut cake added to the other feed, viz.: for each cow, five pounds of meadow hay, three pounds of clover, thirteen pounds oat straw, thirty pounds of beets, increased the yield of milk nearly six pounds, or about one and a half quarts. (See *Stock Journal*, October, 1878.) A good article of decorticated cotton seed cake or oil cake would, it is believed, have the same effect.

Hogs should be put up now for fattening and fed liberally. They will take on flesh much more rapidly now than when the weather gets colder. Corn is the article to feed with now, though we prefer occasionally a little variety in the food, some turnips or beets or Irish potatoes. It gives the hogs a relish for their corn, and in warm days serves to prevent their suffering from heat. We earnestly advise that the hogs shall be made comfortable, by either putting them in houses or sheds, or covered pens, and be well littered. We are no believers in wet, muddy quarters for hogs at any time. The opinion is gaining ground in the Western States that "hog cholera" is produced by exclusive feeding on corn, and that variety of food is very important.

IRISH POTATOES should be permitted to stay in the ground until the weather gets quite cold. They are better off in the ground as long as

the thermometer runs up to 70° or 80° during the day. If housed in warm weather, they will rot, particularly if the air is not well excluded from them. The best way to keep them is to put them in pits of dry, sandy or gravelly soil, if there is such on the farm. They should be dug, if possible, in dry weather. If wet dirt adheres to them, and they are suffered to remain in the sun to dry off, they will be injured and not keep well. The late crop, this year, in Lower and Middle Virginia is generally very indifferent. In the other portions of the State it is said to be better. In the two first sections, the late crop is very often a failure, and we doubt whether it pays to plant them in these portions of the State. The crop in the North and West is, as far as heard from, very indifferent, and potatoes have risen very much in price. We advise our friends to take care of what is left of the early crop (most of which, however, has no doubt been sold at very low prices), and to husband carefully the late crop. Another point not mentioned is, that potatoes should be carefully handled in loading and unloading, so that they will not be bruised, and they should be carefully picked over to remove all the rotten and defective ones. We think our late potatoes should be planted *deeper* and *earlier* than is usually done.

WHEAT and OATS may still be sown on good ground in the more temperate portions of the State, particularly the latter, if desired for late soiling.

ASPARAGUS.—The tops of asparagus should be cut off in this month and removed; then the dirt should be thrown from the beds with a single plow, and stable manure applied liberally all along the tops of the beds. When this is completed, throw the dirt back with the plow, and let alone until Spring, by which time, we will give further directions for management and cultivation.

CLEANING DITCHES.—Ditches should be cleaned out this month or next, and the accumulated dirt and leaves and grass removed. By removing all obstructions now, the flooding of the ground during the Winter and Spring will be prevented, and the ditch be rendered really useful, and the ground will be found in order early in the Spring for working. If any of the ditches are blinded, they must be examined to see that they are not obstructed and are working properly. New ditches may be opened now where necessary, as there will be more time than in the Spring. If intended to be blinded in any way, the tile will be found best and generally cheapest, if there is not too much transportation necessary for the tile. Logs are unsatisfactory, and do not generally stand long without obstruction. Rock drains are very expensive, if properly constructed, and should not be used unless it is necessary to remove the rocks from the ground for cultivation, where tile can be gotten. We drained, eight years ago, with tile, a piece of land in which a cow

would nearly mire, and on which nothing grew but bulrushes and the coarsest grasses. Wooden drains had previously been tried on this land. It is now all in good arable productive condition, but one small oozy place, though that is in cultivation. This place might be drained by a deep hill side ditch, but for want of fall sufficient, to a neighboring branch.

FRUIT AND FOREST TREES.—This is a very important month for planting fruit trees, and also for forest trees. The last of October answers well also for this purpose, particularly in the Piedmont and Valley and mountain sections, where the trees shed their leaves earlier. December is generally also a good month for this purpose, except that we frequently have a good deal of cold, bad weather in the month. So that for most parts of the State, November is altogether the best month.

We regard fruit planting as a very important matter to our people. Independently of the profits of fruit in localities near the cities, and on lines of railroads and water transportation, it is a source of great luxury and a promoter of health. Every farmer, at least, should plant out enough of it for the use of himself and family. Trees are low now, and may be high before long. They take time to grow and perfect their fruit, and we would urge every one who has not an orchard, not to delay longer planting one, even though the hard times may necessitate its being a small one.

It is better to set out in the Fall than in the Spring, for the dirt gets settled around the roots well before the Spring, and in fact; in the mild weather of the Fall and Winter, the root fibres put out and grow. When Spring arrives the tree is in a condition to start off in growth, taking advantage of the first warm weather. Much fewer trees are lost by Fall than by Spring planting.

Grape-vines, gooseberries, raspberries, currants and strawberries may also be set this month. This is a good time to trim gooseberries and currants, and cut grape-vines, which is done by shortening the new wood and thinning where too crowded. If these cuttings are prepared by dividing into pieces six or eight inches long, and set out at once, in rich ground, four inches apart, they will root well, and make large enough plants to transplant in one and two years—the largest in one year and the smaller in two.

If trees are received before the ground is ready for them, they must be "heeled in." This is done by opening a trench about one and a half feet deep, placing the trees in one at a time, at an angle of about 45°, covering the roots of each with fine soil, filling in the spaces well, then banking up the earth and pressing it well with the foot, leaving no place for the water to settle on them. In this condition they will remain all the Winter, if necessary, for want of time to set them out. Of the kinds

to set for this latitude, including all Eastern Virginia—that is, the portion of the State below the Piedmont region—we prefer of apples, May or June, Early Harvest, Striped July, Red Astrachan for early; Summer Cheese and Cathead for Summer and early Fall; and Winesap, Virginia Greening, Limbertwig for Winter. The Summer Cheese is the most valuable Summer apple we have, being of excellent quality, and unsurpassed in bearing. Too much cannot be said in its praise. The Cathead is one of the best of all apples, but, unfortunately, is a shy bearer.

The soil best suited to the apple is that with clay subsoil, but the Cathead, Summer Cheese and Winesap do as well on light soil, perhaps better, if the land is good.

A great variety of peaches do well in our latitude, provided they escape frost, which is the great difficulty in raising this fruit. Troth's Early, Early York, Crawford's Early and Late, Old Mixon, George IV, White Plum, Stump the World, La Grange, Lemon (or Willow), Georgia, Malta, and Heath, are all very desirable sorts. Beatrice, Rivers, Amsdem and Early Louise (modern peaches), are not yet fully tested. Avoid Hale's Early, for it almost always rots. The soil for the peach is a light one, not rich, but not poor.

Of pears, we recommend Bartlett, Duchesse, Doyenne d'Ete, Rostizer, Buffum, Beurre d'Anjou, Clapp Favorite, Doyenne Boussock, Beurre Claireau, Lawrence and Seckel. Duchesse and Buffum are not of very good quality, but excellent bearers. The soil for pears is one with clay subsoil and good fertility. Avoid a Southern exposure. Plant *Standards* and avoid *Dwarfs*, except, perhaps, some Dwarf Dutchess, as they do well and bear a year or two sooner.

Of cherries, we advise old May cherry, May Duke, Wax, Napoleon Bigarreau, and Early Richmond, and Morello. Soil must be good, either gray or red, though the first is best. We suspect they do best on cherry stock, rather than on Mahaleb.

Of plums, plant Green Gage, Jefferson and Washington. Try the Wild Goose Plum, though not yet fully tested here. It is said to escape the curculio.

Of grapes, we advise Concord, Ives and Norton Seedling. Concord is a great grape, and will make quite good wine. Norton is the best for wine. Ives is early and profitable for market. Delaware is an excellent table grape. It requires good land of clay subsoil, but is generally a poor bearer. Some of "Rogers' Hybrids" are good table grapes, particularly Nos. 1 and 4, or Goethe and Wilder. Grapes generally do best on light land, with Southern or Southeastern exposure.

Of gooseberries, Houghton Seedling is the most certain, being a proper bearer and escaping mildew.

Of raspberries, plant Philadelphia, Clark, Mammoth Cluster and Brandywine. The latter is very popular with those who have tried it in this latitude.

Of strawberries, the Wilson is the best, being a great bearer, and suited on account of its firmness for transportation to market. Triomphe de Gand, Charles Downing, Lady's Finger and Kentucky are best for table. Monarch of the West and Great American are popular new varieties, but not yet well tested. The former is too soft for transportation.

In regard to peaches, we would say that the *Troth's Early* was the only peach in our orchard (except some which came from the stone) which escaped frost this year. It bore profusely, and is of excellent quality. It has been found that peaches which come from the stone are most hardy, and escape frost best.

There are, doubtless, many other fruits than those we recommend, which deserve propagation. We know those we mention are reliable, and should be planted. We think the variety from which selection is to be made is much too great, and that too indiscriminate praise is bestowed on the published lists, and that too many kinds are planted.

With regard to forest trees, we have not space to enumerate the kinds we think most desirable. For one, we think the Sugar Maple should be more planted than it is. It is a beautiful tree, and if the farmer would plant groves of them, he might manufacture his own sugar. The prejudice against the Ailanthus and Otaheite Mulberry, we think unfounded. They are both hardy and valuable trees. The Ailanthus, because it is rapid in growth—hardy and valuable for timber. The Mulberry, because it is hardy, quick growing, and affords an excellent shade.

Concerning pears, it might be well to plant out a few dwarfs besides Duchess, as they come in rather earlier; as Seckel, Doyenne, Boussock, Belle Lucrative, &c. The latter we have found a very excellent pear, though more liable to blight than some others. The Bartlett should never be planted as a dwarf. It bears as a standard in four years, and its union with the Quince is a bad one, and it is apt to break off by storms or slight touches from the swingle-bar.

We have found the Duchess, Seckel, Buffum—and, perhaps, Lawrence—more hardy than others, and less liable to blight. The Lawrence is the best *Winter* pear, as they are called, that we have. They are really *Fall* pears here. They have blighted some with me, though not more than one has died. I may make exception, however, as regards *Winter* pears, in favor of one brought by me from the county of Hanover (from my paternal residence), and propagated by my request by F. Davis & Co. (some also being budded by myself). Davis & Co. have dubbed it "Pollard's Favorite." It is one of the most delicious pears of any season, and will keep until Christmas—later than any pear that

I know of. Bartlett's, Clapp's Favorite, Belle Lucrative, with some others, perhaps, not now recollected, are prone to blight, particularly the first.

In the October number of the *Planter and Farmer*, Mr. Fitz, of Albemarle, after collecting and commenting on some statistics from my crop, &c., report for June, makes some very practical and sensible remarks about fruits to plant, with which I assent, with this addition, that peaches with scarcely an exception, will come true to the stone planted. I once raised a good sized orchard of peaches, most of which were from the stone, without a failure, as far as I can remember, to get fruit similar to that planted, and the kinds were nearly all the varieties raised in Lower Virginia. The nurserymen generally do not seem aware of this—in fact, most of them deny it. Occasionally, I have seen an abortion from a peach stone planted—that is, a tree which bears fruit which does not ripen. To Mr. Fitz's list of Winter apples, I confidently recommend the "Virginia Greening." It is a great bearer, and excellent keeper. The nurserymen seem scarcely to know of it. I have been disappointed in the portion of the State contiguous to Richmond. The fruit is most generally knotty, with dark spots, and this is particularly the case on stiff land.

Though the wheat seeding is pretty much over, the following items will not be uninteresting to wheat-raisers :

"THICK OR THIN SEEDING.—We are no 'thin seeders,' or apostles of thin seeding, or riders of any particular hobby; but we observe that the thin seeders have had their way to some extent, and have modified practice throughout the country to an appreciable extent. Perhaps every one does not know that there are ten thousand wheat grains in one pound, more or less, according to the size of the individual corns. According to this estimate, sixteen pounds of wheat, or one peck, if uniformly distributed, would serve to place the seed of wheat exactly nine inches apart over the entire acre. Two pecks would enable us to sow the grains four and a half by nine apart, which is about the distance we would recommend for dibbling. Since almost every grain sown is capable of germinating, two pecks ought to seed an acre, and some persons have held that they will do so. The risk is, however, very great, and it is wiser, on the whole, to copy Nature to some extent; for she, if careful in many directions, is lavish in others, and in nothing more so than in seed. The checks to population are manifold in both the animal and vegetable world; and to argue from a possible rate of reproduction is always fallacious. We say, therefore, do not be lead away by the special pleading of extreme advocates, but let practice be guided by a rational consideration of all the circumstances. These will point in the direction indicated, unless in peculiar cases, when a smaller quantity of seed may be safely adopted."—*Agricultural Gazette*.

"At a convention of Michigan millers at Jackson, August 16, a 'temporary Committee on Milling Wheat' was appointed, and Mr. Ward, on behalf of that committee, regarded the Treadwell wheat the best. Con-

siderable discussion followed, during which the relative merits of Diehl, White Amber, Lancaster, Clawson, Egyptian, Tappahannock and Treadwell wheats were set forth. Mr. Ward said that he had tested the bread-making properties of different qualities of wheat to a limited extent. One barrel of Lancaster, a red wheat grown in the southwestern part of the State, patent process, produced three hundred and thirty-one pounds of bread; two barrels of Wabash Amber, patent, three hundred and ten and one half per barrel; two barrels Wabash straight ground, three hundred and eight and one-half; Diehl straight, two hundred and seventy-eight. The Diehl bread was not so good as the rest; the Wabash bread was extremely nice, and so was the Lancaster, the latter retaining its moisture longest."—*Leffel's Milling and Michigan News.*

In speaking of the remedies for the weevil in wheat, in an article in the *Richmond Dispatch* a short time since, we spoke of henbane placed about in the wheat as a remedy, and inadvertently gave stramonium as its botanical name, when it should have been hyoscyamus. It is very probable that stramonium (Jamestown weed) would answer the same purpose, as any strong smelling plant is said to be very repulsive to weevil. So is kerosine oil said to be. Mr. Ruffin, in his article in the "Farmer's Register," alluded to in my article, also advises burning sulphur as destructive to weevil, and there is little doubt this article, properly used, by burning in a close house, is destructive to all insect life.

IN reply to an article in the October number of the *Planter* signed "Farmer," I stated the general proposition, that the agricultural and commercial value of fertilizers did not accord. At the same time, I believe the commercial value is a guide to the farmer in purchasing his fertilizers, and in determining whether the manufacturer is charging a reasonable or unreasonable price. That a fertilizer has a value independent of its commercial values is evident, if we recognize the fact that, by some combination of circumstances possible, the ingredients of the fertilizer might cost nothing, or very little. The ingredients might be found in a state of nature, in great abundance, where their utilization would involve but little expense, or a very cheap process might be invented for their manufacture. Still, a ton might be really worth in agriculture, \$30 or \$40.

Fall Plowing.—Fall plowing for spring crops should not be neglected. It saves time and labor in the spring. The winter rains and frosts enrich and pulverize the soil and aid much in making better crops.

Storing crops.—All crops should be stored so as to realize the best results. Corn packed in large bulk is sure to heat. Onions should be stored in a dry and cold but not freezing place; spread layers of straw between.

Home Department.

CONDUCTED BY MRS. G. JULIAN PRATT.

CHEERFULNESS.

Whatever you do, do cheerfully,
 As if your heart was in it.
 "Twill smooth the way to the goal you seek,
 And give you strength to win it.
 For little of silver or gold you'll get,
 If you make up your mind to frown and fret,
 Little of joy for a lonely hour,
 If you never have planted a single flower.
 What though the task a hard one be,
 Still with a smile begin it;
 And whatever you do, do cheerfully,
 As if your heart was in it.

The help you give with a cheery word,
 Is a double help to your neighbor,
 For it puts a song in the weary heart
 That knoweth no rest from labor.
 For little you'll know of real delight
 If you work for yourself from morn till night
 And never have a penny to spend,
 Or a loving thought for a needy friend;
 The thread of life will longer wear,
 If with a song you spin it;
 So whatever you do, do cheerfully,
 As if your heart was in it.

You make your cross a heavier one
 Than ever the Lord intended,
 If you sit and sigh at the foot of the stairs,
 Down with your hope descended.
 'Tis better by far to live your day
 In a wholesome, happy, light-hearted way
 Than to carry about a gloomy face,
 As if the world was a dismal place.
 If you never sung a song of joy,
 Gratefully now begin it,
 And whatever you do, do cheerfully,
 As if your heart was in it.

MAKING HOME HAPPY—A DOMESTIC STORY.

An aunt of ours concluded to try the effect of a pleasant smile and a kind word upon her husband when he returned from his work. She had read how a home should be pleasant, and the wife should always meet her husband with a joyful smile. The success she had is best given in the shape of a dialogue:

[Enter husband, almost exhausted, and very hungry withal; throws his hat on the floor and drops heavily into a seat. Wife, preparing tea, looks up with a smile, and is so glad to see him.]

Wife—"Well, my dear, it is so nice to have you here at meal time."

[A long smile.]

Husband—"Yes, I suppose so."

Wife—"How has your business prospered to-day?" [Another smile.]

Husband—"About so-so."

Wife—"Come, my dear, supper is ready; let me draw your chair." [Another smile.]

Husband, gruffly—"I am too tired to stir. Wait till I warm my feet."

Wife—"Do as you choose, my dear." [Another sweet smile.]

Husband—"Look o' here, old woman; before any more tuss is made about it, I should like to know what you are grinning at."

Aunt sighed and relinquished her sweet smiles from that date. Uncle was not one of the romantic sort, and didn't understand such things.

A PRESENT FOLLY.—The latest mania among fashionable people is a passion for the collection of old furniture. They seem to ignore the fact that there were just as many bad workmen a hundred years ago as there are now. Because an article happens to be old, it is no proof of its merit. The major part of old-fashioned furniture, selling as such in the market to-day, is bad in construction, inartistic and worthless for the purposes of modern housekeeping; moreover, much of it, especially the china and brasses, are counterfeit. But fools and their money are soon parted, and for the past ten years the second-hand dealers and junk-shop keepers have done a flourishing business. They have their agents out all over the country, ransacking out-of-the-way corners in search of something old-fashioned, and some of the dealers send over to Italy for their goods. It makes very little difference, they say, what is sent back. If it is old it sells readily. Much of this trade is of a confidential nature. Some persons are ashamed to acknowledge what they have sold, and others what they have bought. Moreover, a curious feature of this fashion is the aid it affords people desiring to lay claim to a respectable ancestry. For this purpose nothing is more suggestive than a set of mahogany chairs with leather seats, in one's dining-room. A brass-mounted chest or a spinning-wheel in the guest chamber provokes inquiry as to its history.—*Godey's Lady's Book*

INFLUENCE OF THE MOON ON CROPS.

A correspondent of a New York paper was planting potatoes in the light of the moon, or in the increase of the moon; several of his neighbors were present, and a discussion arose as to the effect the moon had on the different crops. Answering its correspondent's inquiry, the paper said: "There has been always a powerful superstition that the moon exerted a great influence upon the affairs of mankind, but this idea has prevailed chiefly among those who did not understand the utter impossibility that the moon could exert any such influences. Formerly the stars were supposed to assist the moon in these interferences with mankind and their labors, and to be able to 'read the stars' was equivalent to the possession of prophetic powers. Now the stars have lost this reputation, and the moon is in a fair way to lose what little is left to it. Formerly crazy people were 'moonstruck,' but now when we see a lunatic (derived from luna, the moon, and really meaning moonstruck), we do not blame the moon for it. The moon has now fallen so low as to be supposed by some to influence only the twining of beans on the pole, the planting of seeds, the wasting of fat pork in the pan, unless it was killed under a growing moon, and the making of soft soap. To a rea-

sonable person this seems a small business for the moon to be engaged in, or a very unlikely thing that the moon can exert such influence. If any difference occurs it will be from other causes, such as soil, weather, etc. Lastly, it is absolutely certain that the moon's influence on our atmosphere is so very small that it cannot even effect the weather in the least."—*Hawkeye*.

A MATTER OF HEALTH.—Never stand when you can do your work as well while sitting. Every housekeeper and every mother should heed this. Have a variety of seats of different heights, from the low cricket to the office stool of moderate height. It is a matter not only of comfort but health.

KITCHEN APRONS.—A big wide apron is the insurance company for the housewife. Never mind the new fangled ways of making them: fashion never can improve the good old sensible ways. Let them be wide and long, so that they may cover the skirt nearly all over. I find an apron with sleeves is very handy to put on at some kinds of work. If a dress is worth making well, and neat, and pretty, it is surely worth taking care of.

No woman, unless on a very special occasion, such as making soap, should wear a dress too dingy, or shabby, or old, to be seen. A presentable dress can, on any other occasion, be covered safely with a large apron that she can lay off if a caller comes. But don't lift a spider, or kettle, or pail of slop, or pan of milk, when you have on your best clothes, even for an instant, without that safety-apron on, for if you do a little splash will be sure to fly out, or a drop of gravy, or you will just touch your skirt against something black, or greasy, or newly painted, or on the jagged nailhead, or the mere splinter that lay in wait like a little fox to sneak out among your tender vines. It takes us women a long time to learn how to live wisely and well.—*Household*.

MAKE the bridge from the cradle to manhood as long as you can. Let your children be children as long as they will. Let them be children, not little apes of men and women.

RECEIPTS.

LARD and soap will remove machine oil from muslin. Rub it on then wash as usual.

SAUSAGE MEAT.—Thirty-two pounds meat, not too fat, twelve ounces of salt, three ounces of sage, and two ounces of pepper.

A RICH THANKSGIVING PUDDING.—One pound of finely sifted flour; four ounces of stoned raisins; four ounces of sifted sugar; four ounces of currants; four ounces of fresh butter; eight eggs; one wineglass of French brandy; one gill of yeast. Dissolve the yeast in a half pint of tepid milk, strain, and mix with it a large handful of flour, working it lightly with the fingers of one hand to form a light, soft dough. Put this, which is called the "sponge," into a deep basin, cover it with a cloth, and leave it in a warm place to rise—this will take one and a half to

two hours. Just before the sponge is ready, place the remainder of the flour on a pastry slab in a heap, make a hollow in the center, break the eggs into it, add a good pinch of salt, the butter just warmed, the sugar, and the brandy; work all lightly together with the fingers of both hands, beating the mixture so as to beat the air into it; then work in the sponge in the same way, and lastly, the raisins and currants. Place the paste in a large mould, well buttered, and put it in a warm place to rise. The mould should be sufficiently high to allow the pudding to rise. When it has well risen, bake it in a moderate oven for about a couple of hours. Serve hot with the following sauce in a boat: Boil a pot of any kind of jam with half a pint of water and a few lumps of sugar; strain, and add one gill or more of rum.

OYSTER STEW.—Oysters, one quart; milk, two-thirds of a cupful; butter size of an egg; pepper, mace; flour, a teaspoonful. Div the oysters from the liquor carefully with a fork, put them into a sauce-pan with the butter, put them on to the fire till the butter melts, then add the milk with the flour mixed with it; add a little pepper and mace; should the oysters be too fresh, add a little salt. Let it boil up once, and serve immediately. It is excellent.

ROAST TURKEY.—Pluck, singe, draw, wipe thoroughly, and truss a fine turkey, stuff it with plain forcemeat, pack it up in some thin slices of fat bacon, and over that a sheet of buttered paper; put in a hot oven, basting frequently with butter. A quarter of an hour before it is done, remove the paper and slices of bacon. Sprinkle with salt just before serving. Garnish with pork sausage, and serve with a tureen of gravy. Time of roasting, two to three hours, according to size.

THANKSGIVING CAKE.—One pound of butter; nine eggs; one pound of sifted loaf sugar; one pound of flour; half a nutmeg; one teaspoonful of mixed cinnamon and mace, ground; two ounces of candied lemon peel; two ounces of blanched and chopped almonds; half a pound of dried currants. Beat the butter and sugar to a cream; add the eggs, well beaten, mix in the flour, and add other ingredients. Beat all thoroughly together, and bake two hours in a moderate oven.

PUMPKIN PIES.—To every quart of pumpkin, strained; six eggs; quarter of a pound of butter; half a pint of sweet milk; three quarters of a pound of white sugar; one tablespoonful of French brandy; one gill of madeira or sherry wine. Cut the pumpkin into large pieces; peel these, and put them in cold water over a very slow fire; simmer, without boiling, until every piece is tender. Then strain through a colander, and afterwards through coarse muslin, squeezing out every drop of water. To every quart of the pumpkin, add the ingredients given above, beating the eggs till thick and light, and stirring the butter and sugar to a cream. When well mixed, bake in a puff paste.

SUET PUDDING.—One cup of suet; one cup of milk; one cup of molasses; one cup of raisins; teaspoonful of soda; flour enough to stiffen. Boil or steam four hours.

Editorial—General.

PUBLIC SCHOOLS, &c.

I have just read your piece in the September number of the *Planter and Farmer*. I congratulate you and admire the stand you have taken in condemning repudiation and the public school system, notwithstanding the admonition of some of your friends. Many of those who advocate repudiation of the public debt, consider it an entering wedge to the repudiation of private debt also, as they themselves are irretrievably involved, without other hope of redemption—so that they are so much biased by their own personal interest that every other consideration is persistently ignored. The public school system is not only an iniquitous one in most respects, but the bone and sinew of our State have to pay about a million of dollars to sustain it, without one iota of benefit to themselves, and but little, if any, to those for whom it was established—thus largely increasing the debt of our already overburdened State, which, without better legislation and a more economical administration of government, repudiation will be made inevitable. Then farewell to the honor and credit of our once renowned State. Be not dismayed by those who are striking at our vitals, but go on in the good work you have begun, and you must and will be sustained by the good people of Virginia. Excuse this hurried letter (which is not intended for publication) and the liberty I have taken (as I have *passed* the Biblical limit of human life) in giving counsel to one who is much better qualified to act for himself than *I am*. In closing, allow me to wish you great success in your agricultural enterprise, both physically and morally. When pointing out the way to agricultural success, why not say there is a God that rules the seasons and the universe; without His aid failure in all things is inevitable. Say to your readers, “be not troubled about many things, but one thing is needful.” Ask the Editors of the *Religious Herald*, in whom I have entire confidence, though they know me not, if I am not right. I should like to hear their response.

Truly yours,

Orange Co., Va.

* * *

NOTE BY THE EDITOR.—The foregoing is well nigh the unvarying character of the numerous letters that reach this office in regard to the public schools. They are popular, it is said. Popular, indeed! Popular with those who pay nothing to their support, but simply execrable in the eyes of the real people who foot the bills, the people who own the State and are the State. If a man's income in excess of \$2,000 per annum were confiscated by the Constitution and turned over to the shiftless, lazy rabble, the measure would be just as popular and for exactly the same reason.

We opened our batteries on this miserable farce, this corrupting subsidy, several years ago. A test was thus furnished of the vaunted popularity of this wretched humbug. The subscribers of the *Planter and Farmer* are the men who own the real estate of the Commonwealth; who make their living by the cultivation of the soil and the pursuit of the industrial arts. Did we lose subscribers? Not a bit of it. Our subscription was at once largely increased, and has kept on growing. Words of cheer and comfort and commendation come to us by every mail, and we are constantly urged never to cease our assaults upon the insatiable vampire that sucks the blood of the people.

“The public school is the cheapest defence of property”—is the postulate of the advocates of the system. The position is equally false in philosophy and in fact. Intelligence is not virtue, nor necessarily the adjuvant of virtue. The multiplication of desires, the result of knowledge, in the absence of corras

ponding moral restraints, leads to crime. The public schools, in this country at least, can touch the mind only. The school system is a part of the governmental machinery; and with us, government and religion are completely divorced. The Bible is the only infallible source of correct morals, and the Bible from necessity is excluded from the public schools. If used at all, as it sometimes is, it is only by sufferance. The public school, if the Bible be introduced, restores the abhorred union of church and State; with the Bible excluded, it is bald and unqualified atheism. The intelligence born of the public school is not a guarantee of good morals; rather, desires thus whetted and multiplied, without the corresponding cultivation of the moral faculties, suggest and incite to crime.

But in Virginia the public school is simply criminal. We cannot pay our just debts, yet we can afford to spend for education, so-called, in one way or another, \$1,200,000 per annum, an amount found abundantly sufficient to meet the necessary expenses of our State government for more than two years when we were rich and powerful, and government had not become a mere charity concern, a public almoner. By the mandate of that wicked contrivance of scarcely less than satanic ingenuity and malignity—the Underwood Constitution—which we must get rid of or be speedily and hopelessly ruined, we take money which does not belong to us, but to our public creditors, and lavish it in a gigantic and visionary scheme of universal education, and that not in the mere rudiments of knowledge, but in all the branches of literature and science embraced in the course of the University of Virginia. It is shameful; it is disgraceful! Virginia is pitifully poor when confronted with her just debts, but royally rich and lavish when a spurious charity and philanthropy, imported hither, assert their claims!

A boy learns the alphabet, ascends the intermediate grades, enters the University and graduates as a master of arts, doing all from beginning to end on public money, money wrung from an outraged and prostrate people, by unjust and cruel taxation. Whatever he may have learned, whatever he may have failed to learn, there is one lesson, the basal doctrine of his education, that is stamped indelibly on his mind and permeates his being. That lesson is this: The public has taken care of him from early boyhood to his majority, perhaps beyond it, and the public must continue to provide for him to the end. He may come to be an astute politician, an adroit placeman, a boss striker, a splendid pauper; but if he makes a self-reliant industrious citizen, it will be not in consequence, but directly in the teeth, of his educational regimen. The law has freely taken other people's money and appropriated it to his private individual use; he logically looks to communism as a wise conclusion.

The public school the cheapest defence of property! Look at the facts. Just where the system has been longest entrenched, property is most insecure. Where did those riots occur in the Summer of 1876, when millions vanished at the touch of lawless hands? Whence come those hordes of sturdy beggars, those lusty tramps, who attack life and property, and female virtue? What is Prussia, made powerful, it is claimed, by her public schools, but a seething volcano? A large part of the newspapers are open propagandists of communism, while the utmost energy of its strong, despotic government is taxed to keep down the disaffected populace. Even in our own country, the reader knows where, newspapers and candidates for office unblushingly proclaim the doctrines of the commune. So far from protecting property, the public school is essentially an attack on property, and wherever it has long prevailed, private property has become insecure. The same destiny is pursuing us—indeed it has already overtaken us. The

fight has actually begun. With full hand we scatter tares and are confounded that the crop is not good white wheat. We sow the wind and are amazed to reap the whirlwind. We warm the torpid adder only to receive the poison of its deadly fangs. Virginia before the war had no public schools, and a better breed of men than she boasted then was never born of woman.

READ THE FOLLOWING AND SEE WHETHER WE ARE WHOLLY
CAST DOWN.

“OUR ENORMOUS EXPORTS.—Of the foreign commerce of the country New York continues to do more than all the other ports combined. During the past fiscal year New York received 67 per cent. in value of the foreign goods which entered into all the ports of the United States, while of the total exports for the same year more than 47 per cent. were shipped from our harbor. During the nine months since January 1, the imports of merchandise have been to the value of \$214,680,000, while the exports foot up nearly \$264,000,000. The September exports of domestic produce from this port are unprecedented, reaching \$32,104,880.

During the year ending June 30, 1878, the exports of goods, the produce and manufacture of the United States, were greater than ever before in the history of the country, the value being \$680,683,798. Adding this to the value of foreign products exported, \$14,200,402, we have an aggregate of \$694,884,200. During the same period the imports fell to \$437,051,533, establishing an excess in the value of exports over imports of \$257,832,667. This wide disparity between the inward and outward movement has created a condition of the trade balance more extraordinary than anything hitherto experienced.

The exports of wheat and flour from Atlantic and Pacific ports since July 1 have been equal to 50,356,239 bushels of wheat, against 18,398,647 bushels for the corresponding period in 1877. The exports of wheat from San Francisco during September are the largest on record, much having been shipped to France, where the deficiency of the home crop will be great. The United States will probably have a surplus of 120,000,000 bushels of wheat from the crop of 1873 available for export.

A constantly increasing portion of England's external supplies of cereal and animal food goes from this country, and there is no reason for supposing that this market for our products has reached the maximum of its demand, for while England imported last year \$500,000,000 of those articles, we exported thither during the year ending June 30, 1877, only \$150,000,000. This leaves a margin of \$350,000,000 open for our competition. Large, therefore, as we have been wont to consider our trade with England in food staples, there is yet ample room for an extension of it, provided we can successfully compete with other agricultural countries in the cost of production and transportation.

The large and steady increase of the cattle movement from this side to Europe excites much attention abroad. Hamburg papers announce that American exporters contemplate extending their operations to some of the more important ports of the western coast of the Continent. One of the places they have in view is Antwerp, through which a large trade is anticipated with the densely populated manufacturing centres of Belgium, and with the chief towns of Rhineland and Westphalia. Hamburg, hitherto an important place for the export of cattle to England, is now becoming an importer of cattle from the United States. The trade with England has made beef dear. Berlin, with its million of people, is only a hundred and sixty miles from Hamburg, whence the American importations could be easily forwarded by rail.

Since the 1st of May last and up to the 1st of September an average of three thousand cattle a week have been shipped from Montreal, Boston, New York, Philadelphia and Baltimore. A large portion of these—some 28,000 head—were shipped from Boston because the Cunard and Warren steamship lines have taken their old boats and torn out the inside so as to make them exclusively fitted for carrying cattle from that port. At present the British market can and will take, live and dressed, four thousand head of cattle a week from the United States.

With abundant crops of grain, and, we may say, millions of live stock, this branch of our export trade promises to assume vast proportions in the immediate future. Nebraska and Wyoming are great cattle raising points in the United States. The valleys of the Platte and its tributaries have over a million cattle grazing in them.

That the volume of our present large export movement will be sustained and increased appears probable from the fact of our annually increasing crops, our vast undeveloped resources, and the stimulus which the exportation of all sorts of food products, especially wheat, corn, and animals, has received from the reduced cost of transportation from the interior to the seaboard."

"TRADE IN OUR FAVOR.—The complaints we hear every day of the dullness of trade, of glutted markets, of long-continued over production, and of injurious foreign competition, are not so loud as those which are now poured forth by the press and people of England, and which also resound throughout the continent of Europe. Our business depression, moreover, is relieved by our enormous exports of domestic produce, which are greatly in excess of our imports, while in England and France the exports are declining and the imports increasing.

The Associated Chambers of Commerce of England held their autumnal meeting at Sheffield last month, and the debates of the representatives from all the great centres of trade of the kingdom expressed both anxiety and despondency. "Instead of making commercial progress," said one of the delegates, "England is retrograding." From 1842 to 1872 British trade made a marvellous advance, but since 1872 the exports have declined in value from \$1,230,000,000 to \$990,000,000, and meantime, too, the imports of manufactured goods are increasing, and our grain is now steadily pouring in at an unprecedented rate.

A report presented to the French Senate last May by a committee appointed to inquire into the causes of the existing commercial suffering, showed an astonishing change in the relative amounts of exports and imports. From 1872 to 1875 the exports of France exceeded the imports by sums varying from about \$40,000,000 to \$70,000,000. In 1876 the tide turned, the imports exceeding the exports by \$80,000,000; and in the first four months of the present year that excess already reached \$70,000,000. At Aubusson the famous manufacture of carpets is declared to be extinguished by the competition of English and Oriental carpets, and it is well known that the advance in the carpet manufacture of the United States has been prodigious within ten or fifteen years. In cotton velvets the English have flooded the markets and ruined one of the industries of Amiens. The makers of looms and engines at Rouen cry out that their trade is reduced to a most precarious condition by the competition of England, Belgium, and Switzerland. The whole report, in the words of Mr. JOHN MORLEY, "is one long moan over the ruin that is being brought on French industry by triumphant foreigners."

Last month the Iron and Steel Institute of Europe held its annual meeting in Paris, and was numerously attended by members from England and the Continent, making it the most remarkable gathering of the Society ever yet held. There, too, the groans over the depression of trade, and the iron trade in particular, were long and loud. The meeting was presided over by the distinguished metallurgist, Dr. SIEMENS, who referred to his inaugural address, delivered eighteen months before, in which he had dwelt upon the stagnation in the steel and iron trade of the world, saying that few present would have thought at that time that so far from selling prices having reached their lowest point, they were then only upon the middle of a descending incline. Foreign competition was the first and main cause assigned by Dr. SIEMENS for the current low prices. "That depression," says the London *Iron*, speaking of these remarks, "has increased since then to a degree which must have startled the bold prophets of evil who feared in 1877 that the worst had not come," and "that the horizon still shows but few signs of brightening, are points on which masters and men are agreed."

The reports from the iron districts of England are all gloomy. Stocks are excessive, prices continue low, and business is in an unsatisfactory condition. The only chance of a permanent return of prosperity for English ironmasters consists in such a great increase of consumption taking place that the relighting of a hundred furnaces could not do more than supply the demand, and of this there is little hope. The United States demand for rails, both of steel and of iron, is gone permanently, and the rail trade has become to be the mainstay of the largest

English establishments. We can already produce more rails than we require, and new markets are not easy to find. Extensions of the German railway system are projected, but they will not benefit English manufacturers, who console themselves, however, with hopes of orders from Bulgaria and Asia Minor, but there is not very much that is substantial to found the anticipations upon. China and Japan are likely to need rails largely in the course of years, but they have resources of their own in coal and iron, and, moreover, we also shall be in a condition to compete briskly for their custom when it springs up into importance.

We are happily enabled to turn from this gloomy picture of the state of trade in England to a brighter one furnished at home. So far from declining, our exports are rapidly advancing, and our imports continue to fall far below them. Our imports of merchandise for July were nearly four millions short of those for the same month of 1877, and for August about two and a quarter millions less, while the exports of goods in July were over nine millions and in August nearly sixteen and a half millions greater than in the same months of 1877. The decreased movement of goods importation has continued up to this time, while the exports have gone on swelling in amount and in value. The decline in importations as compared with 1876, began in November, 1877, and has gone on steadily since, the exports meantime being largely on the increase, every month of 1878 showing a decided gain over either of the two preceding years. For the eight months of this year up to September our goods imports declined over \$49,000,000, and our goods exports increased \$100,000,000, the net change thus being at the rate of nearly \$223,000,000 per year. Including specie, the excess of exports is \$189,122,000 for the eight months, against \$64,415,000 for the same time in 1877, being a gain of \$124,706,000. If this rate is maintained, as it seems likely to be, we shall have a trade balance for the whole year of \$289,000,000. For the eight months, too, our net export of specie was only \$621,282, while for the same period last year it was more than \$25,000,000, the exports having been \$18,000,000 less, and the imports \$6,000,000 more, than in 1877.

These are surprising figures, well worth the study of every man. They indicate that so far from needing to manufacture a fictitious prosperity, we have only to go on working and economizing to grasp in full measure that which is real."

The two articles above quoted we take from late numbers of the *New York Sun*, and are thankful for the pleasure of reproducing them. They show that the country is not gone yet by a good deal—nay more, that if trade keeps on, at anything like the same rate, in our favor, the days of our groaning will not last much longer. We see, also, that other people are by no means enjoying an immunity from trouble, and that they are nothing like as well able to stand it as we are.

Good healthy business and peace always go together. War destroys interests as well as men. Let us see what has taken place in this way since 1860. The civil war in the United States; the war between Prussia and Denmark; between Prussia and Austria; between Germany and France; between Russia and Turkey; between Spain and Cuba; between Brazil and Paraguay; small rubs between England and sundry African tribes; between Russia and sundry Asiatic tribes, and the chronic bloodshed in Mexico and the South American republics. Now, all this constitutes a prime factor in the derangement of business throughout the world, and such derangements time only can cure. The present condition of things in England shows how she is suffering from it, and she has been the brag nation this many a year in the money-making line.

Through improved machinery, in all directions, our producing capacity has gone beyond our ability to manage what is produced, especially in manufactured articles. There is, therefore, a universal scramble among sellers to find a market for their goods; if all hands were at work the case would be worse, unless our ability to find buyers in other countries kept pace with this production. We see, from the manner in which our exports are increasing, that these foreign buyers are being found; and it would seem to follow that our chief business, looking to

a facilitation of this movement, was to make everything bearing upon these exchanges as comfortable as possible. If these exchanges are operated on a specie basis, and we know, by general consent, they are, of course it is to our interest to do nothing that would hinder them. This has become the easier now that paper and specie have come together. One of the profoundest investigators in this country, Mr. EDWARD ATKINSON, of Boston, President of the New England Cotton Manufacturers' Association, found two years ago that 90 per cent. of our productive power would furnish all we could then consume and export. We need somebody to buy all that the whole hundred per cent. can produce, and these buyers, as our increased exports show, are turning up.

To facilitate our domestic exchanges we want no flood of greenbacks, but rather the removal of the ten per cent. tax on State bank issues, when each portion of the country will arrange matters in this way to suit itself. In the North and East, where population is dense, business is chiefly done through deposits and checks. If they want to retain the National Banks there, let them do it; that's their business. In the South, on the contrary, where population is sparse, circulation is what is needed, and this circulation commandable at low rates of interest. In the August number we had something to say on the State bank question, and we have no reason to change our mind. It is folly to say that the greenback and National bank note will go anywhere in the United States; let any man try to pay a debt with either in California and he will see. If California can take care of her own currency, any other State can, provided, of course, it is on a basis of safety. On a basis of three to one of specie, the notes redeemable at the will of the holder, it is safe, assuming the managers of the banks to be taken from the regular run of business men and not from the penitentiary. As the borrower of these notes would give security on a gold basis for every dollar covered by his obligation, it would be his interest to minister in every way in his power to their solvency. Because the Glasgow Bank failed, does not prove that the Scotch system is a bad one; the Ocean National Bank of New York, and the National Bank of the State of New York, and the Merchants' National Bank of Washington, all big banks, failed too. We all know the history of the Merchants' National Bank of Petersburg. When the managers of any bank become wild speculators its doom is sealed, no matter under what system it is operated.

We want, in our domestic exchanges, in few words, a better distribution of facilities, and each State left to itself will do the work. Under the present system, New York is made, perforce, the great gulf that receives the ready money of this country. To make the United States the only issuer of paper money, in conjunction with its other powers, renders the centralization of power in the General Government absolute, the talk about State sovereignty the merest twaddle, and the maintenance of State governments an expensive farce. We want to see the name of the General Government on no circulating medium but "the coin of the realm." Anywhere else but there it is utterly without warrant in the Constitution, and is subversive, through the fearful power it wields, of the liberties of the people.

WE call attention of those needing a pure article of Virginia Rye Whiskey to the article made by Messrs. GOODYEAR & McNEALE, of Charlottesville. Physicians sometimes prescribe the article as a medicine, and as such we have tried this brand, and can testify to its purity and suitability for sickness.

THE TRUCKING BUSINESS AT NORFOLK, VA.

On the 12th ultimo, the fall meeting of the Norfolk Horticultural and Pomological Society took place, with G. F. B. LEIGHTON, Esq., President, in the chair. Mr. LEIGHTON delivered an admirable address, in which he presented, in detail, the truck movement from Norfolk during the seven months from March 1, to September 30, 1878. The following will show the totals:

ARTICLES.	Total Packages all Kinds.	Value in Dollars and Cents.
Apples.....	20,714	\$ 34,986 57
Asparagus.....	3,337	31,703 00
Beans.....	54,974	84,211 15
Beets.....	2,913	4,372 06
Blackberries.....	194	480 48
Cabbage.....	160,640	121,283 20
Cauliflower.....	132	528 00
Canteloupes.....	776	1,499 00
Cherries.....	177	354 00
Citron.....	4,239	6,234 00
Cymlings.....	200	168 00
Cucumbers.....	35,094	23,991 50
Damsons.....	91	360 93
Egg Plant.....	44	37 50
Fruit.....	87	174 00
Gooseberries.....	486	1,209 60
Grapes.....	2,697	6,472 80
Green Corn.....	16	28 50
Kale.....	55,008	23,378 40
Lettuce.....	2,807	13,470 00
Melons.....	.....	25,682 48
Onions.....	6,541	12,263 30
Peaches.....	6,913	8,818 75
Pears.....	2,574	5,227 25
Peas.....	84,313	99,690 39
Plums.....	133	532 00
Potatoes, Irish.....	237,384	319,068 77
Potatoes, Sweet.....	118,225	147,781 25
Radishes.....	15,490	22,467 00
Strawberries.....	63,125	222,534 00
Snaps.....	359	423 00
Spinach.....	2,556	4,473 00
Squash.....	7,892	7,893 75
Turnips.....	1,243	1,745 25
Tomatoes.....	230,394	115,233 00
Total.....	1,121,760	\$1,348,775 88

The foregoing covers only the trucks shipped by steamer. Mr. LEIGHTON observed: "The number of watermelons shipped to Boston may be received as an index of those shipped by sail to New York. The crops uncovered by the report, and shipped by sail, will swell the aggregate exports not less than \$387,000. It is gratifying to learn that with such an extensive crop the returns have been the most satisfactory to the producers of any in the past several years. It is safe to predict that the coming decade will equal the past in the advancement of this interest. The renovation of the soil, the adaptation of fertilizers to our crops, and the importance of drainage, are studied with more intelligence from year to year,

resulting, at least in part, from increased agricultural reading, consultation, &c." [Speaking of "agricultural reading," a friend of ours, some months ago, on a court day in a certain Virginia county, undertook to secure some new subscribers to the *Planter*. He approached a man who had both sons and daughters, and finding he took no agricultural publication, pressed him to subscribe. He plead poverty; but before he left that court green to go home, he had spent six times the subscription price in drinks for himself and friends.]

Such an exhibit, as is presented in the foregoing, fills our heart with gladness. It shows what can be done if men only will that it shall be done. Those truckers did not wait for people to come to them for their products, but they looked after and *found* their customers. Their shipments go to Boston, Providence, New York, Philadelphia, Baltimore, Washington, Alexandria, Richmond, &c., Quoting Mr. LEIGHTON again: "Necessity has forced the construction of larger and better adapted steamers to this important interest. The question often comes up, Who consumes all of this? The solution is the result of rapid and cheap transportation, which virtually abolishes all lines of latitude. In looking through our own market how often do we see Northern cabbages, Irish potatoes, apples, &c. It is simply giving and taking, guided by the laws of climate, and enabling us to enjoy the year through what was formerly confined to a few months, and furnishing our most northerly friends a mutual advantage."

We thus see why no community need be isolated in these days. By proper effort it can make its range of operation as large as it pleases. We hope what we have here presented, in connection with the labors of our Norfolk friends, may prove a valuable lesson to others pursuing the same calling, but showing less satisfactory results. Would a Horticultural and Pomological Society be of no service say to the truckers around Richmond?

The next thing for Norfolk to do is to make that place the "head-centre" of the canning business in this country. Her ships now go everywhere North and in Europe. Why not make canned goods a portion of the cargo of every one of them? We can't tell what we can do until we try. This is a big world, and while it lasts people will eat. They may do with less clothing, but few of them are disposed to die in debt to their stomachs.

COL. S. W. FICKLIN is the right man at the right place, at the head of the Stock Department at our State Fair. No one has worked harder for the prosperity of the Society than he. We notice several articles from him of late in the Charlottesville papers, urging upon the farmers of Albemarle to become life members and not forego attendance on the coming Fair. The Colonel is an earnest and untiring worker in every interest pertaining to the agricultural interest of the State.

HOLKHAM.—We had the pleasure of visiting this noted farm of Dr. JOHN R. WOODS of late, and seeing his fine breeds of Shropshires, Southdowns and Cotswolds. The Doctor has a national reputation as breeder of fine sheep, which is his favorite stock, though he has fine herds of Shorthorns and other cattle. Our friend, Colonel FICKLIN, who did us the kindness to drive us out in his buggy to HOLKHAM from BELMONT, agreed with us that the Doctor has few equals as a farmer, and that he is rapidly bringing his farm into the highest state of improvement. Dr. Woods is a great believer in orchard grass as a permanent sod, and has a great portion of his lands set in this grass. The Doctor is a fine writer on agriculture, and we notice that he is doing a good deal of it for Northern papers. We hope he will sometimes honor the *Planter* with an article.

ST. JAMES HOTEL has been recently repaired and improved, and we do not hesitate to say that it is now equal to any in the city in every particular, and to commend it to such of our friends as may have occasion to stop at a Richmond hotel. It is beautifully located, overlooking the Capitol Square, and convenient to our business houses. Col. T. W. HOENNIGER, its courteous proprietor, is unwearied in his endeavors to make his guests comfortable and at home. The Colonel is not only a prince of hotel keepers, but is a fine farmer.

WE regret that the article of Dr. PENDLETON, referred to by Dr. ELLZEY, in the Stock Department of this number, has been left out on account of the heavy pressure of matter on our pages. It will appear in our next number.

THE ninth annual session of the Medical Society of Virginia was held in the hall of the House of Delegates on the 22d ultimo.

Dr. M. G. ELLZEY delivered the public address before the Society, embodying many eloquent thoughts on the life-work of the modern physician—as a member of and affecting society, the sacred nature of the confidence to which he is admitted, and his imperative duty to sustain the lofty character of Christian gentleman without blemish and without reproach. It was pronounced by our medical friends as the best address ever delivered before the Society.

WE copy the following from the *State*, as expressing our full and sincere condolence for our respected *confrere*, the senior editor of the *Dispatch*, in the sad domestic affliction which has recently befallen his household :

“So recently bereaved in the loss of a bright, noble, and favored son, this latest visitation by which he is deprived of the loved companion of his long life, the sharer of his joys and sorrows, the wife of his bosom, who had kept him company thus far in the journey of life, will be doubly felt in his advanced years. Mrs. COWARDIN was a lady possessing the rarest Christian virtues and most estimable social qualities, and although suffering long from the attack which at last has proved fatal, she bore her afflictions with patient resignation, and yielded up her life, still in comparative youth, with the single regret that she must leave so many behind whom she greatly loved, by whom she was greatly loved in return, and to whom her death is an irreparable loss. The entire community unite in regrets and honors to the dead, and in the silent, but eloquent expression of profoundest sympathy for the living.”

IN the article of Miss LELLA PENDLETON, in the October number, page 545, for “from 25 hens I gathered two dozen eggs,” read “from 25 hens I gathered *twenty-one* dozen eggs.”

WE had a pleasant call from our friend, Dr. JOHN L. APPERSON, President of the Abingdon Medical Society, and Secretary of the Smythe County Farmers Club. The Doctor's fine medical abilities, with his intelligent energy in all the agricultural improvements of his section, points him out as a rising young man, destined to make no slight impression on that great section of the State.

“GENL. R. L. T. BEALE, our regular nominee of the 1st Congressional District, has been making vigorous and statesman-like speeches, and will carry the District by a large majority.” There is not a purer and abler statesman than General BEALE in the State. His articles to the *Planter* show that he is no less a farmer, and that he will represent their interest in Congress.

TESTIMONY TO THE FOOD CURE SYSTEM, As practiced by Dr. Blanchard, is coming from many of the most eminent of the medical profession, as well as the numerous invalids that have been benefited by the concentrated liquid foods that are the specialties of the Blanchard Food Cure Company, 27 Union Square, New-York. Dr. Egbert Gurnsey, one of the most eminent physicians of the city, says that from the practical tests he has given the Blanchard Food he believes they will prove of great value to the invalid and should be endorsed by the whole medical profession.

There is no doubt that Dr. Blanchard's research and practical demonstration of the curative effects of food elements is destined to work a great change in the medical practice and be the means of restoring health and happiness to many invalids now vainly seeking health through the drug system. Many cases are reported of wonderful benefits derived.—*N. Y. School Journal.*

New York, Nov. 26, 1877.

Dr. V. W. Blanchard: During the past year I have prescribed your various preparations of Food Cure, and feel happy to say they have met my most sanguine expectations, giving to patients long enfeebled by blood poison, chronic disease, or over drug dosing, the needed nutrition and nerve force.

Prof. CLEMENCE S. LOZIER, M. D.,

Dean of Hom. Med. College and Hospital for women, New York City.

PARTICULARS OF A FARM FOR SALE IN THE PIEDMONT SECTION OF VIRGINIA.

The Farm contains 513 acres, of which all but about 80 are cleared. It is situated in a most healthy neighborhood, at the foot of the Southwest Mountains. The property adjoins Gordonsville, a rising town of nearly 2,000 inhabitants, with churches, public and private schools, numerous stores, hotels, &c., and is within half a mile of the railway depots of the lines of railway running to all points, which pass through the town. Gordonsville is seventy-six miles from Richmond, ninety miles from Alexandria, ninety-seven from Washington, and one hundred and thirty miles from Baltimore, at all of which places there are good markets for all kinds of produce.

The buildings on the farm consist of a comfortable house, very prettily situated in a grove of trees, fronted by a lawn and flower border, and contains 10 rooms, with large entrance hall, verandah and 2 cellars; a tenant's house, with outbuilding; 3 laborers' houses, poultry, wood, ice, tool and carriage houses; stabling for 10 horses; corn-house, granary, meat-house, one large barn (80x60 feet); one smaller barn, together with cattle and sheep yards, surrounded by covered sheds. Adjoining the barn is the engine shed, containing a twelve-horse power stationary engine, with shafting and belting complete, together with the following machinery worked by it: Corn Mill, Feed Cutter, 2 Cord-wood Saws, 1 Rip Saw, Grindstone. Grain Separator, Grass and Clover Seed Thresher. All the above are in good working order.

Near the House is the Kitchen Garden and Orchard of Apple, Peach, Cherry and other trees in full bearing. The property is well fenced and drained, and is divided into enclosures of about 50 acres, each field having a never-failing stream of water running through it. There is a pump of spring water near the house, one in the stock yard, and another in the engine-house. The farm is bounded on the south by the high road to Orange Courthouse, and on the west by the high road to Liberty Mills and the Valley District; it adjoins the vineyard of Dr. Cadmus, and much of the land is well suited to the growth of vines.

Nearly all the land is in Grass and Clover, and the property is admirably adapted for a Stock or Sheep Farm.

With the property the purchaser will be required to take, at a fair valuation, the Live Stock, Implements, &c., about 120 tons of well-cured hay, a quantity of other feed, together with the growing crops. The purchaser will have the option of taking the House Furniture on the same terms.

The price of the land and buildings is \$30 per acre (less than two-thirds of the cost to the present owner within the last four years), and \$1000 in addition for the engine and machinery as above.

The purchase money, in all \$16,390, may be paid as follows: \$4,390 cash, and \$800 a year for fifteen years, with interest at the rate of 6 per cent. per annum on balance unpaid. These terms will remain open until December 31, 1878.

DICKINSON & CHEWNING, Richmond, Va.

We are well acquainted with this farm, and think it very cheap.—D. & C.

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1518-20 Franklin Street, - Richmond, Va.

Sole Manufacturers of WATT PLOWS and WATT'S PATENT FLEXIBLE HARROW.

WATT PLOWS THE BEST AND CHEAPEST IN USE.

First Premiums on Two, Three and Four-Horse Plows at last Virginia State Fair. First Premiums on One, Three and Four-Horse at Lynchburg. Seven First Premiums at last North Carolina State Fair, over all competitors, being the Fifth successive year that these Plows have swept the field there. First Premiums on One and Two-Horse Plows at Weldon, N. C. First Premiums on One and Two-Horse Plows at South Carolina State Fair. First Premiums at Atlanta, Ga., Orangeburg and Cheraw, S. C.

They are guaranteed to work in *sandy, clay and hard land*; in *sod, stubble, or weeds* of the heaviest growth, and with

Less Draught than any Plow in Use.

In buying duplicate castings for Watt Plows, all parties are warned to use only those bearing this TRADE MARK.



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The only complete Machine for drawing water with a bucket. THE CRANK DOES NOT REVOLVE WHEN THE BUCKET DESCENDS. Prices lower than any other.

BIG GIANT CORN MILL.

The only Mill grinding corn and cob successfully, that will grind Shelled Corn fine enough for family use. GRINDS TWICE AS FAST as any other mill of same size and price.

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FORCE FEED GRAIN DRILL,

Warranted to sow

Wheat, Rye, Oats, Barley, Timothy & Clover Seed.

CAN BE REGULATED IN A MOMENT.

THEY NEVER CHOKE UP, WHILE FOR REGULARITY AND EVENNESS IN SOWING THEY ARE UNRIVALED BY ANY OTHER DRILL NOW MADE.

ILLUSTRATED CATALOGUE sent to any address. Liberal discount to merchants.

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PREPARED AGRICULTURAL LIME.

FOR THE

WHEAT CROP.

Pronounced the Best Fertilizer for Wheat by the largest and most practical and intelligent farmers in Virginia and North Carolina. Among them, Dr. R. H. Stuart, of King George county, Virginia, and Col. Thomas M. Holt, President of the North Carolina State Agricultural Society. It has been tried on every variety of soil, and proved not only beneficial to the growing crops, but those who used it two years ago say they never had such crops of Clover and Grass on the same land as they had this year, and that without the application of any fertilizer since the prepared Lime was applied.

Price, only \$12 per ton. Prepared and sold by

A. S. LEE, Richmond, Va.

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The Mapes Formula AND Peruvian Guano Co.

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AGRICULTURAL CHEMICALS A SPECIALTY.

MURIATE OF POTASH (80 per cent.) price per single ton, \$35. This is equal to but $3\frac{1}{2}$ cents per pound for actual potash, while in Kainit at fifteen dollars per ton, the actual potash costs nearly six cents per pound.

Nitrate of Soda, Sulphate of Ammonia, Dissolved Pure, Fine Bone, High Grade Sulphate of Potash, Genuine No. 1 Peruvian Guano,

direct from Government Stores, *all at lowest cash market prices.*

Manufacturers of Mapes' Complete and Special Manures—Tobacco, Corn, etc.—Prof. Villes' Formulas, etc.

Experimental Sets of Fertilizers for Testing Soils—Price \$5 per set of four bags.—See *American Agriculturist*, August number, pages 282 and 311.

MAPES' COMPLETE MANURE for Corn produces 75, 90 and 100 bushels Shelled Corn per acre. See Address of Dr. HENRY STEWART, Asst. Ed. *American Agriculturist*, before Farmers' Club, American Institute, New York (weekly Ed. *New York World*, July 31st).

Very low rates of freight both by Steamer and Sail from New York to Richmond, Va., Wilmington, N. C., &c.

BELMONT

STOCK FARM.

This farm was commenced by me as such in 1847, and has improved with the age. Trying various breeds of horses, cattle and hogs, I aimed to get good breeders and of best kinds, and raised them with tolerable care, often too lean for rapid and popular development, and they are the better for the change of homes and acclimation when sold and sent away. I have owned and bred from the best stallions, thoroughbreds of the riding-horse type; and of them, Granite had fine trotting style and action, Black Hawk of like kind and of Morgan descent and the *best*, leaving me many fine animals and Albanian, a superb representative stallion.

A Percheron-Norman importation of two stallions and two mares in 1866 came at a time after the destruction by war of horse stock, and the changed condition of things made them more needed and popular. I have also five full Percheron stallions one half bred, several under service-age, and a half bred rising four years, out of Dew Drop, thoroughbred, s^{he} by Imported Australian, and a Clydesdale stallion rising four years, a rival of the Percherons for draught purposes. Also a young stallion, Granite, Jr., by a thoroughbred and out of a double Black Hawk mare, and promises to be a rapid stylish riding and driving horse of the best trotting cross.

I will sell any of the stallions to clubs, by which they may easily and soon clear first cost of them.

If not sold by March, will let them on safe and living terms, to establish the fact that they are suited to the times we live in, and should be propagated.

My geldings and fillies are grazed on the high table land of the Blue Ridge mountain from May to November, and on an elevation and sod that tends to make the best horse flesh for muscle and endurance.

My cattle are the *purest* Shorthorns of popular families, and too hard fare for successful sales, but they came from such sires and dams, there will be no disappointment in breeding from them. Of these, like the horses, they can be had of any age and at low prices, as compared with like stock elsewhere.

Chester White and Berkshire swine are my favorites; there may be as good of others for our purposes, but I never saw their superiors for the average farmer's wants of our country.

I have bred nearly every animal I own, and will sell those that I *know* to be what they are *represented*.

Persons interested in fine stock can send for catalogues.

S. W. FICKLIN, Belmont Stock Farm,
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is a pure concentrated liquid food prepared directly from the Wheat Kernel, without fermentation, and retaining all of its Blood, Nerve and Brain restoring elements in a natural state of vitalization.

Nervous debility, which underlies all forms of chronic disease, is speedily overcome by the use of this Food.

"For the year past, I have constantly prescribed THE BLANCHARD BLOOD AND NERVE FOOD to my patients of all ages, from eighteen months to eighty-three years. In every case the result has been exactly that claimed by you. It is, by far, the most valuable and reliable tonic I have ever met with."

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Food at Last a Substitute for Drugs.

Food is made a curative agent by concentration and artificial digestion, and it is so simple in its application that the advice of physicians is not required.

Thousands of recoveries from chronic diseases are reported, where the best medical skill has failed.

Many of the best physicians throughout the country are discarding drugs and using the BLANCHARD BLOOD AND NERVE FOOD with the most gratifying results, permanently relieving all forms of physical and mental debility. The Dyspeptic and Consumptive patient, sufferers from Malarial or Blood Poisoning, together with the entire list of complaints peculiar to the female sex, find in the use of this Food sure and speedy relief.

NEW YORK, November 26, 1877.

DR. V. W. BLANCHARD: During the past year I have prescribed your various preparations of Food Cure, and feel happy to say they have met my most sanguine expectations, giving to patients long enfeebled by blood poison, chronic disease, or over drug dosing, the needed nutrition and nerve force.

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Dean of Hom. Med. College and Hospital for Women, New York City.

Hundreds of cases of Bright's Disease of the Kidneys have been reported cured. For Neuralgic and Rheumatic Diseases, it is almost a specific. Physical and Mental Debility from the use of Alcohol, Opium and Tobacco, or from any unnamable cause, find in this Food a natural and potent remedy. For the intellectual worker,

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As a remedy for the loss of appetite and want of vigor, physical and mental, in children, this Food has no rival.

\$1 Per Bottle, or Six for \$5.

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Or sent by Express on receipt of Price.

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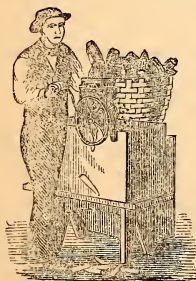
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Herd Register JERSEY CATTLE and

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THE TOWANDA EUREKA MOWER, which took a diploma at our last Fair, and we believe superior to all others now on the market. It tedders the hay after cutting it, which causes it to cure in one-third less time than after other mowers, and is *remarkable* for its ease of draft.

RUSSELL'S CELEBRATED MASSILLON THRESHER, worked either by steam or horses.

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The superior Light Running, Durable and Cheap

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No preparation has ever performed such marvellous cures, or maintained so wide a reputation as AYER'S CHERRY PECTORAL, which is recognized as the world's remedy for all diseases of the throat and lungs. Its long-continued series of wonderful cures in all climates has made it universally known as a safe and reliable agent to employ. Against ordinary colds, which are the forerunners of most serious disorders, it acts speedily and surely, always relieving suffering, and often saving life. The protection it affords, by its timely use in the throat and lung disorders of children, makes it an invaluable remedy to be kept always on hand in every home. No person can afford to be without it, and those who have once used it never will. From their knowledge of its composition and effects, Physicians use the CHERRY PECTORAL extensively in their practice, and Clergymen recommend it. It is absolutely certain in its remedial effects, and will always cure where cures are possible.

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Great Northern and Southern Nursery,
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Grand Pianos cost
\$1,600 only \$425. Superb Grand Square Pianos, cost \$1,100 only \$255. Elegant Upright Pianos, cost \$800 only \$155. New Style Upright Pianos, \$112.50. Organs, \$35. Organs, 12 stops, \$72.50. Church Organs, 16 stops, cost \$390, only \$115. Elegant \$375 Mirror Top Organs, only \$105. Tremendous sacrifice to close our present stock. Immense New Steam Factory soon to be erected. Newspaper with much information about cost Pianos and Organs Sent Free. Please address DANIEL F. BEATTY, Washington, N. J. sept-3t

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REGISTERED JERSEYS from choice stock Bulls, Cows and Heifers. Calves of both sexes. Prices reasonable.

Catalogues furnished on application.

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THOROUGHbred ESSEX PIGS FOR SALE, bred from Prize Winners at the State Fair of 1876.

This family of Essex is a cross of the importations of Joseph Harris and Samuel Thorne, and is of the most superior quality. A trial of them will convince the most incredulous that the Essex is the best hog for the Virginia farmer. Prices to suit the times.

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I have some good Berkshire Pigs of different ages, and two Berkshire Boars twelve months old, for sale. Prices moderate. Address

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25 Fashionable Cards, no 2 alike, with name, 10c. 20 Scroll, with name, 10c. post-paid. GEO. I. REED & Co.,
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\$12 a day at home. Agents wanted. Outfit and terms free. TRUE & CO., Augusta, Maine. jan-1y

THOROUGHbred BERKSHIRE PIGS FOR SALE.

Bred from stock imported by T. S. Cooper, of Pennsylvania. Prices, pedigrees, &c., upon application to

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W. W. ESTILL,
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ELMWOOD FLOCK of COTSWOLDS.

From Imported Stock. Young Stock
Dec-1y For Sale.

Fine Stock and Eggs FOR SALE.

BERKSHIRE PIGS from pedigree stock \$25 per pair.

ESSEX PIGS of the best strains, \$25 per pair.

HOUDAN and BLACK B. R. GAME EGGS at \$3 per dozen. All warranted genuine. L. R. DICKINSON.

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The RECORDER, is printed in clear, bold type on beautiful white paper, pasted and trimmed so as to open and fold like a book. While looking to the interests of the Baptist denomination, the RECORDER contains a large amount of general reading, much space and attention being given the Sunday-school, Family and Agricultural Departments. Terms, \$2.50 a year, in advance; \$2 to ministers. Sample copies sent free.

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The undersigned offers a fine stock of the following at low rates:

JAPANESE PERSIMMONS or KAKI—8 choice varieties.

PEARS—Standards and Dwarfs; an immense stock of fine trees.

NEW PEACHES—Alexander, Downing, Wilder, &c.; also the fine new late varieties.

FRUIT TREES of all kinds; an extensive stock, viz: Plums, Cherries, Apricots. Apples suitable to the South, &c.

Grape Vines, Strawberries, Raspberries, &c. Evergreens, new Ornamental Trees, new Shrubs, &c. Small sizes suitable for Nurserymen, as well as large stock in great variety.

DUTCH BULBS.

Large importations direct from the leading growers in Holland. First-quality Bulbs, Hyacinths, Lillies, Tulips, &c.

New and rare Greenhouse Plants; a very rich collection well grown, as well as fine stock for winter blooming.

NEW ROSES—Duchess of Edinburg, Perledes Jardins; and with an immense stock of finest varieties grown in pots and open ground.

New Wistarias, new Clematis, new Pelargoniums, Geraniums, &c.

Catalogue mailed to applicants.

sept-3t

JOHN SAUL, Washington, D. C.

PURE BRED SOUTHDOWN SHEEP.

I have for sale 2 Southdown rams 2 years old.

9 " " 1 " "

35 " " lambs.

60 Southdown ewes.

Lambs, yearlings and two-year olds at prices to suit the times.

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JOHN S. BARBOUR, RECEIVER.

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On and after Sunday, June 9, 1878, Passenger Trains will run as follows :

SOUTH BOUND.	MAIL.	EXPRESS.
Washington..... le	6 35 a. m.	9 35 p. m.
Alexandria.....	7 00 “	10 00 “
Gordonsville.....	10 44 “	1 25 a. m.
Charlottesville.....	11 34 “	2 15 “
Lynchburg..... ar	2 20 p. m.	4 32 “
Danville.....	6 07 “	6 52 “
North Danville.....	6 15 “	6 55 “
NORTH BOUND.	MAIL.	EXPRESS.
North Danville..... le	9 25 a. m.	10 00 p. m.
Danville.....	9 33 “	10 13 “
Lynchburg.....	1 20 p. m.	12 23 a. m.
Charlottesville.....	4 02 “	2 45 “
Gordonsville.....	4 52 “	3 35 “
Alexandria..... ar	8 50 “	7 35 “
Washington.....	9 15 “	8 00 “

The MAIL SOUTHWARD connects at Gordonsville with Chesapeake and Ohio Railroad for Staunton, White Sulphur Springs, and all the watering places on that line; and Eastward to Richmond and South. At Lynchburg, connects with Atlantic, Mississippi & Ohio Railroad through Southwest Virginia to Nashville, New Orleans, Memphis, Little Rock and Texas; and at Danville, with Richmond & Danville Railroad for the South and Southwest.

The EXPRESS Southward connects at Gordonsville to all points East and West on Chesapeake & Ohio Railroad, and at Danville with Richmond and Danville Railroad for the Carolinas, Georgia, Florida and via Atlanta to New Orleans.

Passengers for MANASSAS LINE leave Washington at 6 35 a. m. and Alexandria 7 00 a. m. *daily*, except Sunday, arrive at Strasburg at 12 00 a. m., connecting with the Valley Road to Orkney and Rawley Springs, and all the line East and West. Leave Strasburg at 3 20 p. m., Front Royal at 4 00 p. m., connecting at Manassas with north bound mail train for Washington and North.

For WARRENTON leave Washington 6 35 a. m., and Alexandria 7 00 a. m., *daily*.

All trains make good connections at Washington, to and from North and West.

New Orleans sleeper leaves Washington at 6 35 a. m., running through without change.

Through sleeper for Savannah, Ga., leaves Washington 9 35 p. m.

Through tickets sold at the lowest rates

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FOR THE
Wheat and Grass
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My flock of ANGORA GOATS has now been kept in Virginia for eight years, are thoroughly acclimated, prove hardy and prolific. They are very fond of weeds, brush, briars, &c., and will therefore live and thrive on the poorest of land, and in clearing and improving such land, they prove invaluable. They shear yearly from four to eight pounds of mohair as white as snow and as fine as silk. Specimens from my flock have never failed to take first premiums at all Fair, where they have been exhibited. Goats bred in this country are even superior to those imported from Asia Minor, which proves how thoroughly they are adapted to this country and climate. To any person wishing to procure stock of this kind, strictly pure and first class, I offer an opportunity at a lower rate than can be had any where else in the United States. Address. **F. S. FULMER**, Importer and Breeder of Pure Angora Goats, Spring Mills, Appomattox Co., Va. Please state that this notice was seen in the *Planter and Farmer*. dec-1y

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AND

PURE SHORTHORN CATTLE

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The breed of FOWLS best suited to Virginia and the Southern States. LAY LARGE, RICH EGGS, GROW RAPIDLY, FATTEN EASILY. They are THE FINEST TABLE FOWL IN THE WORLD. My birds won all of the premiums for this variety at the Poultry Exhibition in Richmond. EGGS ONLY \$2.50 A DOZEN.

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THE GREAT FARMER'S PIG!

This pig was originated by the farmers of Southern N. J., and by them has been bred to its present high standard of excellence.

Mine are from the best and oldest breeders in New Jersey. In order to introduce them into Virginia, I offer young pigs, when two months old, at only \$12 a pair!

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I am breeding Thoroughbred Devon Cattle, Merino Sheep, Poland-China, Essex and Berkshire Hogs. Also Light Brahmas, White-faced Black Spanish, White Leghorns, Pekin Ducks and Bronze Turkeys.

My stock took many first premiums at the Piedmont and State Fairs.

I have selected my stock with great care from the best herds in the United States, and intend to be excelled by no one.

I have just added to my stock a flock of SOUTHDOWN SHEEP.

Orders solicited and satisfaction guaranteed. Address

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jan-1y

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We furnish printed Blanks for selling Rights. MANN & CO., Patent Agents, 116 W. Baltimore St., opposite Sun Iron Building, BALTIMORE, MD. sept-1y.

GREEN SPRINGS ACADEMY.

The fifth session of this institution will open on the 1st October, 1878, and close 1st June, 1879.

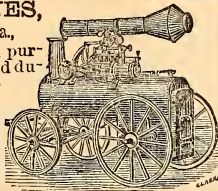
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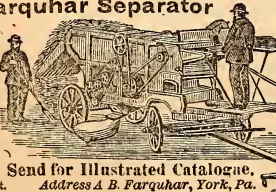
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One BOAR 16 months old, \$16, an other 4½ months old, \$8. PIGS four months old, \$6 each.
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Registered Jersey Cattle will, at all times, furnish animals of both sexes and of unequal merit.

Registered Berkshires, Shetland Ponies, South-down Sheep, Arab Horses, and Game Chickens.
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ALL SIZES AT LOW PRICES.

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Thoroughbred Shorthorn Cattle Merino Sheep and Berkshire Pigs bred and for sale at very moderate prices by S. S. BRADFORD,

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Ten Thoroughbred Yearling Cotswold Rams, by my Imported Buck, "Earl of Warwick," out of English and American bred ewes—the last equal to the first. R. B. HAXALL, may-8t near Gordonsville, Va.

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Insures property in city and country against loss or damage by fire.

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Standard Pear Trees a Specialty. Send stamp for Trade List. Agents wanted.

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FOR LESS THAN FIFTEEN DOLLARS we agree to sell you enough PURE CHEMICALS to make a ton (2200 lbs.) of MANURE that will make you as much Wheat, Corn, Oats, Potatoes, and Tobacco as any manipulated Fertilizer offered in the market at forty to forty-five dollars. For this remarkable statement we offer you the very best references in your State, which you will find by writing for circular, also formula with instructions, &c. The name is copyrighted and Recipe *Patented*.

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MADE FROM THE

BLOOD AND BONES

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Cattle Slaughtered in New York

AMERICUS SUPERPHOSPHATE !

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The fertilizers we manufacture and sell under the "AMERICUS BRAND" are made from the blood, refuse butcher's offal and bones, taken daily from our slaughter houses in New York City.

These materials are manufactured in a fresh condition by the most improved process, by which all the valuable fertilizing properties are saved and concentrated. We treat in our works weekly the refuse from

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Dried Blood and Meat Scraps, Ground Bone, &c., Tallow and Bone Grease.

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HOLSTEIN CATTLE.

Judge William Fullerton has assigned to me the agency of his Holstein Cattle, probably excelled by no herd in the United States. Those familiar with the characteristics of this breed pronounce them unquestionably superior to all others for dairy and fattening purposes combined. Only bulls, one and two years old, for sale at present. Prices furnished on application.

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oct-3t

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WOODBURY N. J.,

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100,000 Felton's Early Prolific Reliance Raspberry;

200,000 Cinderella and Continental Strawberry Plants, direct from the original stalk.

Millions of other Plants, Trees, &c.
New Descriptive Circular now ready.

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BERKSHIRES FOR SALE.

A fine lot of well-bred pig boars and sows will be sold at moderate rates.

O. A. CRENSHAW,
Richmond, Va.

april-tf

\$1 FOR 25 CTS.

Seven new and wonderful articles at one-fourth the retail price. Examine the list.

No. 1. Musical Pipe.—Made of metal, with low re-sembling a human face. By filling with water, will imitate perfectly the notes of any bird.

No. 2. Musical Chain.—Suitable for necklaces or watch chains. One of gold color, yet has all our Lord's Prayer clearly engraved on it. Now and beautiful. A perfect little gem.

No. 3. Eureka Whistle.—Loudest and clearest whistle made. Very useful for apparatus to exchange signals at long distances.

No. 4. Japanese Parasol.—Just imported. Prettiest bijou novelty in the market. Finished in beautiful colors. Splendid gift to lady.

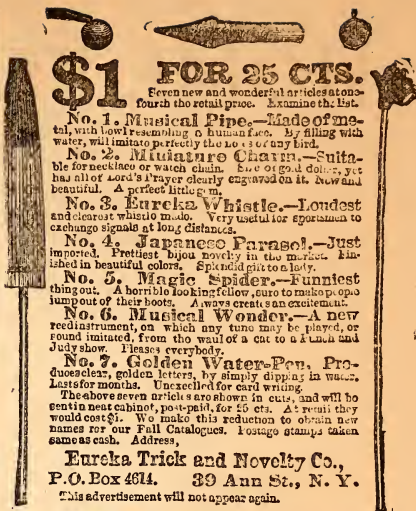
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No. 7. Golden Water-Pen.—Produces clear, golden letters, by simply dipping in water. Lasts for months. Unsuspected for card writing. The above seven articles are shown in cuts, and will be sent in neat cabinet, post-paid, for 25 cts. At present they would cost \$1. We make this reduction to obtain new names for our Fall Catalogues. Postage stamps taken same as cash. Address,

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This advertisement will not appear again.



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RASPBERRY,
CURRANT,
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BLACKBERRY PLANTS.

E. P. ROE has a very fine and varied stock true to name. Send for catalogue. Address E. P. ROE, Cornwall-on-Hudson, New York. oct-1t

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GOLD Any worker can make \$12 a day at home. Costly outfit free. Address TRUE & Co., Augusta, Maine. oct-tf

BERKSHIRES.

FINE LOT OF YOUNG PIGS.

YOUNG BOARS, six months old, and YOUNG SOWS, heavy with pig, for sale at moderate prices.

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AGRICULTURAL IMPLEMENT WAREHOUSE AND SEED STORE.

SOMETHING NEW.

A Southern Cultivator and Horse Hoe for Corn, Cotton, Tobacco, or anything that grows in hills or drills, which has received the first premium at 45 exhibitions at State and County Fairs.

The cut is readily adjusted to any width from 15 inches to 4 feet, or any depth from $\frac{1}{2}$ to 9 inches, doing away entirely with the use of the hand hoe, saving on each plantation the time of from 4 to 6 men.

We are agents for the following first premium Machinery :

Gaar, Scott & Co's Steam Engines and Threshing Machines, Grand Centennial Gold Medal Separators, Mounted and Down Powers, Saw Mills, &c.; D. M. Osborne & Co's Celebrated Reapers, Mowers and Self-Binding Harvesters, the only successful self binder manufactured. Premium Buckeye Chilled Plows, &c., and have for sale, or will procure on short notice, all of the most improved implements and machinery. Our stock of Machinery has thus far met the approval of the most successful planters and farmers of the South. We shall keep the most improved stock of seeds and best fertilizers in the market. Sole Agents for Virginia for Andrew Coe's Fertilizers. Call and see us. It will be to the advantage of every one in need of our goods, as we keep the best quality and sell at a very small margin from cost.

There will be a trial of Messrs. D. M. Osborne & Co's, Self Binding Harvesters at Maj. A. H. Drewry's, Westover, Charles City county, Va. at Capt. Robert Carter's, Shirley, Charles City county Va., at Mr. J. H. Crenshaw's, Berkeley Plantation, Charles City county, Va., at Mr. Baker's, Curls Neck, Henrico county, Va., at Mr. R. A. Allen's, Tuckahoe, Goochland county, Va., on or about the 10th of June, also at Dr. Tate's, Falls Plantation, near Manchester, on the 10th of June. Competition is respectfully solicited. Mr. D. M. Osborne will be present at Maj. A. H. Drewry's.

N. U. MOTT & CO., AGENTS,
No. 1418 Main Street, Richmond, Va.

Edgewood Stock Farm Berkshires,

REPRESENTING THE CELEBRATED

“Sniper,” “Sallie,” “Primrose,” “Robin Hood,” and “Cardiff” Strains

I have been breeding for the past two years from the best stock money would buy, and with such a Boar as “ENGLAND’S PRIDE,” whose record has no superior in the world, at the HEAD OF MY HERD, assisted by “SAMBO XX” and imported “TOM PUNCH,” together with the class of SOWS which I own, I have been able to breed some grand pigs. The following sows have farrowed this spring:

Imported SNIPER IX,	7 pigs by imported England’s Pride.
“ BLACK BELL,	11 “ “ “ “
“ LADY MAUD,	12 “ “ “ “
“ HEROINE II,	4 “ “ “ “
“ RANGER III,	6 “ “ “ “
“ STARLIGHT,	6 “ “ Sambo XX.
“ STAR-SALLIE	7 “ “ Tom Punch.
“ ZULEIKA,	7 “ “ “ “
“ MARY B.	7 “ “ “ “
“ ZOBEIDA,	6 “ “ Sambo XX.
“ GRANGE COURT,	7 “ “ “ “
“ LADY CHESIL,	7 “ “ “ “

Together with the above pigs, I have some fine Boars and Sows, both imported and of my own breeding, which are ready for service at prices to correspond with the stock and times. I can furnish almost any aged pig, either for breeding or show, and persons wanting imported Berkshires need not send to England for them when they can be furnished nearer home, without the risk of crossing the ocean, and at less cost for transportation. I have made arrangements with the Express Companies, by which charges are greatly reduced.

My Herd was awarded ALL OF THE PRIZES at the North Carolina and Virginia State Fairs in 1877.

Imported “England’s Pride” is a grand Boar, weighing 780 pounds in working order. He was awarded 1st prize at the Hamilton Fair, Ontario, in 1876, and at the Provincial Show in London, 1877, and 1st at Virginia State Fair. 1877.

Sambo XX is a grand young Boar, son of the famous “Lady Liverpool”—a sow who has won more prizes, and bred more prize animals than any other sow in the kingdom—says Mr. Russell Swanwick, her herder.

Tom Punch is of the celebrated Robin Hood family—a boar who sold for \$1,400 cash.

Sniper IX one of the grandest sows in the world, and weighs in show condition 750 lbs., 1st prize Ohio State Fair 1876. Sweepstakes at Indianapolis in 1877, and 1st prize at Virginia State Fair in 1877.

Ranger III and Grange Court III were selected as the best in a pen of thirty imported sows, and have proved wonderful breeders. Both received 1st in their respective classes in 1877.

Star-Sallie is a splendid representative of the Sallie family.

I have several very fine Registered Yorkshire Bull Calves for sale at \$25 each.

Walsingham South Down Sheep, also bred from imported Walsingham Rams—Buck and Ewe lambs now ready.

For Pigs 2 and 3 months old, freight prepaid,	\$15 ⁰⁰ each.
“ “ 4 “ 6 “ “ “ “ “ “	20 ⁰⁰ @\$30 “
“ “ 6 “ 8 “ “ “ “ “ “	30 ⁰⁰ @ 40 “

My Pigs are not excelled in this country. I have recently bought a young sow 6 months old, from the extensive breeder in the country, which cost me over \$50, and I guarantee to deliver at the above prices as good or better pigs.

Orders solicited. Safe delivery and satisfaction guaranteed. Address,

A. R. VENABLE, Jr.,

EDGEWOOD STOCK FARM,

ALLISON & ADDISON'S



“STAR BRAND”

FERTILIZERS.

As the season is at hand for ordering fertilizers for the Tobacco crop, we beg to announce to our friends that we have discontinued the sale of Pacific Guano, and will confine our business in Fertilizers to the sale of our own manufacture, viz :

COMPLETE
TOBACCO MANURE.

COMPLETE
WHEAT MANURE.

PURE
FLOUR OF RAW BONE.

Thirteen years experience and extended experiments having satisfied us that the use of fertilizers prepared especially for each staple crop is sound policy and true economy, we will hereafter confine ourselves to the manufacture and sale of the above special manures, which several years trial has shown to be all that could be desired for the crops for which they are made.

We also keep on hand a large stock of

No. 1 PERUVIAN GUANO,
Potash, Ground Plaster, and other Fertilizing Materials,

Which we offer in large or small quantities at lowest rates.

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Co-Operative Stock Farm and Poultry Yards,

FREDERICKSBURG, VA.

For Herd-Book Jersey or Ayrshire Cattle, bred from stock selected in person from best Northern breeders, and from “Centennial” Stock Exhibition. Cotswold, Leicester, Shropshire and Southdown Sheep bred from best imported stock, and Lambs of each breed for sale in August. Herd-Record Berkshire Swine of best strains, and Essex surpassed by none. Poultry—Choice, well-marked young fowls from all of our varieties will be for sale this Fall. Orders for eggs from all classes have closed, except Leghorns. We will continue to fill orders for Leghorn eggs, of either the brown or white variety, at \$1.50 per dozen. More premiums have been awarded to our stock at the Virginia State Fairs, than that of any other exhibitor in the State.

my-ly

DEVON CATTLE AND Shropshire Sheep FOR SALE.

Thoroughbred Young DEVON BULLS and Young Rams of
the SHROPSHIRE BREED.

Several of the young bulls were sired by the Imported Bull, "Master James," the winner of several prizes in England, amongst others the first given to his class at the show of the Royal Agricultural Society of England, held at Birmingham in July, 1876.

The young rams were all sired by imported rams purchased at high figures from one of the very best flocks in England, and several of them are out of ewes recently imported from the same flock of the rams—the others being out of ewes obtained from the celebrated flock of Mr. T. Conger, of Waldberg, near Haverstraw, in the State of New York. Also one Imported Shropshire Ram now a little over three years old.

Particulars, as to pedigrees, prices, &c., may be obtained by applying to

June—6t **Mr. W. N. KENNON,**
Sabbot Island postoffice, Goochland Co., Va.

SOUTHDOWN SHEEP.

I am happy to announce to my friends and the public generally that in addition to my own choice and select flock of Southdown Sheep, I have made arrangements with Mr. John D. Wing, of New York, by which the larger portion of his celebrated "Maple Shade Flock" has passed into my hands to be bred jointly by Mr. Wing and myself. This flock has long enjoyed the reputation of being the most noted flock of Southdowns in America, and Mr. Wing is ever on the alert for the best rams he can find. The first prize yearling and two-year old rams of the Centennial Exposition, as well as the first-prize ram of the Royal Show in England for 1876, have done the service in the flock for the last two years. The sheep are of the "Walsingham type," and are noted for their well-sprung ribs, heavy quarters, good fleeces, short legs and hardy constitutions. The Southdown is pre-eminently the sheep for the Southern States, and I think I can confidently say that my advantages for supplying first-class specimens of this breed are equal, if not superior, to those of the best breeders in America. At the last Virginia State Fair all the prizes on Middle Wool Sheep (except two second prizes) were awarded to me. I have also some choice young

SHORT HORN BULLS AND HEIFERS,

AS WELL AS

BERKSHIRE, ISLAND-CHINA AND ESSEX PIGS,

as well bred and as choice specimens as can be found anywhere. Safe arrival guaranteed. Write for what is wanted, or come and see.

je—tf

A. M. BOWMAN,
Waynesboro, Va.

HARD TIMES MADE EASY BY PURCHASING YOUR DRY GOODS OF LEVY BROTHERS

AT LOWER PRICES
THAN EVER KNOWN SINCE THE WEARING OF FIG-LEAVES.

Black Gros-Grain Silks at \$1 worth \$1.25, at \$1.10 worth \$1.35, at \$1.25 worth \$1.50, at \$1.35 worth \$1.75, at \$1.50 worth \$2.

Colored Silks at 75c., 90c., \$1, \$1.10, \$1.25., and \$1.35 per yard—the cheapest ever seen.

Striped Silks at 60, 75, 80, 90c., and \$1 per yard—all very cheap.

Plaid Silks at 75, 85c., and \$1—much below regular prices.

Black Alpacas at 16 $\frac{2}{3}$, 20, 25c., and up to \$1 per yard. Don't buy your Alpacas before examining our stock.

Black All-Wool Cashmeres at 60, 65, 75, 85c., \$1, and \$1.25—the best goods for the money ever offered.

Black Australian Crepe at 40, 50, 60, and 75c. per yard.

Colored Alpacas at 16 $\frac{2}{3}$, 20 and 25c. per yard, worth 20, 25 and 30c. per yard.

Wash Poplins at 6 $\frac{1}{4}$, 8 $\frac{1}{2}$, 10 and 12 $\frac{1}{2}$ c. per yard.

Black Grenadines—Stripes, plaids, brocaded and plain.

Fancy Dress Goods at 10, 12 $\frac{1}{2}$, 15, 16 $\frac{2}{3}$ c., and up to \$1 per yard (we show all of the novelties as they appear).

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Linen Lawns in great variety.

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Swiss Muslins at 10, 12 $\frac{1}{2}$, 15, 16 $\frac{2}{3}$, 20 and 25c. per yard—the cheapest ever seen.

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Striped and plain Awning Duck in all qualities.

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