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AND THE

HOUSEHOLD ARTS.

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THE SOUTHERN PLANTER

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THE SOUTHERN PLANTER



Devoted to Agriculture, Horticulture, and the Household Arts.

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

FRANK. G. RUFFIN, EDITOR.

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

VOL. XVII.

RICHMOND, VA., JULY, 1857.

No. 7.

From the *Cyclopedia of Agriculture*.

The Soil.

CONCLUDED.

A point of great practical importance is the state of division in which the constituent parts of soils are mixed together; and as chemical analysis gives no information in this respect, the necessity for submitting the soil to a mechanical examination becomes apparent. Such an examination enables us to ascertain whether its mechanical condition is such as to render its cultivation economical or expensive, and at the same time allows us to recognize the nature of the stones which are found in the soil. An acquaintance with the composition of the stones affords a good criterion as to its probable state of productiveness, and in many cases suggests either the propriety of leaving the stones on the land or removing them.

In hot climates, or in dry seasons, the crops are often injured on account of the want of the necessary supply of moisture; in many localities, indeed, cultivation would become impossible, if all soils did not possess the property of absorbing water, either in the form of vapours or in

the state of dew, from the atmosphere. This property, consequently, has a material influence upon the productive characters of soils, and contributes to explain the superiority of one soil over another, since different soils possess this property in a very unequal degree. Thus Sir Humphry Davy found, that when made perfectly dry, 1000 lbs. of a

Very fertile soil, from East Lothian, gained in one hour,	15 lbs.
Very fertile soil from Somersetshire, gained in one hour,	16 "
Soil worth 25s. per acre, from Mersca, in Essex, gained in one hour,	13 "
Sandy soil, worth 25s. from Essex, gained in one hour,	11 "
Coarse sand, worth only 15s., gained in one hour,	8 "
Soil of Bagshot Heath, gained in one hour,	3 "

It thus appears that fertile soils possess this property in a very considerable degree, whereas a purely silicious soil absorbs but a small amount of water on exposure to a moist atmosphere. We must not, however, estimate the comparative state of fertility of different soils by the amount of moisture which they are capable of absorbing in a dry state from a moist atmosphere; for peaty soils, which possess this property in a still higher degree than the best vegetable moulds,

would then come under the description of highly fertile soils.

Intimately connected with the preceding property, is the power of soils absorbing fertilizing gases from the atmosphere. Carbonic acid and ammonia, with which we are more especially concerned, and which both exist in small proportions in the atmosphere, are both absorbed by the various soils in very different degrees. Generally speaking, those soils which absorb a larger amount of moisture from the air than others, are also the better absorbers for carbonic acid and ammonia. This property, though dependent in a great measure on the porosity or the state of division of the various constituent parts of the soil, is nevertheless still more intimately connected with its chemical constitution, as we shall presently show. Good clay-loams and arable soils, containing a certain amount of vegetable and animal remains, possess it in a considerable degree; on the contrary, very sandy soils scarcely absorb any appreciable quantity of the fertilizing gases which have just been mentioned.

Another important property, which influences the agricultural capabilities of soils, is their power of holding water. Some soils will drink in and retain a much larger proportion of rain falling upon them than others, before the rain percolates into the subsoil; and it is evident that in dry climates this property must render a soil more valuable. In districts visited by frequent and heavy showers of rain, on the contrary, it is not desirable that a soil should possess this property in any large degree. Clay and peaty soils, it is well known, are capable of containing a very much larger amount of water than sandy soils; and as in the evaporation of the larger quantity of water contained in the former, a more considerable amount of heat is expended to change the water into vapour, we are taught at once the reason why clay soils are colder than sandy ones. If water is poured on weighed quantities of soils of different descriptions, a certain amount disappears in each instance; and if the careful addition of water is stopped when the first drop passes through the mass of the soils, and the latter are now weighed again, great differences will be found in the quantities of water which are contained

in each sample of soil. Thus it has been found, that from 100 lbs. of dry soil, water will begin to drop, if it be a

Quartz sand,	when it has absorbed 25 lbs.	
Calcareous sand,	"	29 "
Loamy soil,	"	40 "
English chalk,	"	45 "
Clay-loam,	"	50 "
Pure clay,	"	70 "

Again, those soils which hold the largest amount of water, also retain it with the greatest pertinacity—another property which accounts partially for the dissimilarity in the fertilizing characters of soils. Then again, in the relation of different soils to heat, we observe great differences. Thus, dark-colored soils will absorb a greater amount of heat from the sun's rays than light-colored ones; but the latter will retain the heat they have absorbed much longer than the former. If we further take into consideration the great differences in the firmness or adhesive power of various soils, their relative depth, position, and many other circumstances, it will become apparent that many circumstances besides their chemical composition exercise a more or less considerable influence on their natural productive power.

The study of the characters of soils, it appears to us, has hitherto been prosecuted too much in a one-sided direction. On the one hand, the mere existence of a certain number of chemical constituents has been deemed sufficient to account for all the agricultural peculiarities of soils; and, on the other hand, their physical properties have been too much considered, independently of their chemical composition. That an intimate connection exists between the physical properties and the chemical composition of soils, we have already had occasion to remark, but unfortunately this relation has not always been recognized; we have hitherto been too much in the habit of looking upon the soil as dead matter, and have, consequently, given but little attention to the various functions which the different constituents, in their various combinations, are calculated to perform in relation to vegetable life; in short, we have too little endeavored to study the physiology of soils. It affords us, therefore, particular pleasure to direct the

attention of the agriculturist to a series of experiments, which have been lately undertaken by Professor Way, with a view to unfold to us a property possessed by all soils, in a smaller or less degree, which, though it is of the greatest practical importance, has been hitherto altogether left unnoticed. Professor Way's researches on the absorptive powers of soils for manure cannot be too highly appreciated by the theoretical as well as by the practical man, for the results to which they have led already are no less unexpected, and thus interesting, in a theoretical point of view, than calculated to throw a new light on the inherent fertilizing properties of soils, the rational application of manures, the rotation of crops, and, in short, have a direct practical bearing on many agricultural operations. Although Professor Way is still occupied with the prosecution of this highly important subject, it will not be out of place to make a somewhat detailed reference to his investigations; for the two papers which have appeared in the *Journal of the Royal Agricultural Society*, on the absorptive properties of soils, by the pen of Professor Way, have already led to the discovery of a hitherto unsuspected property, possessed by all fertile soils, and are fraught with results which cannot be too highly appreciated by the practical man. We have no hesitation to say that Professor Way's researches on this subject embody by far the most important and practically useful results with which we have become acquainted within the past fifty years.

Professor Way's investigations originated in an observation of Mr. Thompson, of Kirby Hall, near York, who, in 1845, first observed, by direct experiments, that soils had the faculty of separating ammonia from its solutions. This observation, and an experiment made by Mr. Huxtable, in which this gentleman found that liquid manure, after the passage through a bed of an ordinary loamy soil, was deprived of smell and discolored, induced Mr. Way to institute a series of experimental researches on the powers of soils to absorb manuring substances, which have not only fully confirmed Mr. Thompson's previous observations, but which have also brought to light numerous

highly important additional facts, to which it is our duty now to allude.

In numerous and varied experiments, Professor Way has shown that, when a comparatively weak solution of caustic ammonia is passed through a considerable quantity of soil, it invariably loses the ammonia, although, previous to filtration, it exhibited decidedly the peculiar odour of that volatile alkali. When, however, stronger solutions of ammonia were filtered through soil, or when the proportion of the latter was greatly diminished, only a portion of the ammonia was absorbed, and the remainder passed through the soil with the water. It thus is evident that the power of soils to absorb ammonia has its limits; and that these limits are Professor Way has determined in several particular cases. Thus, 1000 parts of a soil from the thin land of the Dorsetshire downs, was found to absorb from a solution of caustic ammonia—

In one experiment,	3.083 grains of ammonia.
In a second experiment,	3.921 "
In a third "	3.504 "
In a fourth "	3.488 "

It will be observed that these quantities of absorbed ammonia vary to some extent in these experiments. The differences arise from the circumstance of solutions of different strength having been employed in each experiment, Professor Way having found that the same soil absorbs, in different experiments, the same amount of ammonia and other compounds experimented with, when solutions of equal strength are employed, but unlike quantities, when solutions of different strength are made use of.

In another soil which had a light-red colour, and was taken from Mr. Pusey's estate in Berkshire, the quantity of ammonia absorbed by 1000 grains amounted to 1.570 grains, thus showing that different soils possess this property in a very unequal degree. Numerous other experiments might be cited; however, these examples will be quite sufficient to illustrate the differences in the quantities of ammonia which are absorbed by soils of different descriptions; and we pass on to observe that Professor Way not only found that soils had the power of separating ammonia from its solution, but also

potash, as well as other bases, and that indeed, the most important fertilizing materials were amenable to the law regulating the absorption of ammonia. Thus, 100 grains of clay, a sample of very tenacious white clay, from the plastic clay formation, were found to absorb, from a solution of caustic potash containing 1 per cent. of potash, 1.050 grains of potash. In this instance, the alkaline solution was not filtered through the soil, but merely left in contact with it in the cold for twelve hours. It therefore appears, as has been shown, likewise, in many other experiments, that the process of filtration is unessential for the display of this remarkable property, and that soils simply brought in contact with alkaline solutions, have the power of absorbing a certain proportion of the alkaline substance. This absorption, moreover, was found to be very rapid, if not instantaneous; and it appears from this, that true chemical combinations are formed in all cases of absorption of this kind.

Still more important than the facts respecting the rapid absorption of free alkalis by soils, is the observation made by the same indefatigable philosopher, that all cultivated soils possess likewise the power of separating the ammonia, potash, and other alkaline substances from their combinations with various acids. Thus, when solutions of salts of ammonia, of potash, magnesia, &c., were passed slowly through a layer of dry soils five or six inches deep, it was remarked that the clear liquid, after filtration, no longer contained any of the ammonia or other salts employed. The soluble alkaline salts were thus retained in some form or other in the soil, whilst the water in which they were dissolved previously was passing through. A careful examination of the soil experimented upon, and of the water which had passed through it, and originally contained, in solution, a salt of ammonia or potash, &c., moreover, furnished the important result that the alkaline salt is not absorbed by the soil as such, but that the latter, indeed, has a decomposing power, which effects the resolution of the salt into its acids and alkaline base, which latter alone is retained by the soil during the process of filtration, or simply by shaking the salt-solution with a sufficient quantity of soil.

If, for instance, a solution of sulphate of ammonia, of moderate strength, is passed through a filter-bed of soil, five to eight inches deep, it will be found that the ammonia alone of the sulphate of ammonia is retained, and the sulphuric acid, with which the volatile alkali is combined, will then be found passing through with the water, generally though not always in combination with lime. Or if the salt employed in the experiment was nitrate of ammonia, a similar change will be effected by the contact of such a solution with the soil; the ammonia alone will be absorbed, and the nitric acid, with which it was previously combined, will be contained in the filtered liquid, in combination with lime. Other salts of ammonia as well as compounds of potash, magnesia &c., when passed in solution through soil, are subject to the same law which determines the separation of ammonia from its sulphate, and whatever the acid may have been with which the alkaline substance was originally combined, in every instance it will be found that the alkali alone is absorbed by the soil, while the acid of the salt will pass through not in a free state, but united with lime or other basic constituent of the soil. By the simple process of filtration, or by mere contact of the soil with solutions of different alkaline salts, new compounds are thus produced. That this remarkable action is a true chemical decomposition, is clearly proved by the fact that the quantity of lime which, in combination with the acid of the ammoniacal salt passes into the filtered liquid, correspond exactly to that of ammonia removed from it. Thus, when muriate of ammonia is filtered through the soil, with which most experiments were performed, the ammonia was removed, and a corresponding quantity of lime, in combination with muriatic acid, was detected in the filtered liquid. Sulphate of potash parted with its potash and sulphate of lime was produced; nitrate of ammonia or potash, in the same manner, gave rise to the formation of nitrate of lime; whilst ammonia and potash were retained by the soil in quantities corresponding to the lime acquired by the filtered liquid.

Like the absorption of the free alkalis, that from the alkaline salt-solution varies considerably in different soils; an

the extent of absorption is likewise affected by the strength of the solution employed.

A few examples may illustrate the extent to which ordinary soils remove ammonia and potash from their combinations with different acids:—

1000 grains of a light-red soil, from Mr. Pusey's estate in Berkshire, which was found to absorb 1·570 grains of free ammonia per 1000 grains of soil, absorbed from muriate of ammonia 1·966 grains of ammonia. Another soil, 1000 grains of which were found to absorb 3·438 grains of free ammonia, likewise removed a larger quantity of ammonia from the muriate for 1000 grains absorbed; from muriate of ammonia, 3·478 grains of ammonia, or nearly the same quantity as in the experiment with free ammonia. In this instance the absorptive power of the soil thus appears the same, whether the ammonia be in a free state, or united to muriatic acid.

1000 grains of subsoil clay from Cornwall, (coloured red by oxide of iron,) absorbed from muriate of ammonia ·818 grain of ammonia, or a much smaller quantity than that in the preceding experiment.

1000 grains of white clay, from the plastic clay formation, absorbed from muriate of ammonia 2·847 grains of ammonia, and with a solution of the same salt, but of a different strength, 1000 grains of the clay were found to absorb 2·078 grains of ammonia.

Digested with different solutions of nitrate of potash, the same white clay absorbed,

In one experiment, 4·366 grains of potash.
In a second " 4·980 "

In all these experiments, the acids of the salts employed were found, in the filtered solutions, in combination with lime, and it was, therefore, natural to suspect the carbonate of lime originally present in the soil to play an important function in the absorption of ammonia, potash, &c.; but direct experiments with carbonate of lime added to the soil, in order to ascertain if its power to absorb ammonia would be increased or not, have shown to Professor Way that carbonate of lime is not the agent to which the fixation of ammonia is due, and that its addition, conse-

quently, does not augment the power of the soil to absorb ammonia or potash. Sufficient evidence, we think, is furnished in these experiments to show that the power of soils, of which we are speaking, is not the same as that exhibited by porous substances, that it is not due to mere surface attraction, and, in short, that it cannot be referred to any previously known physical property possessed by soils, but that it is a power *sui generis*. Not content, however, to have proved the existence of a hitherto unsuspected power in soils, Professor Way endeavoured to find out the true cause of this remarkable action, and happily his labours in that direction, prosecuted with most praiseworthy zeal, perseverance, and talent, have been crowned with success.

After having proved experimentally that the power of soils to absorb manuring substances is not due either to the presence of sand, carbonate or silicate of lime, of oxide of iron, or alumina, neither can it be referred to the organic matter, in the soil, nor to the silicate of alumina, or pure clay, in the soil, Professor Way was fortunate enough to discover a new class of remarkable compounds which possesses the power under discussion in a high degree. These compounds, in the language of the chemist, are called double silicates; and it is to their presence in all fertile soils that Professor Way refers the peculiar and hitherto unknown action described above, which all such soils exhibit in a smaller or less degree. Before proceeding farther in our inquiry, it will be necessary to explain briefly what is meant by the term double silicates. When pure silicious sand or powdered quartz-rock, or flints, or any other variety of the substance which the chemist calls silica, or silicic acid, is fused at a high temperature with potash, soda, lime, or magnesia, &c., it results in each case in a chemical combination between the silica and the substance with which it has been fused. The combinations thus produced are called silicates. Thus the compound of silica with potash is a silicate, that of silica with soda is another, and silicate of lime, is a compound of silica with lime; and as each of these compounds contains but one substance united to silica, they are distinguished from other similar com-

pounds containing, in addition to silica, more than one other substance, by the name of simple silicates. These compounds are characterized by a great tendency of uniting together amongst themselves, and forming a new class of saline compounds—that of the double silicates. Thus silicate of alumina and silicate of lime frequently are found in nature united together to form one substance—a double silicate; other double silicates are the compounds of silicate of soda and lime, or silicate of potash and alumina, &c. Several of the double silicates, containing, in addition to silicate of alumina, other bases, have lately been artificially prepared by Professor Way, who is of opinion that the absorption of ammonia by the soil from the atmosphere is dependent on the formation of a double silicate of alumina and ammonia, a compound which is always produced when any of the other double silicates, consisting of silicate of alumina and another base, is brought in contact with the carbonate of ammonia contained in the atmosphere. According to Professor Way, the compounds of silicate of alumina with soda, lime, magnesia, or potash, not only have the power to fix the ammonia in solution, but also the gaseous carbonate of ammonia of the atmosphere. The examination of several of these double silicates has brought to light some important facts. Thus it has been shown that the double silicate of alumina and soda, when digested with a solution of a lime salt, gives rise to a new compound, a double silicate, containing lime instead of soda. In this new compound, the lime in its turn may be replaced by magnesia, and this base again by potash. The double silicate of alumina and potash is finally deprived of its potash by ammonia, which entering into combination with the remaining silicate of alumina, thus gives rise to the formation of the double silicate of alumina and ammonia. It will be observed that there is a regular order of decomposition between the silicates of each base, and the ordinary salts of other bases; and it is especially important to remember, that ammonia displaces all other bases from their union with silicate of alumina. Thus a salt of ammonia not only decomposes the double silicate of alumina and potash, giving rise to the

double silicate of alumina and ammonia, but whenever a salt of ammonia in solution, and also the carbonate of ammonia in the atmosphere, comes in contact with the soil containing any one of the other double silicates, ammonia is invariably absorbed, and the other base in combination with silicate of alumina is separated. An especially careful provision thus manifests itself, in the solicitude of the soil to prevent the loss of the most valuable fertilizing constituent of manures; and it is interesting to observe that the power of soils to retain fertilizing constituents, in so far as this is dependent on the presence of double silicates is proportional to the relative importance of the different fertilizing constituents. Ammonia, as far as we know, is the most valuable of all manuring substances; potash follows next in importance; and lime, which occurs in nature far more abundantly than either ammonia or potash, is justly regarded as being of less consequence; whilst soda appears to be still less important in relation to the different vegetable processes, than either ammonia, potash, lime, or magnesia.

Now, it is exceedingly interesting to observe the order in which these different bases replace each other in the double silicates. This order has been determined by Professor Way, as follows:—

Soda, Lime, Magnesia, Potash, Ammonia,

that is to say, in the double silicate of alumina and soda, the soda may be replaced by lime, magnesia, potash, or ammonia, which is simply effected by bringing the soda double silicate in intimate contact with any soluble salt of the bases named. The lime double silicate, again, is decomposed by the bases which follow it in the list, but not by soda, which precedes it, and we thus find that potash is only turned out from its silicate by ammonia, whilst of itself it is capable of displacing the less valuable bases, soda, lime, and magnesia. In other words, for the preservation of ammonia four compounds are made answerable, for that of potash only three, and for soda, the least valuable, apparently no provision is taken by the soil to prevent its free escape with the water draining through the soil. There are several points which have to be attended to in forming correct views on the nature

of these absorptive powers. In the first instance, we must bear in mind, that the rule laid down in reference to the decomposition of the different double silicates, applies only to the action of the salts of different bases on the silicates. For instance, a solution of muriate of ammonia, poured upon a soil containing the double silicate of alumina and lime, will give rise to the ammonia double silicate and the formation of muriate of lime; but, on the other hand, the free alkaline base lime, will decompose the ammonia double silicate, and cause the evaporation of it in a gaseous form. Secondly, it is well to remember, that the action of heat destroys the absorptive properties of these double silicates altogether, and also changes their chemical properties materially. Thus the double silicate of alumina and lime, after having been heated to redness, neither absorbs ammonia from the atmosphere, nor is decomposed by being brought in contact with a solution of an ammoniacal salt. In the third place, it is necessary to state, that although the double silicates of alumina, with other bases, are nearly insoluble in water, yet they are not *entirely so*. Moreover, we must not forget to observe, that they are not dissolved as such, but that water dissolves out of each a small quantity of the base with which the silicate of alumina is united. Thus Professor Way has shown that a gallon of water dissolves from the ammonia silicate about one grain of ammonia, or one part in 70,000, and water charged with carbonic acid 2.527 grains, or $2\frac{1}{2}$ times the quantity dissolved by pure water. It was likewise observed that common salt increased the solubility of ammonia from its double silicate very considerably; direct determinations having shown that 1000 grains of a solution of common salt, containing 1.97 per cent. of salt, dissolved 0.33 grain of ammonia, or at the rate of 23.1 grains in the gallon, which is twenty times as much as pure water, (Way.) It will be perceived, accordingly, that notwithstanding the small solubility of the double silicates, the necessary amount of fertilizing constituents which they contain, may be furnished by them to the growing plants; for not only are the soluble bases, such as potash and ammonia, gradually dissolved by much water from the double silicates, but also

saline compounds occurring in the soil or in the manure, promote their liberation to a considerable extent.

We have given a somewhat detailed account of Professor Way's researches, because they are replete with interesting and practically useful information. Our limits do not allow us to enter into a discussion of the practical inferences which have been drawn by the learned Professor from his researches. But we cannot refrain to observe, that they go far to explain the differences in the natural productive powers of soils, and are calculated to affect several agricultural practices, especially the application of manures to the land. To mention only one particular, they teach us the important fact that, in a practical point of view, it makes no difference whether we use the sulphate or muriate of ammonia, and that consequently the cheapest salt is the most preferable. For further particulars, we refer the reader to the 11th and 13th vols. of the *Royal Agricultural Society's Journal*, in which two papers on the absorptive powers of soils, by Professor Way, will be found. [A. V.]

TO "HEAD" AND EXPEL RATS.—A writer in the Boston *Cultivator* recommends potash for this purpose. The rats troubled him very much. They appeared in great numbers, and were very troublesome, so that he felt justified in resorting to extreme measures to effect their expulsion. He pounded up potash and strewed it around their holes, and rubbed some under the boards, and on the sides where they came through. The next night he heard a squealing among them, which he supposed from the caustic nature of the potash that got among their hair or on their bare feet. They disappeared, and for a long time he was exempt from any farther annoyance.

A REMARKABLE COW.—A cow belonging to Mr. Lewis Cabell, of Amherst county, died a few days since, in whose womb was discovered *one hundred and two* young calves! One of them was fully developed—but the others, though perfectly shaped, were about the size of rats. This is a remarkable instance—but we are informed, on authority which we cannot discredit, that it is strictly and literally true.

Domestic Life in the Free States.

We copy the first of the following articles from the PRAIRIE FARMER; the second from THE WOOL GROWER'S REPORTER, published in Cleveland, Ohio, by whom it is extracted from Moor's Rural New Yorker. We hope we shall not be scalped for presuming to extract them for the perusal of slave drivers. We make no comments.

FARMERS' WIVES.

Their True Social Position—Women of the Revolution—English Country Ladies compared with American—Routinism of American Housewifery—Her Home Influences.

[We have copied good articles entitled "Farmers' Boys" and "Farmers' Girls," from *Life Illustrated*, and here find one which we regard good in the same paper, on Farmers' Wives. We cannot forego the pleasure of presenting it to our readers, believing it will assist in rendering the class referred to more contented, more efficient in real duties, and less inclined to yield to the idea that they are good for nothing.]"

In this country, the wife of the farmer stands at the head of society. She may not know it, but it is true as gospel. Dating back with the beginning of our social system, we find that she is at the bottom of all bold and brave enterprises that have made us great, and has sustained the burden and the heat of the whole day in our national undertaking. Because she has had the making of the men, training them from the gristle of boyhood. She has carried the whole fabric in her own heart, since upon her have the heroes relied and to her approbation looked for their chief reward. The wives of the farmers were the women of the Revolution, of whom we cannot say enough in praise. Although it may be said they first projected or gave shape to our revolutionary plans, yet without their aid we have to acknowledge that little or nothing could have been done.

The wife, in the country, is the one and only being who makes the homestead beautiful. She invests it with an atmosphere of love. She is the single magnet by which husband and children are attracted there. She can make all things lovely and bright, or she can create cloudiness and gloom, put everybody in the

sulks and make the whole household wish they lived anywhere but there. A woman can do as much as that anywhere, I know; but in a country house she possesses peculiar power that elsewhere she has not. In the retirement of rural life it is not so easy to get away from a home that is notoriously unpleasant and uncomfortable; but in the crowd and variety of a city it is a very different matter.

Farmers wives, in our rural districts, are hardly aware of their influence. They underrate themselves practically, to begin with; they run to one extreme, and think themselves of no consequence in the world; and then they run to another and declare they are just as good as anybody. That is hardly in character. A little brush—the least particle in the world—of city influence, and they are all in a flutter. In an instant they are willing to forget all the beauty, all the charming associations of their country home life, and grow crazy with envy of their city cousins' flounces and furbeloes. The calm, contemplative, really religious existence they enjoy in the heat of nature, they entirely undervalue and would gladly trade it off for a sight of stony streets, the sound of rattling carts and the *certainty* of never again seeing the sun rise and set.

English country ladies have a fresh, robust and hearty look. Ours, however, wear a different appearance. The country ladies in America have a care-worn, anxious, responsible air, as if all the interests of the farm, its occupants and the town devolved solely on themselves. Half the time they are a good deal smarter than the men and take the business out of their hands. They can reckon you up the cost and value of a hog or a 'critter,' without even having access to the slate; whereas their husbands would have to hunt up and study all the chalk-marks around the homestead, in order to get at what they wanted. If the majority of our farmers are suddenly asked what they will take for their new beef, they will turn and answer that they would not like to sell without first consulting 'mother'—meaning their wife. In this, and in other ways, the woman in the country becomes gradually unfeminine—loses a certain degree of that sweetness and freshness which so beautifully become the female character, mingles in with the roughness, and hardness, and

dirt, and drudgery of farm work and farm life, and, in the lapse of time, she unconsciously parts with some of those attractive qualities in her nature that should everywhere be found in company with woman.

But we are getting too much upon the ground of the essayist. It is our province, rather, to *describe* the life of the farmer's wife and companion, than to speculate or philosophize upon the character and results of such a life.

Well, then, most farmers wives are up last at night and the earliest up in the morning. And although no decent man, fit to call himself an American farmer, would permit his wife to rise first and make the fire on a winter's morning, yet she is thrifty and ambitious enough to be in the kitchen very soon after he is, bustling about the sink, the pots and kettles and the table, fixing things generally for breakfast preparations, and arranging for the progress of the day's work. You never catch her idle. She moves twice as quick as her husband, and gets through about twice as much business in the same time.

Breakfast over, the day's operations begin. And it is not possible to tell what they will be from one day to another, either. Sometimes it is one thing, and then it is clear another. The milk is to scald, the butter is to churn, the dishes are to be washed; in the season, young chickens are to be looked after; the children must have their faces washed and be sent to school; the luncheon must be thought of for the workmen in the field; dinner must be got into the pot; the table is to be set again; then it must be cleared off; then the sewing must be done; or company rides up to the door; and the little chicks come in again for a share of attention; and the children hurry home as hungry as they can be from school; and the table must be set for tea; and the cows must be milked as soon as they are got home; and the work of the day must be freely talked over with husband, together with the plans for the next day, and the little ones are to be got off to bed; and then night comes down for good upon all the household.

This is the very quintessence of routine itself. I know that women in the city can well make complaint on the same score, but this isolated life in the country is rou-

tine in the highest concentrated form. There is nothing in the world to break it. Unless the inward resources are ample, the life falls away in spite of yourself into old, formal, dry, unmeaning practices; and not a gush of new feeling or fresh experience enters in.

Then in winter it seems harder still, for then the days are—oh! so long, short as they are at the commencement of the winter solstice! There would then appear to be nothing to break the tiresome monotony. It is like the extensive fields of snow themselves, stretching away and away far as the eye can reach, and obliterating every trace of line, mark, boundary, or neighborhood. Well might wives of farmers keep long sticks hanging in their chimney corners these weary days, with pale sunshine, as they slowly pass. It would be a congenial occupation.

The wintry mornings dawn late, with frosty, nipping airs, and too often leaden clouds lying in long, low bars along the horizon. The windows are covered with all sorts of devices in frost-work, and streaming breaths blow out from every open mouth.

If a fresh snow has fallen during the night, the whole world seems entirely hushed, and so buried up, that hardly does the slow snapping of the kindlings on the logs break the solemn silence of the time. Then whether the fingers ache with the cold or not, breakfast is to be prepared for the household, and very often with only a single pair of hands. The girls may help a little if they happen to be up; but it is not always they are up. They have thoroughly warmed their huge feather beds, and they do hate awfully to get out of them in the morning on the freezing, cold floor. And now and then the boys take a hand at chopping the mince-meat, perhaps, or help peel the smoking potatoes, with great checked aprons tied high up under their chins.

It is nine o'clock, and ten o'clock, and even noon, before work gets fairly in motion; and then, when steams ascend and float all around the blackened ceiling of the kitchen, and the savors of stewed pumpkins rise from the ill-covered mouth of the great kettle, perhaps there are sausages to fill, or pork to pack away, or cheeses to make, or butter to churn, or some other such labor to be attended to,

any one kind of which is enough to require all the energies of any heroic and courageous woman.

How the women in our farm houses manage to get through even a tithe of it all is an impenetrable mystery. It certainly requires quite as much generalship as would suffice for the taking of a city, or the administration of government on a grander scale.

The "men folks" may be off at work in the woods, dragging logs and "chopping," it is true; but they know nothing of these multiform and ever multiplying cares and perplexities that are sown, thick as thistle-seeds, around the steps of the farmer's wife every day. Indeed, it is a great deal truer than anybody ever yet stopped to think it was, that if a farmer, naturally capable and thrifty himself, gets a slovenly, behindhand, incompetent wife, nothing under heaven will possibly save his farm from slowly, slowly cankering away under the application of mortgages.

It is the *wife* that is the farmer's true support, after all. She makes or unmakes. It is nothing to the question that he manages to drive good bargains with his cattle, his horses, his muttons, or his field products, unless she who sits at home, and weaves the web of his fortunes about the house, seconds him earnestly in every one of his plans and purposes; he does but empty the water he draws into sieves instead of buckets. Thus the farmer's wife stands first in importance in our agricultural affairs; and agriculture, as every one knows who pretends to know anything, is the basis and bottom of society.

Then her influence over the family, the children, and the whole, is almost as autocratic, though in a very different way, as that of the Czar of Russia over all his subjects. She forms, moulds, colors, and directs everything. The young character is in her hands altogether. She is the head and front of the family, whether by an assumed or a conceded authority. She is the *heart* of the household always, even if she does not happen to be the *head* as well. She not only bakes and brews, but she trains boys and girls in those simple, and temperate, almost Spartan habits, that afterwards project themselves with the force of new individual powers upon the destinies of the outside world!

This is the province of the wife of the

farmer—no more, and no less. It is not her lot to do nothing but make butter and cheese, or knit stockings and spin wool, away in the country solitudes; but all around her she is every day scattering the seed of a choice grain whose fruits are not for a day, but are immortal.

If she would but see to it for herself, what a difference would it not work in her lot! How fresh would be her resolution, how invigorated would her purposes become! Instead of bewailing her fortune—such dismal and monotonous retirements—she would seem to herself to sit like a queen at the heart of the earth, fashioning the forces that are by-and-by certain to control the whole system.

Drudgery—drudgery! all the country wives constantly exclaim; and we hardly wonder at it, either. Yet there is something besides drudgery in it, to one who sets to work to exalt her occupation and ennoble herself. Life, we know, is made up of a good many little things; but even these may be lifted up by the soul of love and made glorious. But the husband is as much in fault as any one. He exacts; he insists; he lays on the burdens heavily; he tyrannizes; he is the dead weight upon the frail shoulders of woman. It is not to be denied or set aside—he shifts off too much of the labor upon her, making her the packhorse of the family establishment, the real beast of burden in all his domestic plans. Thence follow, naturally enough, low spirits, an overworked constitution, carelessness about the high ends and aims of life, and a gradual and almost total loss of the true spiritual faculty.

These things should no longer be. They should be mended forthwith. The woman ought to stand everywhere for whatever is pure, noble, and holy, not less in the country than in the city; nay, more so in those blessed, rural retreats, and amid those sweet and refreshing influences that God sends, like delicious fragrance, to purify the atmosphere in which the soul is obliged for a time to dwell. Especially is it idle to talk disparagingly of the farmer's wife. Her city sister can show her silks and her long list of friends; but what are they all in the light of that sincere simplicity, that serene beauty of life, in which the country wife is privileged to dwell and rejoice all her days.

A Chapter for Husbands.

Messrs Editors—I am, I suppose, a fault-finding, fretful sort of a body, disposed to make a fuss, and not as submissive and gentle as I ought to be; but somehow or other, I am not satisfied with the state of things in this world, and am not quite willing to wait for the better times in the world to come, and so I would fain take up a cudgel and pound Mr. SOMEBODY or Mr. EVERYBODY, hoping, amongst them all, to hit the right ones. You see it is the *Mr.*'s I am out with, but I don't mean you—not at all—but it's the *other* gentleman!

We women, all over the country, are getting old so fast—so lean, lank, withered and worn, I am vexed about it and mortified too. What's the meaning of it? Now you men will work hard, and yet look better, I declare, at forty or fifty, than ever; but we insignificant women fade, lose our teeth and bloom, and turn grey, and have to stuff with cotton, wear head dresses, *Crinolines*, &c., to make a semblance to a veritable woman. It's too bad, I say, and who's to blame?

You are very kind to us on board the cars, and give up your seat, and give us the best—very attentive and polite, and all that; and you are willing too, to get us nice silk dresses, and splendid hats, with ribbons and feathers, and wait upon us to church, open and shut the gate, carry our books or baskets! O *such* gentlemen—*such* kindness is really overwhelming!—The world can see all your goodness, and of course you are not to blame!

But then there is another side to this picture, and one I have seen too often, and see every day. You who never see beneath the surface, and are too dignified to bother yourselves with trifles,—mere nothings, I want to "speak in meeting," and let the easily humbugged multitude see behind the scenes. To find out what makes more than half the women prematurely old, and cross, perhaps, *is*, they are *overtaxed*. You expect too much of them. You have your houses and affairs so arranged that they are constantly on the alert to bring things around. An ambitious, sensitive woman is anxious to do all left for her. She wants her house in order, her children cared for, and her husband's meals in season, and clothes kept in readiness. And beside, wishes time to

make or receive calls or visits, and be sociable. But how can all this be accomplished with such miserable help as women have had for years past? And amidst all her endless cares two thirds of them have to contend with numberless difficulties, which their husbands might remove with very little trouble or expense, and that is what I want to scold about. You polite men do not keep your wives in wood—not half of you. You live in your great nice houses, and you want fires kept here and there, but you want her to cut it and bring it in, and put it on to burn! You let her toil with an old leaky bucket or pump, till human patience is exhausted; and through your neglect and procrastination, you allow her to be fretted, worried, taxed, wearied, beyond all reason, day after day, and year after year! Meanwhile the buttons must be kept on, the rents sewed up, the garments made, the victuals cooked, the children pleased, the house clean and tidy—(good gracious, what don't you expect of us?)—your friends entertained, &c., &c.,! Morning, noon, and evening, a woman's cares are never ended. O, the endless minutia of a housekeeper's duties!

Now if you strong and *youthful* men would but do *your* duty, the roses would not leave our cheeks so fast. Take better care of us. Provide conveniences—give us plenty of wood and water handy for us. Be kind and speak gently to us, and don't grumble if the potatoes are not warm, when we have waited two hours for you, and give us a sweet kiss occasionally, and may be we should stay young and lovely.

ULTRA.

Moor's Rural New Yorker.

Vinegar.

The juice of one bushel of sugar-beets, worth twenty-five cents, and which any farmer can raise with little cost, will make from five to six gallons of vinegar equal to the best elder wine. First wash and grate the beets, and express the juice in a cheese press, or in any other way which a little ingenuity can suggest, and put the liquor into a barrel, cover the bung with gauze and set it in the sun, and in fifteen or twenty days it will be fit for use. By this method the very best of vinegar may be obtained without any great trouble, and I hope all who like good vinegar will try it.—*Ohio Valley Farmer.*

The Culture of Domestic Animals.

1. The question of breeding *in-and-in* is one of very great importance. It is known how much diversity of opinion exists in regard to it; with, I think, a general drift of public sentiment against it. What I have to say is the result of experience and very careful consideration of all the facts and principles involved; so far as I was possessed of them. Let it go as part of the means, by which others may make up a more reliable judgment.

2. There are two kinds of *in-and-in* breeding, which are, in my opinion, to be carefully distinguished from each other. That which is up and down; and that which is collateral. And then that which is collateral, is liable to produce very different results, according as the relationship is complete, or only partial. And again, that which is up-and-down, is liable to produce very different results, whether it is direct and immediate, or whether a generation or two intervenes. I will add, that far more depends upon the particular race of animals under question, where this matter of *in-and-in* breeding is to be decided, than is generally supposed.

3. A full brother and sister are just twice as much akin to each other, as either of them is, to either of its parents. They have the very same blood; whereas, each of them has only one-half of the blood of each parent. The breeding of a full brother and sister together, is therefore, twice as close *in-breeding*, as to breed either of them to either of their parents. The half-brother and sister, have exactly as much common blood, as the parent and issue; and cousins in the first degree, precisely as much as the grand-parent and its grand issue. The great grand-sire, or dam of an animal, has only one-eighth part of common blood with it; which is the same common blood as exists between cousins in the second degree. Many breeders would carefully avoid the former cross, while they would not think the common blood in the latter, worth considering.

4. It is at once curious and important to consider what an immense mixture of blood takes place in a few generations. An animal has one sire only; in the second degree two; in the third degree four; in the fourth-degree eight; in the fifth degree sixteen. Here are but five descents—

the smallest number any one is content with, as proof of a pure pedigree. But in these five descents we have no less than 32 ancestors, male and female, whose blood is mingled in the veins of the single animal we are interested in. And if we will add a few more crosses, how rapid is the increase; in the sixth degree alone, thirty-two ancestors of both sexes;* in the seventh degree, sixty-four ancestors of both sexes; in the eighth degree, one hundred and twenty-eight; in the ninth degree, two hundred and fifty-six; in the tenth degree, five hundred and twelve. That is, at this tenth degree, which you will see so pompously insisted on, in multitudes of pedigrees, our animal can count 1054 ancestors; with the most remote of whom, he has the 2128th part of common blood! How is it possible for us to know any thing *special* of the *personal* peculiarities of the fiftieth part of these 1054 ancestors? How can we guess which one of them it may be, after which our animal has 'taken?' Let us be modest and reasonable about things involved in so much uncertainty, the moment we pass beyond great and general laws.

5. We are to remember, however, that this widening and ascending process must not only have an end, but in its last half must exactly reverse its first half. Take a bull descended from the bull Hubback, or a stallion descended from the Godolphin Arabian; the two ends of these pedigrees will terminate in the points of two cones, of which the bases are united in the middle. You trace up to the widest number of ancestors; then you narrow in, and concentrate at last upon the original parent—say Hubback, or the Godolphin. Examine this carefully, and observe what an immensity of *in-and-in* work there was, in widening from the original starting point; and then how much more, in narrowing back to our animal. Consider what a vast proportion of Durham cattle with pure pedigrees, trace back to Hubback—what an immense mass of high bred horses, trace back to the Godolphin. These are but illustrations; but they illustrate facts and principles of the very highest importance; and these cases are used only because they are notorious and unquestionable.

* This must refer to one sex only—either sire or dam.—Ed. Ohio Farmer.

6. You may cut off the ears and tails of ten thousand rams, and yet after that, every one of them will beget lambs, with full ears and long tails. But if a ram chances to be *born* without ears and without a tail, he is nearly certain to beget *some lambs* with these same peculiarities. And these of his get, are still more certain to beget others with these peculiarities; and the certainty increases with every generation. At length, you *establish* that variety of sheep. *Occasionally*, a tail and ears may come forth; just as *occasionally*, a black nose, in the Durham. It is in this manner that only *congenital* peculiarities are capable of being re-produced and perpetuated; and it is perfectly obvious that the more thoroughly you adhere to such as have the peculiarity, the more certain you are to establish and perpetuate it.

7. To a certain extent, therefore, all pure breeding is in-and-in breeding. If you step over a certain circle, within which all are of the same blood, you get back at one step, nearly to the point where some one started, perhaps a thousand years ago, with the primeval individual, with the accidental natural peculiarity, which now marks such, or such a race. Inside of this circle, within which you must confine yourself, in all pure breeding, there are many other smaller circles, all of which become more intensely affiliated to certain purities, or certain peculiarities; the innermost one of which, is the very closest in-and-in breeding. It is the very same principle which runs all through. The only real question is, as to the wisest method of its application. Pure breeding, and in-and-in breeding, are the same thing.

8. The experience of the most successful breeders in all countries, has continually verified those results, which the fair theoretical analysis of the facts of the case establishes; and incontestably proves the clamor against in-and-in breeding to be in effect tantamount to a clamor against all thorough breeding.

In the first, place, let us rest satisfied that beyond a doubt, our animal is half-blooded of his father, and the other half of his mother; and therefore, let us be perfectly certain who they are, and what they are; for half his blood is quite another thing, from the thousandth part of his

blood. And in the next place, if thus produced from a father and a mother, that suited us—and if he or she also suits us—let us rest assured that we run no serious risk of being unsuited by pressing these suitable things a little further, watching as we go. The sire and dam of *Renick*, were full brother and sister; the closest possible. If all is well, we have thus intensified all the qualities we had obtained. Don't try it much quite so near; but don't fear. They say your stock will become barren. In more than thirty years, I never raised a barren cow, that was not a Free-Martin; and I have a cow at present that brought me four fine calves, at two births, in less than one year, and raised them all.—*Ohio Farmer.*

AGRICOLA.

From the Farmer and Planter.

On the Culture of the Sweet Potato.

MR. EDITOR:—I have always felt disposed to impart any agricultural knowledge that I may have acquired from experience. I will now state my plan and practice for many years in preparing land for, and planting potatoes. In the first place, I take a piece of land that is high and sandy, for I am like every other planter, I prefer high and sandy land for potatoes, and the first year I lay it off 4 feet with a good shovel plow, and put 3 bushels of good compost manure to each task row. I put the manure in the track furrow, and then run 2 furrows on it with a good shovel plow. On this ridge I plant cotton the first year; the next year, as soon as it is time to plant potatoes, which, with me, is about the first week in April, I thrash all of the limbs from the cotton stalks, leaving the stalks standing. I then take a good shovel plow and run up on the beds close to the stalks on each side, and if those 2 furrows do not plow up the stalks, I run one more on the top of the beds, which will invariably do the work, or loosen them so much that the hands can pull them up, which I make them do and burn them. As soon as I get all the stalks pulled up and burnt, I turn the plow back, and make as good a bed as I can with the plow, on the same bed that the cotton was planted, so that my potatoes will have the benefit of the manure that was put on the previous year. I then open my seed bank, and let some cut and some plant, so as not to have the potatoes too long out of the ground after they are cut, (I never plant whole potatoes). I cut my potatoes from $\frac{1}{2}$ to 2 inches long. One hand open holes, and one drops the potatoes, I open with the point of the hoe on the bed about 12 or 14 inches, which is plenty near enough to plant potatoes, the hand dropping the potatoes and

presses hard on them with the foot, and another hand covers them up, and as soon as the hand that is covering the potatoes gets through covering, they turn back and run the back of the hoe over the top of the bed, which smoothes the top. As soon as the potatoes are up, which is about the first week in May, I put my whole sweep plows in them, and run 2 furrows in each row, the plowman running up as near as he can get to the potatoes, the 2 furrows with the whole sweep plow shaves off whatever young grass may be on the side of the beds, and throws a very pretty clean list in the alleys. I then put in the hoes and hoe only the top of the beds, and each good hoe hand hoes me 4 tasks for a day's work—that is the first plowing and first hoe work. As soon as I find they want work again, I put a good $\frac{1}{2}$ shovel plow in them, and run 2 furrows next to the beds, and take out the middles with a whole sweeper plow. As soon as I get through with that plowing, I put the hoes in and haul up the ridges, and in hauling them up with the hoes, I cover up the vines* on the side of the beds—that is my second hoe work and ploughing. By the middle of July they will want the last working, and by that time the vines have run over the alleys. I then plow them by running 3 furrows in the alleys very deep, with a good shovel plow. I then put the hoes in them and haul them up, and in hauling up I cover the vines up on the side of the beds. If any person were to see them at that time, they would not suppose that the vines would not come out, but in about 2 weeks or more the vines on the side of the beds sprout out and soon cover the alleys again. I never dig my potatoes until the vines are killed perfectly dead by frost. As soon as the frost bites the vines, I begin to dig them, and I begin by directing some hands to go ahead of the plows, and take all of the vines off the beds. I then take a 5 or 6 inch plow and plow the beds down, and make some hands follow the plows to pick up the potatoes as fast as they are plowed out of the beds. If the potatoes are very numerous, it takes 3 or 4 hands to pick up and keep up with the plow. I then carry them to the banks, or where I intend to bank them up, in baskets in a waggon, so as not to bruise them. I put just as many in a bank as will allowance the negroes and serve the house a week. I put a good deal of pine trash on the potatoes before the dirt is put on, and I bank up about half way, and leave out the top of the bank for a week or 10 days to allow whatever moisture may be in the potatoes to escape before I close the bank up, and at the expiration of the week or 10 days, I close up the banks, except a good air hole on the south side, about 2 feet from the top, and put a piece of bark over the air hole to prevent the rain from getting in; and until this year I have kept my potatoes all the winter and spring

* A bad practice, we think.—Ed.

without having many rotten ones in a bank. *In this day of improvement in agriculture* I look upon digging potatoes with the hoe as doing a very slow business, and as I can dig so fast with the plow now-a-days, I plant very largely to the hand of potatoes, and sometimes put hogs on a part of my crop, rather than dig them and feed them to the hogs. I would not pretend to say what a fine provision potatoes are, as every planter knows that, and will conclude, Mr. Editor, by saying that I wish you success in the Farmer and Planter; and also, that I believe in book farming.

Mr. Editor, I send you this peace, and if you think it worth a place in the Farmer and Planter, or that it may be of advantage to any one, you are at liberty to publish it. B. O.

Barnwell Dist., S. C., June 13, 1856.

Agricultural Antiquities of Virginia.

A correspondent applied to us some time ago to know if the Lupine, either white or yellow, had ever been grown as a manure or forage crop in Virginia. We wrote for information on this subject, and also on the history of the partridge pea, which we had heard, distrustfully, was an imported plant, to a gentleman whose head is a perfect storehouse of antiquities, and whose memory seems to be proof against the assaults of age. We hope to hear from him again, and are sure our readers will also after perusing the following.

We can confirm, in our own experience, what he says of the feeding qualities of the partridge pea. Last year a neighbour whose land was not cultivated, gave us the partridge pea on condition we cut it green; and we fed all our stock on it for more than a fortnight, just as one would soil with clover, and every thing improved on it. This year, having bought the same tract of land, we are pursuing the same course, though the pea has diminished so much from last year's mowing as to afford much less feed.

To F. G. RUFFIN.

In the year 1626, Robert Carter, who had resided sixteen years in the East Indies and fourteen years in the West Indies, who had published a treatise on the cultivation of cotton, wool, indigo, capada, rice, and other tropical plants, was invited by the Virginia company to accept a grant of land, and remove to the colony. We have no positive evidence that he accepted the offer, but we find a man of that name here soon after the date of the proposal made to him. Indigo was cultivated in Virginia at an early period; the remains of the "cats" for extricating the dye were seen at Curl's, in Henrico, thirty years ago, and a deed

for a portion of the Wilton estate, refers to "the indigo vats." A stone trough, for evaporating the dye, was at the spring on the Wilton estate, not many years ago. Rice was cultivated at Curl's before and during the war of 1776. Licorice was cultivated at Shirley, sixty years ago. Cotton was cultivated before and after that period, but the process of ginning by two wooden rollers, turned by hand, was so tedious that it was abandoned for flax and hemp.

Sainfoin, burnet and lucerne were cultivated by many farmers; but all failed, as *field crops*. Sainfoin was light and of little value: so was burnet: lucerne was highly valued, but broom-straw, wire grass and partridge pea soon *choked it out*, when sown *broadcast* in drills, in borders, in gardens, it was generally cultivated and highly valued. The partridge pea is indigenous, and bears seed below, as well as above ground: in rich land it yields an abundant and valuable crop, greedily eaten by all stock. In the year 1814, Col. Thos. M. Randolph of Edge Hill, sold from his Varina estate, many tons of it at a high price. I have never heard that the lupine was cultivated in Virginia. Massie may have tried at Colle's, near Monticello, in Albemarle; he surely did not succeed. Mr. Jefferson tried many foreign plants; none of them save clover and lucerne, succeeded. Ribwort, or narrow-leaved plantain, was imported by Carter Braxton, and sown on his estate in King William; it proved a *pest*, and is so considered by all farmers. Clover was cultivated in "lots," more than sixty years ago. In the year 1795, two barrels of plaster of Paris were sent from Philadelphia to D. M. Randolph, of Prey Isle, but were lost on the way. Marle was used in Virginia a hundred years ago and approved; an old farmer in New Kent told me that he had tried and approved, but "the hill was too steep for the steers to pull it up, and he abandoned the use of it." Col. Archy Cary of Amphill, in Chesterfield, imported horses, cattle, sheep and hogs, of the most approved breeds, and had them in great perfection when the British went to Amphill, burnt his mill, filled with flour, and destroyed his stock. John Page of Rosewell, Gloucester, had imported stock of all kinds, as the inventory of his estate, recorded in the office of the old general court, will show.

R. R.

2d June, 1857.

How to extract the essential oil from any flower.—Take any flowers you like, which stratify with common sea-salt in a clean earthen glazed pot. When thus filled to the top, cover it well, and carry it to the cellar. Forty days afterwards put a crape over a pan, and empty the whole to strain the essence from the flowers by pressure. Bottle that essence and expose it 4 or 5 weeks in the sun and dew of the evening to purify. One single drop of that essence is enough to scent a whole quart of water.

For the Southern Planter.

Black Teeth in Hogs.

A few days since, while reading a newspaper at a hotel in Washington City, I heard the words "black teeth in hogs" used by one of two gentlemen conversing together, near where I sat. I stopped reading, and heard the other reply that he had practiced knocking out the black teeth in hogs for 30 or 40 years. There was something so strangely new in the idea that I asked the strange gentlemen to explain to me what they meant by black teeth in hogs, and what evil they did—how knocked out and where located? I was told by them that in almost every instance where a want of thrift was manifest in a grass-fed hog, that it would be found to be caused by a black tooth in the jaw of the hog, which seemed to protrude farther out than the rest, become loose and very sore, so as to prevent their shewing what caused the decline, and by taking a punch and punching it out they would get relieved at once. If the above be true, which I derived as above from *plain, hard-sensed farmers* in appearance, they are worthy of note.

G. W.

May 29, 1857.

From the Scientific American.

One Hundred Tons of Grass to the Acre.

Messrs. Editors.—The statement you published, taken from an English paper, respecting the raising of one hundred tons of grass on a single acre of land pertaining to Lord Derby's estate, is undoubtedly correct, or very nearly so. I had the pleasure of visiting his Lordship's estate last summer, while on a tour of agricultural observation in England, and I am prepared to believe the statement. My visit was made about the first of June, and they had already secured *two* heavy crops of grass, and it is not improbable that four or five more were cut during the long and favorable season of last year. Four or five crops of the heavy, stout, Italian rye grass is not unusual; and Mr. Mechi, of the celebrated Triptree Farm, informed me that he had once grown *seven* during the summer. This grass grows with great rapidity in England when stimulated by the rich liquid nutriment so liberally and continuously applied.

Our farmers have yet much to learn respecting the scientific cultivation of the soil. They have yet to learn how bountiful mother earth may be when properly dressed and cared for by the husbandman. It should be observed that the climate of England is much more favorable for the growth of the grasses than our own, owing to its excessive humidity; but still, I do not know why several successive crops may not be produced here by the use of liquid manuring, and by careful systematic culture.

JAS. R. NICHOLS.

Haverhill, Mass., May 1857.

From the Michigan Farmer.

How to make a Sound Shingle Roof.

Mr. Editor:—As I have had something to do with the carpenter's trade, I thought that I would give some of my ideas about that kind of work. I have often noticed the roofs of buildings that had some holes through them. The question occurred to me to find out what the reason was that a hole should come in one place and not in another, and on examination I found the fault to be in the laying of the shingle, and that nine-tenths of the mechanics make the same mistake in laying shingles. I presume that some of my old friends will think that I am a little green to think of teaching them how to do as simple a piece of work as to lay a shingle, but perhaps I shall give them a new idea. I now ask any of them to examine their roofs, and see if they cannot find some of the very places that I shall describe. I shall commence to describe the bad places by taking four courses and numbering them. No. 1 is five shingles long. The first and last shingle of the course are four inches wide; the three middle shingles are eight inches wide. This will form the first course. The next course is 4 shingles 3 inches wide. These cover the same length and make No. 2. No. 3 is the same as No. 1, and No. 4 as No. 2. Now, many at the first sight will say we have a good roof and the joints well broke. But let us examine a little and see. The second course in the joint of the third course is but one thickness of shingle through to the roof-board, (and that, too, at the second space of the shingle, as a shingle is usually divided into three spaces,) and in process of time the shingle will wear through and leave a hole through the roof, while the rest of the roof is good.

I am aware that shingles are of varied widths, and do not come all in the form that I have shown; but I take this way to show how to find the bad places. I shall now give my rule for laying shingles, and how to avoid such bad places in a roof, for they occur in most of roofs, if the workmen do not know how to avoid them. You must be careful not to make a joint directly over the joint of the second course below the one you are laying; or in other words, to break joints with the two last courses that you have lain.

A. C. BRIGGS.

Occola, March, 1857.

Mulching.

This is a term used by horticulturists for shading the ground around growing trees, shrubs, and plants. There are many plants so delicate in their structure, that they absolutely require mulching the first summer, to ensure their roots a firm hold in the ground. But as most of our summers are so dry and hot, there are few plants that are not benefitted by mulching.

If the ground around fruit trees is cleaned of the weeds and grass, and mulched with leaves or straw, immediately after a rain, the tree will be invigorated, and a fine crop of fruit will be the reward. Roses that are wilting, and showing a sickly bloom, will be revived, and bloom in beauty, by mulching when the ground is moist. The Dahlia, a plant that requires a great deal of moisture, will bloom in perfection until frost, if kept properly mulched throughout the summer. Now, when we recommend mulching we do not mean a few leaves or straws placed immediately around the plant, but a coating so thick that the sun cannot penetrate through, and placed as far from the plant or tree, as the influence of the roots extend. Anything that will shade the ground: rock, brick or plank, will answer to mulch with; but substances that in their decomposition will make a soil, are decidedly preferable. The native forests mulch themselves, and we see how rank and vigorous they grow. We think, that unless the surface be kept constantly stirred around a tree or plant, the rays of the sun should never rest upon it. Those who look upon labour and effort as a great bug-bear, may get along without mulching. But those who mulch properly, actually save time and labour, for when it is well done, the labour is done for the year, and the soil is all the time being enriched, as the plant grows and perfects itself. Therefore, we say to the orchardist, mulch around your fruit trees; to the vine-grower, mulch around the grape vines; to the gardener, mulch among the vegetables; to our fair lady florists, mulch among the flowers, mulch—mulch—mulch. Never tire of mulching.—*Soil of the South.*

For the Southern Planter.

A Wheat or Corn Crop saved by Chickens.

I was informed a few days ago by a gentleman well known in this community, that a neighbour of his on discovering that the chinch bug had just entered his corn or wheat field at one particular point, determined at once to adopt a plan (suggested to him by a friend) for their destruction. Accordingly he had a number of chicken-coops, made just when the bugs had commenced depredating, into each of which he put a hen with a brood of small chickens; and sat down to watch the result, which in a short time began to manifest a favorable result. The chickens like bees or ants seemed to be unceasing in their labours of destruction of the bugs, and in a few days he had the happiness to see that the number of bugs were greatly decreasing instead of increasing; and in one week's time could not find a bug—thus he saved his crop. If necessary I'll give the names as reported to me. Farmers, try it.

G. W.

[For the Southern Planter.

How to Raise and keep Irish Potatoes.

NOMONY GROVE,
Westm'd Co., Va., May 22, 1857. }

MR. EDITOR:

In compliance with the request made in the May No. of the *Southern Planter*, for information in regard to the raising of Irish potatoes, I will give you my practice in the cultivation and keeping of that crop. I will here say that long or unrotted manures should never be applied to late potatoes, as the fermenting state of the manure will either kill or prevent the vegetation of the potatoes. The most successful plan I have ever tried has been on very poor land, which would not bring five bushels of corn per acre without manure.

It is my custom in March or April to fallow up the land designed for late potatoes with a double horse plough, and should the grass commence growing, which it some times does, I replough in May or June, for the purpose of keeping the grass out of the land. I then harrow with a heavy harrow, and the first season I get after the twentieth of June, I usually plant, but prefer planting after that time, as the later they are planted the more abundant the crop, even as late as the first of August.

I lay off the land in three foot rows, and bed it up in ridges, as is the custom with some, or the most of the farmers with us, as we do for corn. I then split it as deep as can be done with a plough; in the split bed I sow from two hundred and fifty to three hundred pounds of Peruvian guano per acre, drop the potatoes from ten to twelve inches apart and cover them with the plow by running a furrow on each side, leaving them covered from five to six inches deep in the earth. There is the secret why so many failures are made in getting potatoes to come up; they are covered so shallow the heat of the sun causes them either to rot or perish. It is a hard matter to get a good stand of potatoes late in the season when they are cut; and the best plan I have ever tried with cut potatoes, is to cut them several days before we wish to plant, roll them in plaster and spread them thin on the floor of a cellar, where they will be kept cool, and will not injure for several weeks, until a season

shall come when they will be in readiness for planting. Last year the drought was so intense with us, we did not have rain enough to plant until the eighth of July, and then the land was not wet more than three or four inches. I prepared the land, cut and planted on the same day. We did not have any rain for a month after that, which caused a large portion of my potatoes planted to rot, having been planted so soon after cutting, which they will always do unless there is a good rain soon after planting, or there is a sufficient amount of moisture in the earth to start the potatoes at once to growing.

As it regards the keeping of potatoes I beg leave to differ with the contributor to the *Planter*. I think it is much easier to keep them than it is to raise them. There are but few things requisite to be observed in keeping them as well in Virginia as any where else. Dig them when the earth is dry, do not suffer them to remain long in the field after they become dry, put them in a dry warm cellar, or one where they will not be exposed to cold air. Keep the cellar dark, as light is injurious to the flavor of Irish potatoes, and as soon as freezing weather sets in, cover them sufficiently thick with straw to prevent freezing, and no one will have any cause of complaint about their potatoes not keeping in any part of Virginia which I have ever visited yet. If any one who may see this should not have suitable cellars, he may keep them, as I have known them kept, in hills in the field, by selecting a piece of ground where the water will not settle.— Pile the potatoes in a round hill as high as you can get them, then cover with straw, and on that pile the earth until there is a sufficient cover of earth and straw to keep the potatoes from freezing, and in the spring I have seen them taken out as fresh and as well flavoured as when put there.

The potatoes I raised last year were as fine as I ever saw grown any where. I raised three different kinds, the Mercer, the Brimstone, and a large red variety brought a few years past from some of the West Indies. This last named potatoe is not of as good flavor as the Mercer, but the most productive kind I have ever seen. I weighed one which weighed something over three pounds, it was quite a curiosity for its shape. I have been in the habit of raising potatoes for the purpose of fatten-

ing my pork. Boiled potatoes and hominy will fatten hogs much faster than corn, and they are the finest kind of food for milch cows, as good for them or better than any Ruta Baga turnips or Manzel Wortzel beets, though I prefer raising turnips for cows, as it is a more certain crop, and more turnips can be raised from the same land. I neglected to say how much work I gave my potatoes last year, I only gave them one working with the hoe, none with the plough; the season was so dry and the land so poor there was no grass or weeds to hurt. Could the farmer have any assurance of getting half the amount spoken of in the Planter as being paid by the citizens of the State for potatoes, you would soon see all of the Virginia markets glutted; for one ton of guano would raise more potatoes than wheat, if the potatoes only brought twenty cents per bushel, and the land only produced two hundred bushels per acre, with the application of three hundred pounds of guano to the acre. One ton of guano is, I believe, about the average applied to ten acres of land in this section for wheat, and fifteen bushels per acre I know to be as large as our average yield of wheat from that quantity of guano, which, if it brought one dollar and fifty cents per bushel, would be \$225. Now, one ton sown on land, at the rate of three hundred pounds per acre, would sow over six and two-third acres, which if it only produced two hundred bushels of potatoes per acre, would make over thirteen hundred bushels, which, at present prices, would pay better than anything else.

For the Planter.

Labor Lost.

Millions of dollars are annually lost to the State of Virginia by the misapplication of labor.

Let us, for the present, take into consideration the loss of time in making hills for tobacco and other crops.

Suppose ten laborers on a plantation. If their labor be properly applied these ought to make twenty thousand hills and cultivate the same in tobacco—horn worms, suckering, and housing excepted; and for these purposes help can be hired. But let us suppose 15,000 hills each; then we have for the whole crop 150,000. For the old-fashioned way of dig, dig, dig, 200

hills is a good day's work, whereas 1000 hills can be as perfectly and as easily be made in the same time. To make 150,000 hills in the old style, will consume 750 days a 75 cents is \$562
New mode 150 days 112

Gain or saving ten hands \$450
Or to each laborer \$45

I remember that more than 50 years past an old man, named Jack, prepared a piece of ordinary new land for tobacco by cutting deep and making very large hills. The result was a light crop for two years, and the land made and remaining poor to this day. One or two years after this I cultivated tobacco on land adjoining Jack, coultured and hilled lightly, and made respectable crops for two years. Neither of us used manure, and as to a stimulant in that day it was not known in any region; but I have no doubt if Jack had used a little guano or plaster on his crop soon after planting, that he would have grown a respectable crop.

No new ground need be broken for tobacco more than two inches deep; stiff clay excepted, which may be coultured deep to sink rains, but hoed shallow.

About 22 years past I cleared a piece of rich, loose mountain land, had it prepared by making two or three cuts with the hoe at the proper distance for hills, and placing thereon four or five hoes of earth; leaving the space between hills wholly untouched, till the ground required weeding. Each hand, big and little, made 1000 hills the day, and the coulturing of the crop being a mere scratching, it was a light job. This piece of ground being rich, it was cultivated in tobacco three years in succession in the same mode, yielding good crops, and is now rich. Land which, by nature, is sufficiently porous to admit light and moisture needs no more culture than is required to destroy weeds and grasses. Nor should the roots of trees or bushes be ripped out of the ground, but should remain, for the purpose of sinking rains and enriching the land.

When I was a tobacco planter, my mode of preparing level or bottom land for tobacco, was to plough in winter to kill worms and pulverize the ground; harrow and plough with shovel in the spring, ridge

or bed with one or two horse plough, (as necessity required,) when my plants were ready for planting, laying off hills by a regular step on the beds, and chopping and patting with the hoe between the foot-prints on which to plant. But if I were now engaged in such work, I would tie a piece of board, about the size of a hoe, to the sole of my foot, and thus go ahead with a long cane, requiring no hoe about it.

For hill side, old land, I would plough and harrow as above, and when my plants called me, I would lay off rows horizontally with a side hill or shovel plough, turning the earth down, on which I would go ahead with staff and foot-board, as above recommended.

No land which requires high bedding or hilling to keep tobacco from drowning, should be planted in tobacco, for it is a critical experiment; better put such in grass to feed the poor cows.

Do not understand from any remark above made, that I object to deep ploughing of old clay lands for any crop; for where ploughing is necessary, that is breaking fallow, I say plough deep. But let it be remembered that where the soil is deeply buried, some stimulant is necessary to give an impetus to the plant, particularly tobacco, otherwise the young plant will suffer for nourishment before the roots do penetrate to the mould, thus become dwarfish and never recover. A mixture of guano and plaster in equal quantities, append one tea spoonful to each plant a few days after planting, is perhaps the best stimulant for tobacco which is to be had.

Now friend, I would ask, what do you dig up a hill for any crop for? Permit me to answer for you; just to have the fun of digging it down again; and thus killing time twice over. It is useless in the general to say any thing to old folks, for they have fixed principles; but I being an old man, feel it a duty to give this commandment to the young. My sons I forbid your ever digging up a hill in which to plant any thing. The author of nature never intended the roots of any plant to be above ground, but in the ground; therefore I say make a hole for planting rather than a hill. Do you make a hill for planting an apple or other scion? Pshaw! away with the hills; it does seem to me that no man in his proper senses will, in this en-

lightened day, make a hill in which to plant any thing, not even gowber pea.

In closing I would just remark that many persons recommend manuring tobacco ground with strong manure, and that broadcast. Such manuring produces strong coarse tobacco, equally offensive to both nose and mouth, and hardly palatable to a horn worm. And worse than this, as such tobacco now commands but a comparatively low price, it is not palatable to the market. Better apply the manure to some other crop; or if you will have it for tobacco, then for this purpose have two lots, and let the manure and a crop of oats precede the tobacco. Sow the oats at least two bushels to the acre, and turn them under for manure when beginning to ripen; and the next year you will have large and fine tobacco, worth at least double of the coarse stinking stuff grown on dung. Don't be stingy with your seed, nor tempted to cut the oats. Act wisely, and you and your lands will all grow rich.

If I had not read agricultural books, I would yet be an agricultural fool. Read Essays on agriculture my sons, and be wise in discriminating between right and wrong. Believing that no act or work of man is perfect, I have ever tried to find out a more perfect mode of business. He who finds out the better mode of doing any work, has the advantage start of others, and he who does not promulgate his knowledge for the benefit of others, is selfish, unfit for society, and is a rebel and foe to his country.

LA DRUMMOND.

June 1, 1857.

Mapes', Hildreth's and Rhodes' Superphosphates.

Mr. Editor—Since forwarding you my article on the Superphosphates, I have received and examined several others, the result of which examination it may not be amiss to communicate to your readers, particularly as some of these manures are now advertised in the Planter.

"*Mapes' Nitrogenized Superphosphate of Lime*" professes to be composed of equal amounts of his "improved superphosphates" and *dried blood*, when in fact there is no dried blood in it. This can be seen by a mere casual inspection of the manure; if there was blood in it, it would, when

heated, give off the peculiar odor of animal matter, and every particle of blood would swell up, and blacken in a way peculiar to animal matter and nothing else. An addition of one per cent. of dried blood to the "improved" is distinctly recognisable when heated, and five per cent. causes the whole mass to swell up, a thing that the "nitrogenized" will not do.

Again, the "Improved" contained, according to the manufacturer's pamphlet, but 19 per cent. of phosphoric acid, which would of course be reduced to $9\frac{1}{2}$ per cent. in the nitrogenized, whereas I find by analysis, that it contains full 20 per cent.

The manure is made up of bone black, plaster, a little sulphate of ammonia, &c., with an abundant supply of *rich, fine garden mould or peat matter, and marble dust.*

"*Mapes' No. 1 Superphosphate of Lime*" I have examined only so far as to ascertain that it is largely adulterated with carbonate of lime and *swamp muck*, or some sort of peat matter.

'*Mapes' Potassi Phosphate*' and '*Mapes' Cotton and Tobacco Fertilizers*' are pretty nearly one and the same thing, as it would take an exact analysis to discover more than a slight difference between them.

They contain respectively $19\frac{1}{2}$ and $18\frac{1}{4}$ per cent. of bone phosphate of lime, the remainder, which is more than 30 per cent. of the whole, is composed almost entirely of Jersey *Green Sand*, (from which the manufacturer no doubt gets the name of *potash phosphate*) *carbonate of lime* and *swamp muck*, or some other peat matter. The organic matter and water of the potash phosphate amounts to 46 per cent., and this is almost destitute of ammonia. In the Cotton and Tobacco fertilizers they amount to 26 per cent.

By careful washing the peat matter can be separated from the lime, sand, &c., and when the latter mixture is treated with cold dilute muriatic acid, the lime, &c. are removed, leaving the green sand in its pristine purity.

Hildreth's Superphosphate referred to in my first communication, is all that Prof. Johnson says of it: "It is composed mainly of *carbonate of lime*, with a sprinkling of *bone phosphate*, *charcoal*, &c.

"*Rhodes' Superphosphate of Lime*" contains $19\frac{1}{2}$ per cent. of phosphoric acid, of which a little more than 5 per cent. is soluble in water; this would give $29\frac{1}{2}$ per

cent. of bone phosphate, and $7\frac{1}{4}$ per cent. of soluble or superphosphate of lime.—This manure also contains carbonate of lime, as may be proved by pouring a small quantity of any strong acid upon a portion from which all matter soluble in water has been removed.

WILLIAM GILHAM.

V. M. I., March 20.

For the Planter.

Potatoes.

In addition to the judicious remarks of Mr. Ruffin on the potatoe crop of Virginia, I beg leave to add a few words.

I am now an old man, have resided in different localities and attitudes, and cultivated potatoes for fifty years in different soils, I consider myself qualified to speak on this subject.

Potatoes (I mean the round or Irish,) grow to greatest perfection on black, loose land, and cool region. As to the proper kind to be planted, I say nothing; because different localities, and different tastes and purposes require different kinds. If the ground be friable and clear of grass and root weeds, all that is necessary is to dig a hole, drop and cover with the foot. But for a large crop it is more expeditious to furrow with a plough, drop and cover with the same plough. To curtail expenses it is best in the culture of a large crop to use both the plough and the hoe. On such land as above described, once ploughing and once hoeing will suffice; more than two such workings would be surplus. Turf land should be ploughed early and properly harrowed, for the purpose of destroying the sods. Never make a hill for planting potatoes, nor indeed any thing else; for they require all the moisture they can get, therefore should be planted below the surface. I never yet saw any land too rich for potatoes, for they are a gross feeder, and as the largest potatoes always sell highest, it is avisable to use manure in the hole or drill. On loose mountain ground, I would use guano and plaister; on clay grounds I would plough down vegetable matter for creating mould. I now reside in a potatoe region (the cold mountain of Amherst)—am eating potatoes grown last year, and desire no better. By clearing the potatoe of earth, and keeping them in a cold place, they may

be kept perfect till the new crop is ready for use.

I will not eat a potatoe grown on clay land after they are half grown; for they are indigestible to a weak stomach, and unhealthy for all. If I now resided in a warmer region, I would make my potatoe ground rich with vegetatable mould, and plant a small purple kind, called Mole. It is of excellent quality, very early, and when boiled, loses its colour.

I never knew a good potatoe to grow on good wheat land, and never knew potatoes to fail when grown on good rye land. Perhaps in a more northern climate the result may be different. For Irish potatoes the ground should be so friable as to be worked up by the foot, but for sweet potatoes clay grounds are best.

The large and small potatoes should be separated. If the crop is large a seive should be used for this purpose. The largest should be ate and sold, and the smaller planted without cutting. The sweet potatoe should not be cut either for the hot bed or the field, but planted by placing them longitudinal in furrows. A potatoe of good quality has a thin skin, therefore no necessity for peeling. Either kind is a good substitute for bread, either alone or mixed with meal.

LA DRUMMOND.

June 1, 1857.

For the Southern Planter.

Re-Planting Corn.

MR. EDITOR:

This being my first year in Virginia, it would be inconsistent for me to attempt to teach others, especially in northernisms—but being somewhat an experimenter, and the business of re-planting corn nearly past,—still fresh in mind, I will give my experience up to this time. I now think I covered most of my corn too deep. Something like half of it come up; and there being quite a crust on the hill, I made some miniature rakes, with three spikes for teeth to each one, a very light instrument, easily handled with one hand, passing through the field, we drew the rakes through all the hills that had not come up; in most of them the corn would readily appear in a crimped state; when it did not, we replanted;—my neighbors told me the crimped corn was no account,

&c.; but no difference is now perceptible,—the crimped corn is as good as any, and is of the first planting. But I am for another experiment: I am thinking to put nearly twice as much in each hill as I did this spring, and pass a horse and harrow lengthwise in each row, instead of covering covering it with a hoe as this spring; I hope in this manner to avoid the expense and trouble of replanting.

While I am writing, I will say a word as to seed-corn; I lately noticed, either in the Planter or Farmer, a word from some gentleman, going to show that no corn should be used for planting but the large grains from the butt of the ear; the reasons he gave seemed very plausible; but still I cannot subscribe to his theory. My theory is this—in order to get good, full, long ears of corn, we should plant corn from such ears, and plant all the corn from each ear used—the tip—the butt—the middle—the whole; and the more ears of good size from one stalk, the better. It appears to me that a very considerable improvement can be made in the corn grown in this vicinity—that more corn can be obtained in proportion to the amount of stalk than we now get. At all events I am for trying it. I am encouraged in this matter from my experience at the north, for I succeeded in getting larger corn, and more in proportion to the amount of stalk than any of my neighbors, who pursued the same course suggested by the gentleman whose remarks and theory I have alluded to. Whatever may be my success in my experiments, I will inform my fellow citizens, who are equally interested for the general good of *our whole* country, and especially for the South.

THOMAS CHASE.

CHESTERFIELD, June 1857.

Disease in Peach Trees.

BREMO, FLUVANNA COUNTY, }
June 6, 1857. }

Mr. Ruffin—Having for several years past observed a disease in the peach tree of this part of the county, which has increased so rapidly as to threaten the ultimate destruction of that once abundant and most delicious of all the fruits of our climate, I am induced to speak of it through the columns of the Planter.

I have not seen it noticed in all my read-

ing, in the form in which I have discovered it. Perhaps in your more extensive investigations, you may have become acquainted with it.

It has occurred to me that it may possibly be the disease known at the North, under the name of the "Yellows," modified here by difference of climate.

The seat of the disease is found in the pith of the small branches of the tree, and is most apparent where these branching twigs united with the parent stock—by tearing one of them off the disease is at once exposed to view. The pith, which in a natural and healthy state, is always perfectly white and soft, will be found of various degrees of brown discoloration—sometimes almost black, and so hard as to resist the edge of a knife like sand or strong matter.

The effect of this destruction of what may be called the spinal marrow of the fruit bearing twigs, is to dwarf their growth to less than half their natural size, and the leaves in like proportion, as well as the buds at their foot stalks for future fruit diminished also in the same degree.

The consequence is the fruit is dwarfed. I have known a Heath peach tree, what formerly bore fruit as large as a man's fist, of late bear a scanty crop of peaches not larger than an English walnut—and after 2 or 3 years decline and die entirely.

Sometimes the tree in the Summer the whole crop of leaves turning yellow.—This has induced me to conjecture that the disease may be a modification of the "Northern Yellows." But most of our trees die in winter—especially during our two last unusually severe winters. It may be well to enquire of the Orchardists of the North whether "the Yellows" there is accompanied with the destruction of the pith as described above.

I believe this fatal disease is produced by an insect which deposits its egg at the insertion of each bed in the embryo state on the water sprout; but if so, the insect is so minute as to have escaped my detection. Be it, however, what it may, unless some remedy shall be found out and soon applied, I am satisfied a few more years will leave us destitute of the luxury of the most delightful of all our fruits.

I found this disease, this winter, rife in the peach trees of middle Alabama.

JOHN H. COCKE.

Cutting Wheat.—Sheep.

HANOVER Co., June 4, 1857.

Dear Planter—May I presume to give some advice in return for much I have received from the Planter.

You advise to cut wheat in pallelograms, my experience condemns it. I prefer the square or circle as is produced by my process. One of the hands that understands the use of the cradle is placed at each corner, with a cradle by him, he binds his allotment in both directions, and when his corner needs it, he rounds it off with his scythe. You are entirely right about the *rear* delivery. I use Hussey's Reaper with six mules, three at a time, and have cut twenty-two acres per day. After the reaper comes "Dewey's Patent Gleator," which is the greatest implement I have seen for its cost, sold by H. M. Smith of Richmond.

MY SHEEP AGAINST SOUTH DOWNS.

I sheared my ram a few days ago and weighed his wool, and am almost afraid to risk my statement of the weight (but I got a witness); he is a native, and was 2 years old, had not been sheared the first season for experiment, the fleece promising to be heavy; it was accurately weighed, bringing the scales down to the 22 pound notch, and not very coarse wool at that, much of it was thrown away that was filthy. Now would you not like to swap me a South Down for one of his lambs?

Yours, with regard,
THOS. G. TURNER.

For the Southern Planter.

Colic in Horses.

Dear Planter—The following receipt from "Youatt" has been tried with *great success* by Mr. George Earnest (proprietor of our omnibus line) in many cases of Colic. I have used it some two or three times with almost instantaneous relief to the poor sufferer. I give it to you for publication, because I know many of your subscribers have no copy of "Youatt on the Horse."

Take of chloride of lime, one tablespoonful. Put it into a pint bottle and fill up with *warm* water, and drench the horse—the *best* way for doing which is to raise his head *high* and pour the drench down the nostril. This mode of drenching prevents strangling. The great distention in flatulent colic is caused by a fermentation of the food, producing "usually or almost invariably, a combination of hydrogen with some other gas." Hydrogen, has a strong

affinity for Chlorine, and the result of giving chloride of lime is to produce a combination of the chlorine and hydrogen thus forming, and "setting free," muriatic acid which produces no injury to the horse.

I generally add one tablespoonful of laudanum to this drench. If this does no good it can do no harm. J. E. W.

Wheat Drill.

The following short letter will be as good as a volume to those who know the author. We can only say to those who do not that he is one of the best farmers and most reliable men in the State of Virginia. Mr. May's advertisement will be found in this number.

I see in your May number an inquiry as to the best wheat drill with guano attachment.—The Bickford & Hoffman is the best drill in use in this section of country. It is a cylinder drill which will deposit the grain more regularly than a slide drill. The guano attachment is better calculated to feed regularly. My neighbour, R. H. Dulaney, and many others have used them with entire satisfaction. They are sold by Wm. H. May in Alexandria, Va.

Respectfully yours, &c.

WILLIAM BENTON,
Loudoun Co., Va.

From the Maine Farmer.

Benefits of Sawdust.

Mr. Editor—I propose to give you some of my views of the benefit of sawdust for agricultural purposes, together with my method of applying it. The first use I make of it is in bedding for my stock—such as cattle, horses and hogs—not forgetting even poor biddy's quarters. I am satisfied this is economy in more than one point:—first, it is so comfortable for the poor creatures to rest their weary limbs upon. Why, sir, it would do your heart good to see how comfortable and happy they look, lying there upon it chewing their cud: then, when you come to make your daily draft upon poor mooley for that indispensable requisite to give your coffee its delicious flavor, you can do it without being under the necessity of scraping and digging through, or, with sponge and tub of water, washing off the accumulated filth, before you can find where she keeps her deposits of milk and cream. I think even you, Mr. Editor, will admit that it may be used for other purposes than making sawdust puddings.

Second, it absorbs all the urine of the cattle, which is a very great item, as it adds at least 100 per cent. to the yearly amount of manure, aside from the sawdust itself. This, with the manure, is all thrown into the cellar, where the hogs take charge and commence their operations, which have thus far been to my entire satisfaction, their work being thorough; for, with a sprinkling of corn, by way of encour-

agement to them, it becomes well incorporated into a mass of excellent manure. There it remains until I want to put it *into* the ground—not *on* it, to dry up and evaporate and be carried off in the atmosphere, until my neighboring farmer gets more than I retain for my own benefit—by plowing or cultivating it in as soon as practicable—for I think it bad husbandry to allow manure to lay exposed to the sun, wind and rain, either in the field or barnyard.

Again, I think sawdust profitable to apply to all clayey soils, on account of its capacity of absorbing moisture in time of excessive rains, consequently preventing the clay from becoming so moist as to apparently form mortar, which, when it becomes dry, will be so hard that vegetation will find it difficult to subsist upon, much more to grow and flourish luxuriantly in, notwithstanding the soil otherwise might be in a condition from which under favorable circumstances, the farmer might expect good crops.

Again, sawdust well incorporated into clay soil serves to keep it loose and porous, so as to admit light and air, which are necessary to the growth of vegetation, as well as to early maturity, which is very essential in this region.—Where the land upon side-hills is liable to become washed badly with rains, I am satisfied that a liberal application of sawdust will greatly improve the condition of the soil, by preventing the rains from carrying away the best and finest portions as well as the most nutritious, by holding together the particles of soil, and allowing the water to pass through. You will see all the cavities upon the surface become filled, forming a sort of filter, through which the water will pass, leaving the fine soil upon the surface.

Again, if it be a receiver—which no one will doubt—it is also a retainer; hence its value, by holding a supply of moisture to be appropriated to vegetation in time of severe drouth. Every farmer knows that our hard clay soil, unless it has been subsoiled or trenched, is affected more by drouth than many other kinds, consequently it may be more profitable to use sawdust on clay soil than on others, although I have no doubt that it may be beneficial on any soil. I have used sawdust to some extent for the above purposes the three past years, although I have to transport it five miles. This year I shall use, probably, more than I have during the two previous years. I intend experimenting with it by preparing it with the salt and lime mixture so highly recommended by Professor Waring and others, and using it as above. I will communicate the result.

Yours, &c.,

A. HOAG.

Gardiner, March 6, 1857.

To Clean Kid Gloves.—Wash them in a mixture of equal quantities of ammonia and alcohol. Then rub them dry.

From the Country Gentleman.

How do the Nitrates of Soda and Potash produce their Fertilizing Effects.

THE agricultural public has had several opportunities, during the last two or three years, of becoming acquainted with the very remarkable effects which the nitrates above named usually produce upon vegetation generally, and more especially upon the growth of various grass and grain crops. So frequently have the nitrates, and especially the nitrate of soda, been used as fertilizers in the way of top dressings and otherwise, and so uniformly have very notable effects been produced, that it may be considered as a well established fact that the nitrates of soda and potash contribute very materially to the luxuriance of vegetation in several classes of plants, among which grasses and cereals stand pre-eminent.

When a fact of this kind becomes well established, there are always minds whose propensities to investigate and philosophize lead them to endeavor to discover the mode in which the cause operates so as to produce the effects. Some have this propensity to investigate and discover the manner or steps in the process by which remarkable results are produced, so very strong, that they can give themselves no rest until this *modus operandi*, or mode of operation as it is called, has been satisfactorily determined. This propensity to investigate into causes, modes of operation, and to seek explanations as to the how and the why of important events, has been implanted in our mental constitution for wise and good purposes; and has often led to the discovery of first principles of the utmost importance.

Urged on by this intellectual curiosity, and by the hope of some fortunate discovery of a valuable principle or first truth in agriculture, a French chemist "not unknown to fame," M. Boussingault, has of late been making some experiments on the *modus operandi* of the nitrates of soda and potash, when they act as fertilizers or promoters of a luxuriant vegetation. The results of these experiments M. Boussingault has lately communicated to the Academy of Sciences in Paris, in full detail. This full detail of M. B.'s experiments and results would prove tedious and uninteresting to the bulk of our readers; but a highly abridged summary thereof may prove of interest and value, we trust, to not a few. With such a hope, we have endeavored to condense the more interesting and instructive portions of M. Boussingault's paper into the few paragraphs which follow. He wished to determine how far their efficacy was owing to the alkalis which formed the base of these salts, all alkalis having some effect upon vegetation, and how far it was owing to the nitric acid with which the alkaline base was in combination.

The only explanation of the useful effects of the nitrates on vegetation of which M. B. had

any knowledge before commencing his experiment, was that of M. Kuhlman. That skilful chemist has arrived at the conclusion, that when the nitrates act as fertilizers, their nitrogen, before being absorbed by the plant, is transformed most frequently into ammonia in the soil itself. To obtain the full value of the nitrates, according to this theory, these salts must be placed "under the deoxidating influence of a putrid fermentation, of which the definite result will be the carbonate of ammonia." In regard to this theory, M. Boussingault remarks that it is to be regretted that M. Kuhlman has not investigated whether organic matters in the progress of putrefaction do really convert the nitric acid of the nitrates into ammonia. M. B. on this account, thought it proper to examine if the presence of putrefying organic matters in the soil is indispensable for the nitrogen of the nitrates being assimilated by the plant, for if it should appear that assimilation takes place in their absence, we would be at liberty, as M. B. remarks to draw two conclusions: 1st. That it is not necessary that the nitrogen of the nitric acid be previously converted into ammonia in the soil before becoming fit to be assimilated by the plant; and 2nd. That in their effects on vegetation the nitrates do not act solely as salts by means of the base of potash or of soda.

The process which M. Boussingault adopted consisted in making a plant grow in sand which had been rendered quite sterile by calcination, adding to it a known quantity of an alkaline nitrate and ashes. The watering was done with pure water; and after the plant was fully developed, it was analyzed to ascertain the quantity of nitrate it had absorbed, while the amount of nitrate remaining in the soil was also determined.

In the first experiment, two seeds of the sunflower, weighing together 0.062 grammes,* were deposited on the 10th of May, 1855, in calcined sand, with which had been mixed 0.1 gr. of alkaline ashes, and 1.0 gr. of washed ashes, and successively in the course of the experiment 1.11 gr. of the nitrate of potash. The sand was moistened at the commencement with pure water, and after germination with water saturated with carbonic acid. The plant grew in the open air, under a glass roof, which sheltered it from the rain and the dew. On the 19th of August one of the plants had obtained the height of 0.72 metres,† and carried nine fresh leaves and one floral bud, with some faded leaves at the lower part of the stem. The other sunflower was 0.50 metres in height (about 18 inches,) and had six fresh leaves of a beautiful green, and seven faded ones. The two plants after being dried, weighed 6.685

* French gramme is equal to 15.4325 grains troy.

† A metre is equal to 3.286 feet.

grammes, stem, leaves and roots included. Analysis of the plant and the soil gave the following results:—

	Grames.	
Nitrogen in the plants,	0.1126	
do in the soil,	0.0452	0.1578
Nitrogen in 1.110 gr. of nitre,	0.1536	
do in 0.062 gr. of seed,	0.0019	0.1555

Grain of nitrogen in plant and soil, after four months vegetation, 0.0023

From the facts connected with this experiment, M. B. draws the following conclusions:—

1. The nitrogen of the nitrate absorbed is assimilated by the plant. 2. For every equivalent of nitrogen assimilated, the sunflower receives into its composition one equivalent of potash. 3. We find in the soil nearly the whole of the nitrate which the plant does not absorb. 4. The action of the nitrate of potash, which is most decided from the very commencement of vegetation, manifests itself with the necessary addition of any putrefying organic matter.

In order to judge better of the effects of nitre, M. B. performed another experiment, which consisted in placing on the 10th of May, 1855, two seeds of the sunflower exactly in the conditions in which the seeds of the previous experiment had been placed. The only difference was in withholding the nitrate of potash from the substances added to the calcined sand. The plants in this case grew very slowly, were throughout of a pale green color, and in June, when the other plants were 0.20 metres in height, these were only 0.06 and 0.08 m. The nitrogen obtained by the growth of these two plants in the open air for four months was only 0.0033 gr.

Similar experiments were also made with the nitrate of soda, which is the nitrate most in use at present for agricultural purposes. The results were also similar. From both sets of experiments it seems highly probable, that the alkaline nitrates act on vegetation with as much readiness, and perhaps with more energy, than the salts of ammonia. The plants which languished in soil without any addition of a nitrate, flourished vigorously in the same soil when a nitrate was added—as vigorously indeed as they did, in one experiment, in a highly manured garden soil. The decomposition of carbonic acid by the leaves of plants, or the absorption of carbon into their composition, seems by these experiments, to be in some way dependent on, or subordinate to the previous absorption of some manure of a nitrogenous kind.

One result of some importance arising from M. B.'s demonstration that the nitrates act favorably on vegetation, by means of their absorption, directly or without the concurrence of substances in a state of decay, is that we are thus furnished with an explanation of the

influence, in part, of water used in irrigation. Though some water so used has been found to contain scarcely a trace of ammonia, it contained nitrates; and these contribute like ammonia—and more even than that—to the production of vegetable tissue, or the healthy growth of plants. To this solution of nitrates in some waters, may be owing, in some measure, the fertility of irrigated meadows.

In concluding this much abridged summary of the memoir submitted by M. Boussingault to the Academy of Sciences in Paris, we give his closing paragraph in his own words, thus translated:—“Notwithstanding the power with which a nitrate acts, we cannot accept it as a manure, as it only contains nitrogen and an alkali; but in associating it with the phosphate of lime, we obtain truly a compound possessing the qualities of guano, with more permanence in the nitrogen. In effect on the one hand, guano consists essentially of an intimate mixture of the salts of ammonia and the phosphate of lime, in a state of nearly equal chemical divisions; while, on the other hand, it follows from the foregoing experiments that the alkaline nitrates act on plants in a manner similar to the salts of ammonia. In the country I intend trying, in field cultivation, a mixture of nitrate of soda and phosphate of lime in chemical proportions. When these experiments are finished, I will communicate the results to the Academy.”

These promised experiments are probably in progress during the present season. The results we shall be pleased to see, and to communicate to our readers.

Steam Cultivation.

The cultivation of the soil by the power of steam, instead of by animals, is a question which has forced itself upon the attention of our farmers in the Western States, where there are broad prairies and very large farms. This subject is one of great and growing importance, so much so that Mr. Bronson Murray, of Illinois, as set forth in previous numbers of the *Scientific American*, has advised his brother farmers to contribute and offer a reward of \$50,000 for a practical steam plow that will prepare the soil more rapidly, even if the cost of plowing should be equally as great as by horses, the saving of time being the grand object where spring weather is of short duration. In hilly regions and for small farms the steam plow is out of the question; it can never overcome the *up hill work* in the one case, nor be profitably used on small farms in the other.—But on large farms containing several hundred acres of comparatively level land—such farms as are very common in Indiana, Illinois, and other States—and where there is plenty of cheap fuel, we believe that steam plowing will yet become general. Looking at the question on all sides, we do not see a solitary objection

worth a straw as to its practicability. There are many dolorous, doubting individuals, who will doubt its payability, or utility, but there have always been such persons, and the world will never be without them; but let them doubt as they may, the steam plow will yet be a successful reality, we believe.

Some persons have inquired of us, "what are the difficulties in the way of steam plowing on the prairies," and a correspondent from Mobile asks, "is it the want of traction in the wheels of the locomotive plow?" The latter can never prove a source of difficulty to its success; in fact, we do not know that there is a single difficulty in the way but one, and that is the want of spirited persons to make experiments. If Mr. B. Murray, and the farmers of Illinois who are interested, would subscribe \$50,000, and employ a competent and reliable engineer to build a steam plow for the purpose of experimenting, we believe this sum would be sufficient to test the question, find out all the difficulties, and make such alterations of machinery as would overcome them, and at the same time leave enough of funds to build a steam plow as the final result, that would meet every reasonable demand.

We are not aware that a single experiment has ever been made with steam plowing in our country; it is far otherwise in England, where wealthy landlords have not spared expenses to bring about such a desirable system of cultivation. Some very recent trials with steam plowing on Lord Haltherton's estate in Staffordshire appear to have been very successful, according to the account of them in the *London Engineer*. An engine of eight horse power plowed eight acres in one day, and put it into far better order, and at less expense than could be done by the common plow and horses. The engine was portable, but was kept stationary in the field while the plow was drawn by an endless wire rope passing around a windlass, and over standards. The whole cost of the engine, windlass, and apparatus was only £400—about \$2,000. This system of steam plowing is held to be the most economical; it is asserted by its advocates that there is a great waste of power in the locomotive plow to draw the weight of the engine over the field, all of which is economized in keeping the engine stationary, and the plow only moving. This is no doubt true; it saves power, but requires a great amount of apparatus, ropes, belts, windlasses, turn tables, and standards, to carry it out, and only a small portion of a large field, (circumscribed in length by the endless drag rope) can be plowed at once. This, however, is not a serious objection, because a large field may thus be plowed acre by acre as well as by taking in long and extensive landings at one continuous operation. We are extremely partial to the locomotive plow moving over the field and dragging a gang of plows at once—plowing up five or six furrows. With broad, flat wheels, such a steam

plow may be rendered successful, and the engine used (when not required for plowing) for threshing, grinding, corn-shelling, and various other purposes. It is certainly the most simple plan, and simplicity is one of the main points desirable in all agricultural machines.

On a former occasion we directed attention to this subject, and we have returned to it again in order to incite farmers to plowing experiments, which may be conducted from this period up to the month of next November or December. Parties interested in mechanical improvements relating to agricultural machinery, consider it to be a question of vast importance, and exhort us not to let it sleep until it is completely resolved.—*Scientific American*.

Limestone Soils.

[We are much indebted to Prof. GILHAM of the Virginia Military Institute at Lexington, for the following, in explanation of a subject interesting to a great part of our readers, and throwing upon it some valuable light, that will be new to many of them.—Eds.]

The remarks of a correspondent in one of the late numbers of the *Country Gentleman*, on the use of lime upon limestone soils, suggests the idea that a few remarks upon the origin, composition, and peculiarities of these soils may not be uninteresting to some of your numerous readers.

True limestone soils are such as rest upon, and owe their origin to beds of limestone, and in accounting for peculiarities in their composition and properties, it is necessary to know by what process they are formed from the rock. In the formation of soils from sandstones, slates, &c., a comparatively small portion of the rock is removed by the action of air and water, by which the mass loses its coherence and falls apart, or the rock undergoes disintegration, forming beds of sand, clay or loam, which by well-known ameliorating causes, finally result in soils suited to cultivation. But in the formation of most limestone soils, the limestone yields only after all of its carbonate of lime has been removed by running water charged with carbonic acid; the soil which results is composed therefore of nothing more than the substances which constituted the original impurities of the limestone. Many facts might be adduced in proof of this, one of which I mention. In railroad and other cuts made through limestone rocks, in old limestone fences, and in weather-worn masses of limestone, the various stages of decomposition may frequently be traced, from perfect and unaltered limestone in one part of the rock, to fine clay or loam, in which there is not a trace of carbonate of lime left in those portions that have been long exposed to atmospheric influences.

If this view of the origin of these soils be true, it follows that they, although resting upon close contact with limestone, are themselves

destitute, or almost destitute of carbonate of lime, a fact which has been repeatedly verified by the analysis of limestone soils. I have repeatedly tested such soils for carbonate of lime, and have invariably found, except when small pebbles of limestone were disseminated through the soil, that they contain no carbonate of lime, and that the lime which they contain in other forms of combination, such as the sulphate, phosphate, and silicate of lime, is frequently less than is to be found in soils which result from the disintegration of other rocks.

When the limestones have such slight coherence originally, that they disintegrate easily when exposed to frost, &c., this explanation does not apply; in such cases the rock breaks down to a sort of calcareous sand, yielding a soil which is highly calcareous. Such soils, however, are very rare in our country, the great mass of them having been formed from comparatively hard limestone, and in the manner explained above.

But while most limestone soils are destitute of carbonate of lime, and frequently contain very little lime in any form, it is a well known fact that these soils are almost invariably well adapted to the growth of an important class of lime plants—the grasses. Indeed so constantly are the grasses associated with limestone soils, that it is only necessary to turn out a field for a year or two, to have it covered with a thick sod of nutritious grass, and fine pasture may be had almost any where, by clearing out undergrowth, &c., sufficiently to admit the rays of the sun. This peculiarity of these soils, is, I conceive, to be attributed to the presence of the limestones, rather than to any thing peculiar to the soils themselves. We know that all running water in limestone countries, is charged with carbonate of lime, which is derived from the rocks while in contact with them; now I maintain that the same thing is true with regard to most of the water which finds its way to the roots of plants growing upon limestone soils. The water after falling upon the soil sinks down through it to the rock, and being charged with more or less carbonic acid which it has absorbed from the air and the soil, it takes up a small amount of carbonate of lime. Evaporation taking place at the surface of the soil, this water, with its charge of lime, rises by capillary attraction, comes in contact with the roots of plants, and yields to them its supplies of lime and other mineral food.

If the above be the true explanation of the origin of the limestone soils, we can see no reason why the application of lime to them should not be attended with beneficial results. Indeed the principles of science teach, that while the application of lime to them may not be attended by such very marked results as sometimes attend the application of lime, we certainly ought to look for the same benefits

here, that ordinarily attend the application of lime to other soils; and the fact that lime has been, and is now, applied to limestone soils with great success, ought not to excite any feeling of surprise.—*Country Gentleman.*

Ploughing in Green Crops.

Among the unsettled questions in regard to agricultural practice, is the effort of ploughing in green crops. Can land be improved in this way, and if so, what is the best mode? What crops are best for the purpose, and at what stage should they be turned in? These are questions on which more light is wanted, and we shall feel obliged for any facts relating to them which our readers may communicate.

Until experience convinced us to the contrary, we supposed that crops were most valuable for manuring the soil at the time of their greatest weight. Among the instances which tended to show the erroneousness of this supposition, the following may be mentioned: An acre of stout grass was measured off in a field, and on the 4th of July, the grass being in full blossom, it was rolled flat and then carefully ploughed in. On the adjoining portion of the field the grass was immediately cut and made into hay. The following spring the rest of the field was ploughed, the whole manured alike, and planted to corn. The crop where the grass was ploughed in was inferior from the start, and continued so to the end—giving a less yield than the land which had the grass taken off. Oats followed with similar results, and grass, following the oats, was still poorest where the soil was *manured* (?) with the green crop.

A case is recollectd which is given in the Transactions of the Essex (Mass.) Agricultural Society. A heavy growth of green Indian corn was buried by cutting it and laying it in the furrows as the ground was ploughed. The effect was to injure the following crops for several years.

We have lately heard of more cases of the same kind. A correspondent of the *New Jersey Farmer* says he “rolled and ploughed under about six acres of large oats, while in blossom and milky.” Wheat followed, but he “did not perceive that the oat crop ploughed under had a beneficial effect on the growth of the wheat, anywhere.” He tried another experiment the same year, which he relates as follows:

“I ploughed under one acre of good oats, in another field, on a sandy loam, while in about the same state, as to ripeness. The land, as well as that adjoining, had been, a short time previously, covered with calcareous earth—30 loads to the acre. Immediately after ploughing, sowed on two bushels of broom-corn seed, and then harrowed in. When the corn had attained a height of from three to six feet, and as thick as it could grow, I ploughed it under and sowed wheat. I cut the oats when ripe on all other parts of the field, and the land adjoining,

where I turned under the oats and broom-corn, I left without any manure to test more fully the experiment. The wheat on the land where I took off the oat crop and applied no manure, was poor, but if any difference, that where the two green crops—oats and broom-corn—were turned under the wheat was poorer, nor have I perceived any benefit resulting from those green crops since, and I have had two crops of grass, two of corn, one of oats, and two of wheat, since I tried the experiment."

Examples might be multiplied, but these are sufficient. To account for such results it has been suggested that the mass of green herbage produces acetic acid, which is injurious to growing plants. It has also been suggested that alkalis, applied to the soil in connection with the green crops, would neutralize the acid or prevent its formation. Have any trials been made in reference to this point?

It has been conjectured that on limestone soils these acids would not be formed; but the lime in such soils is in a state of carbonate and is *mild*; it only becomes alkaline or *caustic* by burning, and preserves that quality no longer than it is protected from air. It will be noticed that the New Jersey farmer, in one of the experiments above noticed, applied 30 loads of "calcareous earth" to the acre, with no apparent effect as regards the action of the green oats and broom corn.

It is, perhaps, probable that clover may be less inclined to produce the acid before spoken of, than grass, oats, and Indian corn; yet the effect alluded to are not altogether unknown where clover has been ploughed in. Farmers who are in the practice of turning in this crop, therefore, deem it best to allow it to mature and dry to a considerable degree, thus avoiding the consequences which the decomposition of a large quantity of sap is believed to produce.

The advantages of turning in crops depend somewhat on the mechanical condition of the soil. Tenacious soils are rendered more friable by the admixture of vegetable matter. Light soils are already too light, and though they are deficient in organic matter, it is desirable to apply it in such form as will not increase their lightness. Even tenacious soils are sometimes made too loose for the wheat crop by ploughing in clover—wheat requiring a soil of considerable firmness.

The effect of turning in crops, so far as relates to the improvement of the fertility of the soil, must depend something on the kind of crop used for this purpose. Some plants have the power of drawing more of their support from the air than others. Leguminous plants—clover for example—have this power in a greater degree than the gramineous—as oats or any other kind of grain or grass. It is no less singular than fortunate, that the former contain nitrogen in a greater degree than the latter. The grains, not being able to obtain their supply of nitrogen from the atmosphere, it must

be contained in the soil to bring them to perfection. Their growth and application to the soil cannot, therefore, increase the amount of nitrogen. The rapid destruction of this element, which is caused by grain crops, has been clearly proved by the experiments of Lawes.—But the result may be widely different in the production of crops which, like clover, peas, beans, &c., can draw more of their constituents from the atmosphere.—*Boston Cultivator*.

From the New England Farmer.

Small Farms vs. Large Farms.

Much is said in praise of small farms, and much is said against large farms. Agricultural writers seem to vie with each other in praise of the one, and denouncing the other. I wish those writers would tell us what a small farm is, whether 10, 20, 30, 50, or 100 acres.

It looks very nice on paper, to talk about a snug little cottage, a nice little garden, and a little farm, one or two cows and a horse, and no trouble of hired help. In practice it is a very different thing. I should like to see the first contented man who had to farm for a living in that situation; the first one that did not want a little more land.

If a man is going to gardening, and lives near a market, 5 or 10 acres will do,—but if a man is going to farming, let him have a farm from 100 to 500 acres, one that he does not have to sell off his stock in a dry year, or buy the corn for his own bread. That is the case back in the country frequently with the small farmers. I will give you some of the inconveniences of small farming, as I have been there, and know them well.

You cannot keep a team, but must be dependent on your neighbors to do your ox work, and they will do it when they can attend to it, or when they have got theirs done. At many kinds of work, one hand works to great disadvantage, such as haying, digging stones, laying heavy walls, plowing, &c. The buildings on a small farm must be nearly as costly as those on a large farm, to make you comfortable. The cost of a small farm is almost all buildings. But the worst of all is, you have nothing to sell, or nothing comparatively. I am not speaking of gardening, but of farming, of raising corn, potatoes, oats, wheat, rye, hay, dairy stock, &c. If 40 acres will support a family in a house worth 10 to \$1500 dollars, then 80 acres will support 2 families, with the 10 per cent. interest on the cost of the buildings, and 160 acres will support 4 families with from 3 to 500 dollars, saving on interest and repairs on buildings yearly.

Every other branch of business can be done best and cheapest on a large scale. Great factories, great ships, great machine shops; but little farms is the talk. I said I had been there. I commenced farming on a little farm about 20 acres, say 6 in mowing and tillage, 5 in wood-

land, and 7 or 8 in pasturing and brush. I was more plagued to carry on that than I am now with 2 or 300 acres. I could keep a horse and cow. I could not afford to have tools—no small farms can. It was borrow, borrow. Capt. S., can you let me have your cart to-day? Dea. E., can you lend me your plow, your harrow, or something? No team, no tools; I was soon sick of that, and I bought more land.

Give me a good large farm, and then I can have every thing that a farmer wants, and have something to sell. Can buy a dozen head of cattle at any time, or sell 20, just as fancy or interest may dictate. I want an orchard that would cover a little farm all over. If it is profitable to cultivate one acre, it is profitable to cultivate one hundred well. I know of no way that a man can make a little farm rich, but what could be adapted to a large farm. If there is, I wish your correspondent would point it out for the benefit of

X.

Hollis, N. H., 1857.

Healthy Houses.

Recent occurrences in Washington City prove the truth of an article we published two years ago, on "Health and House-Hunting." It is estimated that not less than a thousand persons had their health seriously impaired while at the National Hotel, in consequence of the drainings of the immense establishment having been prevented from passing off, allowing no escape for their destructive effluvia, except upwards through the building, first saturating the meats which were eaten, and then the atmosphere which the guests were compelled to breathe every moment they were on the premises; thus, at least, reported.

There can be no doubt that millions of people die every year from similar causes, but being less concentrated, the work is done in too gradual a manner to excite suspicion. In Boston, a number of years ago, very special pains were taken to keep the city in an unexceptional cleanly condition, to prevent the advent of cholera.

Every privy, every back-yard, every gutter, was scrupulously examined, and the occupant of each house was enjoined to keep the kitchen and pantry scrupulously free from dirt and dampness. Yet, after all this precaution, the cholera did appear in one street with great malignity, and a severe disappointment and discouragement was the result as to the efficacy of such sanitary measures. All was explained, however, when the visiting committee entered the cellar of an indicated house, and there, in its darkest corner, was the festering mass of corruption—the house offal of a whole winter. With its removal, the epidemic ceased.

As this May moving season is the time for changes, when many enter new purchased homes and all begin to 'improve' more or less, we crave a mature consideration of the suggestions made, believing as we do, that it concerns

the health of many families. And on all who change their habitations, we urge the bestowal of a large, a very large share of attention, first of all, to the cellar; remove every movable thing; open every door and hatchway; sweep it, yes, sweep it half a dozen times—floor, sides, ceiling; then give a plentiful coating of white-wash, made with unleached lime, and in all other respects, attend to the suggestions made a year ago, for the obvious reason, that whatever of filth is in the cellar, rises upwards and saturates the atmosphere of the whole building, not to kill you in a night, not to poison your system in so short a space as a few days, as at the National Hotel, in Washington City, but which in its more insidious workings, saps by slow degrees the health of those who are dearest to us, draining them of their vitality until none is left, and before we are aware, we find them a wreck, the mere shadow of what they were a few years before, in spite of their living in unexceptionable (outside) brown stone buildings, up town, in one of the best ventilated spots on the globe, with broad rolling rivers on either side, and an ocean at the foot, all owing to careless servants, their master setting the example, making the cellar the receptacle of all that is foul and filthy. There is more sound practical hygiene on this subject of healthy houses in the fourteenth chapter of Leviticus, from verse thirty-four, than in all the skulls of all the health commissioners and common councils of all the cities of Christendom.—*Journal of Health.*

From the Scientific American.

Syrups.

Although these preparations are so little used in England, there is no reason why they should not become a regular article in the housekeeper's store-room; they are easy to prepare, and are very agreeable to the palate, also economical, as they supersede the use of ardent spirits and wine. On the Continent it is a common practice to drink simple syrup (which is called *eau sucrée*, but which we term *capillaire*,) diluted with water to the taste of the drinker.

Capillaire is made thus:—Dissolve about two pounds of the best refined white sugar in one pint of water; boil the mixture for five or ten minutes, then strain it through lawn, or a hair sieve; when cold it is fit for use.

Syrup of Cloves.—Proceed in the same way as for making capillaire, but with the sugar add thirty to forty cloves that have been broken or ground.

All the syrups of spices, as cinnamon, nutmeg, ginger, &c., can be made in the same way.

Syrups of Fruit.—These are prepared in a similar manner to capillaire, substituting the juices of the fruit in place of the water; in this way it is very easy to make syrup of oranges. Before the oranges are squeezed, to express their juice, each orange should be well

rubbed or grated with the lump sugar—by so doing the fine flavor of the rind is preserved. All these syrups are drunk by diluting them with water. About a wineglassful of syrup to a tumbler of water will be found to make a pleasant draught.

Syrup of Coffee.—Take about an ounce of the finest coffee, ground, and a pint of cold water; allow them to stand together for twelve hours or more, then strain, and add one pound and a half of sugar; boil for one or two minutes, not longer, and again strain.

Syrup of Tea.—One pint of water, two pounds of sugar, an ounce of black tea; boil together for five minutes, or rather less, and then strain. A wineglassful to half a pint of cold water makes very good cold tea.

To Neutralise the Acid (or Sourness) in Fruit Pies and Puddings.—As the fruit season now advances, it is well worthy of notice that a large quantity of the free acid which exists in rhubarb, gooseberries, currants, and other fruits, may be judiciously corrected by the use of a small quantity of carbonate of soda, without in the least affecting their flavor, so long as too much soda is not added. To an ordinary sized pie or pudding, as much soda may be added as piled up will cover a shilling, or even twice such a quantity, if the fruit is very sour.

If this little hint is attended to, many a stomach-ache will be prevented, and a vast quantity of sugar saved; because, when the acid is neutralized by the soda, it will not require so much sugar to render the sour sweet.

SEPTIMUS PIESSE.

From the Germantown Telegraph.

Turnips among Corn.

MR. EDITOR,—I wish to call the attention of my brother farmers to the fact that turnips can be grown among corn with very little trouble or expense. I have raised them for several years in the following manner: After the cultivator went through the corn the last time for the season, I followed that with the turnip seed, sowing broadcast; a boy follows dragging a hand-rake, and it is done. Last year I used a drill with better success than broadcast. Two boys can keep up with the cultivator—one to pull, the other at the handles. Put one row of turnips between each row of corn. I of course am alluding to ground that will bring a good crop of corn; in poor ground it is useless to put turnip seed or anything else among corn. I have tried several different kinds of turnips, and find the *Yellow Aberdeen* and *White Norfolk* to produce the best. The latter I think is most productive. The seed can be procured at almost any of the seed stores in Philadelphia, at one dollar a pound, and a pound I think sufficient for a five acre field. It will most likely produce two or three hundred bushels. Now I consider the cost and trouble nothing in comparison to that amount of turnips to feed

during winter and spring. I do not consider the corn injured in the least by the turnips, as they grow principally after the corn is cut off.
May 22, 1857. SIMON.

FINE STOCK.—Among the treasures which Mr. Troye, the artist, brought from his recent exploration in Oriental countries, is a veritable Arab mare. The animal, which was purchased for a stock importing company in Kentucky, is now in this city. She is a long, well-knit, shapely creature, of a greyish color, about the average size, with very large and muscular thighs, and a marvelous elasticity in every movement. Her value is estimated at \$10,000. This is the second mare of the Desert which has been brought to this country. The first, also imported by this Kentucky company, came in by way of New Orleans. An Arab is extravagantly fond of such animals. He would almost as soon think of selling his own child as the fleet and patten beast which has been reared in his own tent, is his tireless companion in Desert Journeys, and his most productive source of income. The best stock in the world came from Arabia, and the importation of original Arab mares to this country cannot fail to improve the American breed of horses.—*N. Y. Journal of Commerce.*

The Duties of an Overseer.

As I have been working in the harness as an overseer for some time, and as I anticipate quitting the profession for the purpose of going to Kansas to fight the infernal Abolitionists, if necessary, and if not, to try something that is more profitable than overseering, I have concluded to give my views to my brother overseers upon the duties of an overseer, which they can take for what they are worth.

It is here supposed that the overseer is not immediately under the employer's eye, but is left for days or weeks, and perhaps months, to the exercise of his own judgment in the management of the plantation. To him we would say, bear in mind that you have engaged for a stated sum of money, to devote your time and energies for an entire year to one object, to carry out the orders of your employer strictly and cheerfully, and to the best of your ability, and in all things to study his interest. This requires something more than your mere presence upon the plantation, and that at such times as suits your own pleasure and convenience. On entering upon your duties inform yourself thoroughly of the condition of the plantation, negroes, stock, implements, &c., learn the views of your employer as to the general course of management he wishes pursued, and make up your mind to carry out those views fully as far as in your power. If any objections occur to you, state them distinctly, that they may be yielded to or overcome. Endeavor to take the same interest in everything

upon the place as if it were all your own, having been entrusted to you by another. Unless you feel thus, it is impossible to do your employer justice.

The health of the negroes under your charge is an important matter. Much of the usual sickness among them is the result of carelessness and mismanagement. Over-worked, or badly-cooked food, and night rambles, are all fruitful causes of disease. Well-cooked food, including plenty of vegetables, should be supplied to them at regular hours; that the sick be cheered and encouraged, and some extra comforts allowed them, and the convalescent not exposed; that pregnant women be particularly cared for, and in a great measure exempted from labor, and certainly from exposure and undue exertion for some time before confinement; and that while nursing they be kept as near the nursery as possible, but at no time allowed to suckle their children when overheated; that the infant be nursed three times during the day, in addition to the morning and evening, until eight months old, when twice a day suffice; that no whiskey be allowed upon the place at any time, or under any circumstances; but that they have whilst heated and at work plenty of good cool water; that care may be taken to prevent the hands from carrying their baskets full of cotton on their heads—a most injurious practice—and, in short, by using such means for their comfort as every judicious humane man will readily think of, you will find the amount of sickness greatly diminished.

Next to the negroes, the stock on the place will require your constant attention. It is a part of the duty in which overseers are generally most careless. The horse and mule stock are first in importance; unless these are kept in good order, it is impossible that the work can go on smoothly, or your crop be properly tended. Put your stables and lot in good order, and keep them under lock, and have them littered and cleaned out at proper intervals; to attend to sick or maimed animals—to see that the gears are always hung up in their proper place, kept in good order, and so on. It is an easy matter to keep horses or mules fat with a full and open corn-crib, and abundance of fodder; that overseer shows his good management, who can keep his team fat at the least expense of corn and fodder. Hogs are generally sadly mismanaged. Too many are kept and kept badly. One good brood sow for every five hands on a place is amply sufficient; indeed, more pork will be cured from these than from a greater number. The implements and tools require a good deal of looking after. By keeping a memorandum of distribution of any set of tools, they will be much more likely to be forthcoming at the end of each month. Axes, hoes, and other small tools, of which every hand has his own, should have his number marked upon it with a steel punch. The strict

enforcement of one single rule will keep everything straight—"have a place for everything, and see that everything is in its place."

Of the provision crops there is most commonly enough made upon most plantations for their own supply. Rarely, however, is it saved without great and inexcusable waste, and fed out without still greater. And this, to their lasting shame be it said, is too often the case to a disgraceful extent, when an overseer feels satisfied that he will not remain another year upon the place. His conduct should be the very opposite of this.

It is indispensable that you exercise judgment and consideration in the management of the negroes under your charge. Be firm, and at the same time gentle, in your control. Never display yourself before them in a passion; and even in inflicting the severest punishment, do so in a mild, cool manner, and it will produce a tenfold effect. When you find it necessary to use the whip (and desirable as it would be to dispense with it entirely, it is necessary at times,) apply it slowly and deliberately, and to the extent you are determined in your own mind to be needful before you begin. The indiscriminate, constant and excessive use of the whip is altogether unnecessary and inexcusable. When it can be done without a too great loss of time, the stocks offer a means of punishment greatly to be preferred. Never threaten a negro, but if you have occasion to punish, do it at once, or say nothing until ready to do so. A violent and passionate threat will often scare the best disposed negro to the woods. Always keep your word with them in punishments as well as rewards. Never forgive that in one that you would punish in another, but treat all alike, showing no favoritism. Never be induced by a course of good behavior on the part of the negroes to relax the strictness of your discipline; but when you have, by judicious management, brought them to that state, keep them so by the same means. The only way to keep a negro honest is not to trust him. This seems a harsh assertion, but it is unfortunately too true.

In conclusion, bear in mind that a fine crop consists, first, in an increase of the number, and a marked improvement in the condition and value of the negroes; second, an abundance of provision of all sorts for man and beast, carefully housed; third, both summer and winter clothing made at home; also leather tanned, and shoes and harness made, when practicable; fourth, an improvement in the productive qualities of the land, and in the general condition of the plantation; fifth, the team and stock generally, with the farming implements and buildings in fine order at the close of the year; and young hogs more than enough for next year's killing; then, as heavy a crop of cotton as could possibly be made under the circumstances, sent to market in good season, and of prime quality.

The time has passed when the overseer was valued solely for the number of bales of cotton he had made, without reference to his other qualifications.—*Farmer and Planter.*

Report of the Laurens Agricultural Society.

Characteristics of Overseers.

BY DR. J. A. METTS.

Having been appointed to report to the Society, on the duties of overseers, I proceed to do so. Planting is so much dependent on the capacity and action of the overseer or agent of the planter, that the topic would expand over a wide range, to treat it fully.

The day is past when the overseer should only be regarded for the energy with which he can accomplish manual labor, with a gang of hands. He should be intelligent and well informed upon all the routine of plantation duties; in fact, should be fully able to take charge of every department of the business upon the plantation to which his services are employed. He should be sober, industrious, and disposed to listen fully to the orders and suggestions of his employer. Whenever the employer gives an order, he should obey it, even if it did not coincide with his own notions.

Overseers, very often set up for themselves on plantations, and it is all "my crop," "my mules" "my stock," "my hands" with them, when out of sight of their employers. When we hear such expressions fall from the lips of an overseer, we invariably think that it is time such men should become proprietors, and give up the business of overseeing.

We do not object to a just pride and interest being felt by the overseer, in all things, but he should confine himself to the legitimate sphere of his duties. To enumerate them will perhaps best subserve the purposes of this report.

We will commence by remarking that the overseer should have a correct knowledge of the character, constitutional capacity, habits, and general disposition of every slave he has under his charge. He should be able to tell how much labor he could perform with his gang, on any given day, or in any given time. He should know every animal on the place—the horses and mules in the same manner as the negroes, and the other stock—by sight.

He should keep a regular inventory of every cow, sheep and hog on the place, and those should be counted every week, by him. Every tool and implement, every trace, pair of hames, sets of harness, in like manner should be entered in his list, and he should see, at stated intervals, whether any are missing. Waggon, carts, and plows; plow moulds, axes, spades, and shovels, all should be put down on the list, and kept in their places, and in good repair. This is legitimately the overseer's duties, and he is not perfect in his calling, until he does these things properly and correctly. He should be able to keep all the accounts, as well as the sales of domestic produce of the plantation, as of the produce of the different fields. He should recollect that his time is not his own, but his employer's, and that it should not be spent in riding about to public gatherings, when he has no particular business at such places. To the absence of overseers from their hands, may be attributed a great deal of the failure on plantations. The time which is idled away by the hands, all the bad work which is done in his absence, can never be remedied by pushing them on after he returns; he should remember that every day has its own tasks to perform. It is important that the overseer should be with the hands all the time they are at labor. He is the proper person to take in charge the young negroes, and teach them the methods of labor and the proper performance of their tasks. If they are properly trained, they will always be good hands, and if they are badly trained, they will always be indifferent hands. The overseer should attend also, and with great strictness, to the moral department and habits of cleanliness upon the plantation.—Health and cleanliness go hand in hand, and filth and disease in like manner are linked together.

Whenever the overseers of the land improve and fit themselves by education and information, to properly discharge all these duties, they will not be regarded as they usually are by their employers, as mere agents to do that work which they do not wish to do themselves. They control the property of so many people under our planting system, that it is highly requisite that they should be enlightened and well informed. Whenever they are thus taught, it is right and proper they

should be made companions of by their employers—for I would have none that I could not fellowship with.

By this course they will soon become gentlemen of good habits, and their tone of character vastly improved in every essential particular.—*Farmer and Planter.*

From the Massachusetts Ploughman.

Indian Corn, Maize.

(ZEA MAYS.)

In England the name corn is a general one, applied to all kinds of grain; but the vast amount of maize raised in this country, has changed this general name almost completely into a specific one among us, and by corn we mean Indian corn alone. In Germany this word (*korn*) is applied to rye almost exclusively, and the name is applied in different countries to that cereal grain which is raised in the greatest quantities.

Maize belongs to this great natural family of the grasses or *Gramineæ*, among which it is distinguished for its beauty and luxuriant growth. It is an *endogen* or inside grower, like most tropical plants, and its long waving leaves covering broad fields afford us a fine example of the present vegetation of the tropics. The flowers are monoecious, that is, the pistils and stamen, grow upon different parts of the same plant. The tassels, the staminate or male flowers, bear the anthers filled with fitten, which is shed upon the silk, the pistillate or female flowers, each flower terminating at first in a rudimentary kernel. If the silk is destroyed by insects, or in any other way, before fertilization takes place, the kernels will not perfect, as also if the plant, from poverty of soil or any other reason, lacks vigor for their development. Thus most stalks exhibit one or more rudimentary ears which never come to perfection. The *caryopsis*, or kernel, is compressed by crowding into a flattened shape, roundish when not crowded. The rows are always in pairs, from eight to twenty-four or more. When less than eight there is a vacancy on the sides of the cob. The pollen of one plant assists in fertilizing those that stand near, hence stalks growing at the distance of several rods from others, rarely produce perfect ears.

While we allow wheat to retain the title

of "prince of cereals," it must be admitted, that in many respects, maize is more justly entitled to it. Scarcely excelled by the former for culinary uses, its productiveness is so great that it far surpasses any other grain as food for animals, and in capacity to sustain a dense population. In America, with a congenial climate, it forms the basis of all successful husbandry, and we shall be justified in devoting considerable space to it in our columns, though but little new can be said upon its culture.

This was the only grain cultivated by the aborigines of this country, and of all the cereals best adapted to their uses. The different leading kinds were known to them and carefully kept distinct, for as they are not species but mere varieties, they readily mingle and lose their peculiarities. Even with this rude husbandry it yielded fair crops, was easily gathered and preserved, and with the simplest preparation afforded grateful and nutritious food. Indeed we can hardly conceive how without it the country could have maintained even so scanty a population. But, useful as it was to them, it seems even more necessary to us. The hardy pioneer easily carries the seed for acres, and in less than three months he can enjoy the fruits of his labors, even where mills and other appliances of civilization are unknown. Its numerous varieties adapt it both to a temperate and a torrid clime, and in soil it allows of the greatest range. We are not surprised then, at the report of the census of 1850, of the amount of the crop of 1849, and its relative value compared with other great staples. The total product for 1849 was 592,141,230 bushels, being double the amount of all other grains, as wheat, rye, oats, buckwheat, barley, peas and beans, while in value it slightly exceeded the three leading articles of wheat, cotton and hay. The same census shows a gain at a rapid ratio upon the others in the amount produced.

The average crop throughout the Union is shown to be 25 bushels, while Connecticut has the honor of giving the highest yield per acre, forty bushels. The average of Massachusetts is thirty-one, while Ohio gives thirty seven, some counties in the latter State averaging fifty bushels. The five States of Ohio, Kentucky, Ten-

nessee, Indiana and Illinois, produced over 280,000,000 bushels, being one half the entire crop of the country. Most premium crops, as shown by the statistics of our agricultural Societies, exceed one hundred bushels per acre, and there is little doubt but that the cost per bushel of corn yielding one hundred bushels, is less than that of corn yielding less than forty, the average in this State. It is an interesting inquiry why the average is so low, especially in many States of reputed fertility. Ignorance, not only of the wants of this crop, but of the simplest principles of vegetable physiology, with adherence to old and false practices conduce to this result. As tolerable crops are sometimes realized even when sadly neglected, too many are satisfied and seek for no improvements.

VARIETIES.

The greater number of varieties including every shade of white, yellow, red or striped, and dark purple colors, all shapes of kernel and size of ear, resulting both from accident or soil and climate, now possesses a good degree of permanence, when planted separately, though they readily mix when planted together, and lose their peculiarities when transferred to an ungenial climate.

The Duck Trade.

Among other sources of wealth which have been developed by the establishment of a line of steamers between this port and New York, we have heretofore overlooked the traffic in wild ducks, which gives employment to a large number of persons, and requires little or no capital to carry it on. How many are employed in the slaughter of the web-footed tribe, we are unable to say; but we will take for example the operations in this line as carried on by Edgar Burroughs, Esq., a substantial and respectable farmer of Princess Anne, on Long Island, Back Bay, (which he has lately purchased,) from time immemorial famous as the resort of wild ducks and geese. He has had twenty men employed constantly since the commencement of the season, and up to the 30th of December they had consumed in their vocation twenty-three kegs of gunpowder, with shot in proportion. The ducks which they killed were brought to Norfolk once

a week, and piled up in the warehouse of Kemp & Bushy, on Roanoke square, where, on every Wednesday, they were packed in barrels and shipped for New York by the steamship Jamestown. The number of barrels thus sent off weekly, have, up to this time, averaged from 15 to 25 barrels, and one week the number reached as high as 31. They consist of all the varieties of the duck species known in our latitude, such as canvas backs, red heads, mallard, black ducks, sprigtails, bullnecks, baldfaces, (or wigeons,) shovelers, &c., to which may be added a good proportion of wild geese. Yesterday being packing day, we were invited by our friend, Mr. Burroughs, to step in and see the display of game; there was enough to fill 16 barrels, a considerable portion being canvas backs, which were uncommonly fine. Heretofore the season has been highly favorable for the success of these operations, as ducks will keep a long time in such cold weather as we have had, and will probably continue to have through the season. We should be glad to obtain some further statistics respecting this new traffic; such as the expenditure of ammunition, the whole number of barrels shipped in a season, the number of ducks and geese contained in them, the number of persons employed, the average price sold for per pair in the New York market, and the probable amount netted to the enterprising individuals who carry on the business. It would form a curious record, especially to those who remember when Norfolk was the only market that was supplied with game from the same quarter.—*Norfolk Herald.*

CURE FOR HYDROPHOBIA.

Receipt.—First dose, 1 oz. of elecampāne root, boiled in 1 pint milk until reduced to a half pint. Second dose (to be taken two days after the first,) 1½ oz. of elecampāne root boiled in 1 pint of milk, boiled as the first. Third dose, the same as the second (to be taken two days after); in all three doses.

The above was sent to the *N. York Tribune* by J. W. Woolston, of Philadelphia, as a cure for the above terrible disease, and he states that he has known it to be perfectly successful in effecting a cure in twenty cases.—*Scientific Am.*

The living principle in plants makes powerful efforts to place their lateral roots at a proper distance from the surface.

Mapes' & Gibbs' Rotary Digger.

We are very glad to get the following report of the Beech Island Farmers' Club, which we extract from the *Southern Cultivator*. It is a favourite implement of Prof. Mapes, which does not seem to have progressed from the primaries, to use the technicality of that eminent professor of Chemistry and Chilian Guano.

Unlike the editor of the *Southern Cultivator*, we will express an opinion on this subject.—The report of the New York Committee is headed by "H. MEIGS, chairman," whose name we frequently see in The Working Farmer as chairman or something of the sort at those meetings of some agricultural club of New York city where Prof. Mapes is in the habit of promulgating his *Progression of the primaries* and other crudities. Who the others may be we do not know. But we do know that the report of the Beech Island Farmers' Club emanates from a class of men who are entitled to much higher credit, *prima facie*, than a similar body from New York city under the auspices of Prof. Mapes and H. MEIGS, chairman. But we also know from other authority in New York city, which we are not at liberty to name, that the Rotary Digger is not held in high repute there by every body.

The leading idea of this implement is not new: we have several times extracted articles into the Planter which discussed it. It originated in the speculations as to the application of steam to ploughing; some very ingenious persons contending, we think correctly, that as the mode of action of steam was rotary in all things else, so must it be in aration; and that a true steam plough would be a rotating cylinder armed with projecting teeth, like, say, the teeth of a cultivator, which should be forced into the ground by the weight of the cylinder, and prized out by its forward motion as a spade is prized out by the spademan, thus pulverizing the earth more completely than the plough, and throwing the dirt behind, as a dog does in scratching; whilst the baking of the ground, such as a plough makes at the bottom of the furrow, would be altogether avoided.

We mention this lest persons should discard the idea altogether from the ridiculous failure of our sugar-house professor. We beg them not to do it, and assure them that if they do, they would make as great a blunder as if they

should condemn Peruvian guano because the Chilian article had proved worthless.

Those who are curious on this subject and will consult the pages of *TALPA, or the Chronicles of a Clay Farm*, a delightful little work which every farmer of literary taste should read, will there find it very pleasantly discussed.

Reports of Committees—Mapes' and Gibbs' Rotary Digger.

The undersigned, committee of the Beech Island Farmers' Club, appointed to test the performances of a "Mapes' & Gibbs' Rotary Digger," and "Washington Plow, No. 2," recently purchased by a member of this Club, report: That they have witnessed the performances of these implements in a loamy clay soil in excellent order to exhibit them to the best advantage.

From the cost of the Digger (\$125 at the factory in New York,) and from several notices of it in the *Working Farmer*, a journal conducted by Mr. Mapes, one of the inventors, and particularly on account of an editorial article in the July number of that journal, in which it was stated that, with a single yoke of oxen, this implement would completely pulverize the soil the width of two and a half double horse plow furrows (assumed to be at least 20, perhaps 30 inches) and 16 inches deep, the Committee expected to see the most remarkable and efficient agricultural implement yet invented—one calculated to create a new era in farming.

On examining it, they found that it was an attempt to combine the Subsoil Plow, the Roller and the Harrow in one. The Subsoil Plow which was attached to the beam in front, had a blade 7 inches wide at its greatest width, and from the bottom of the blade to the beam was 15 inches. The Roller, which was immediately in the rear of the subsoil plow, was 10 inches long and 14 in diameter. On each side of the roller were the diggers, small iron teeth $2\frac{1}{2}$ inches wide and 6 inches long. The Roller consisted of a succession of plates revolving each on a journal of its own, and each digger or tooth did the same; both the roller and diggers, however, revolving in the rear of the plow on a common axel. We tried this implement or machine first with one yoke of oxen, but finding they could not pull it when made to do its utmost, another equally fine yoke was added, and the work was more than ample for both yokes. At its best, this machine subsoiled and rolled down (the land being in such condition that not a clod was made) a strip 7 inches wide, the centre of which was $12\frac{1}{2}$ inches deep, and the whole on an average of 10 inches. It could do no more.

The Diggers at the sides entered the earth, making holes, on an average, 4 inches deep, and scooping out at every 6 inches, a handful

of earth. The entire width of subsoiled and scarified land was 18 inches, and a very thin coating of dead grass choked it up every 30 or 40 yards.

As good a Subsoil Plow as this can be placed on the plantation of any member of this Club for \$6, and can be made to pulverize the earth as deep and as wide with two good mules. The Roller is of no appreciable value; while the diggers, whose only possible use might be to pierce a clod occasionally, and which absorb at least one-half of the motive power, are simply a nuisance.

The unanimous opinion of the committee is that the "Mapes' and Gibbs' Rotary Digger" is a gross imposition. The question was put and not one of the committee would consent to accept of it as a present.

The "Washington Plow, No. 2," the cost of which was \$10 at the factory, was next tried. It was found to be rather too much for one yoke of oxen, but two yokes carried it with ease, and it cut and turned a furrow 12 inches deep and 12 inches wide. For breaking up land and for hill-side ditching and surface drains, it is an excellent implement. While in the opinion of the Committee the "Digger" never can be improved into a machine of any economic value, they think it would be a very great improvement to the latter valuable plow to make the beam 6 or 8 inches longer. All of which is respectfully submitted to the Club.

R. BRADFORD,
Chairman.

S. CLARK,
H. R. COOK,
JON. M. MILLER,
GEO. B. MILLS,
J. H. LAMAR,
T. W. WHATLEY,
H. L. MAYSON,
Committee.

Jan. 17, 1857.

[Without expressing our own opinion on this subject, but merely for the purpose of showing how differently the same matter is regarded by different people, we append the following Report on this implement, from a number of gentlemen at the North, who also witnessed it in operation.—*Eds. So. Cult.*]

MAPES' AND GIBBS' DIGGING MACHINE.

This implement the committee saw in use, and had every reason to be satisfied with its performance, as it leaves the soil in better tilth and to a greater depth, than can possibly be brought about by plowing, harrowing and rolling.—This machine may be worked by a pair of oxen or mules, and will disturb as much soil in two hours to a depth of sixteen inches, as can be disturbed in five hours by the same team with any plow to the depth of eight inches; or, differently stated, it will disturb five acres to the depth of sixteen inches, in the same time that

the same team can plow two acres to a depth of eight inches. The soil is left in a finely divided state, and the machine may be so set that the surface will be turned to any required depth from one to twelve inches, while the lower portion is disturbed without being elevated or mixed with the surface-soil.

H. MEIGS, *Chairman.*

JOHN A. BUNTING,
THOS. W. FIELD,
A. O. MOORE,
JOHN V. BROWER,
R. L. WATERBURY, M. D.
C. F. TUTTLE,
A. S. WALCOTT,
WM. RAYNOLD,
S. BLACKWELL,
JOHN M. BIXBY,

New York, Jan. 3, '57. *Committee.*

BAROMETER FOR FARMERS.—In one of his letters, Humboldt says that a barometer should be considered as necessary on a farm as a plow: but farmers generally prefer to trust in the moon and other exploded nonsense, rather than invest thirty dollars cash in a reliable instrument that would repay them tenfold. A substitute, called Leoni's Prognosticator, is sold for ten dollars. It consists of a phial full of a clear liquid, in which swims a snowy substance; in fine weather that substance lies on the bottom, but before a storm it rises to the surface, with a tendency to the side opposite the quarter from which the storm is coming. The substances used are kept secret. An ordinary barometer indicates the density of the atmosphere. Leoni's instrument evidently indicates its electric state, and for that reason we are of opinion that it is a better instrument to prognosticate the weather. The following is a substitute that will not cost more than a shilling, and for aught we know it may be the identical thing itself. Dissolve some camphor in alcohol and throw into the solution some soda; the camphor will be precipitated in snowy flakes; collect these by passing the mixture through a filter, and put them in a phial with clear alcohol in which as much camphor as it would take has been dissolved. Cork it, place it where it will not be disturbed, examine it every morning and night.

MARKING.—An English writer gives the following:—Mark on either side of the nose of the sheep, the initials of the owner's name, and on the opposite side any number by which he may choose to designate the particular sheep, by means of a small iron figure or letter about an inch long; which being dipped in common oil colors, mixed with turpentine to dry them more readily, is placed on the part described, and will continue until the next shearing season. The process is easy and will give the animal no pain; the marks cannot be readily obliterated, which is not the case with tattooing or cauterizing.—*Wool Grower Reporter.*

High Farming in England.

The following chapter we take from the *Rural Economy of England, Scotland, and Ireland*,—a work of M. DE LAVERGNE, a French gentleman, who, a few years ago, made an agricultural tour in Great Britain, with a view to compare it with the agriculture of his own country. Though very little of what is contained in this chapter will possess a practical value to an American, it cannot fail to interest every enlightened reader. It will, we hope, induce some of them to purchase and read the book. It gives the best picture we have seen of the farming of the best farmed country in the world. We have reduced the British currency to our American standard, to save the reader the trouble of making calculations.

Among the innovations in agriculture which the last crisis produced, by far the most important—that which will remain as the most useful effect of that great disturbance—is the process of putting the land into good condition, known by the name of drainage. The draining away of superabundant water, especially upon stiff soils, has always been the chief difficulty in English agriculture. Hitherto the means employed for getting rid of it were imperfect. Now, however, the problem is completely solved. "Take this flower-pot," said the President of a meeting in France lately; "what is the meaning of this small hole at the bottom?—to renew the water. And why to renew the water?—because it gives life or death: life, when it is made only to pass through the bed of earth, for it leaves with the soil its productive principles, and renders soluble the nutritive properties destined to nourish the plant; death, on the other hand, when it remains in the pot, for it soon becomes putrid, and rots the roots, and also prevents new water from penetrating." The theory of drainage is exactly described in this figure:

The new invention consists in employing cylindrical tiles of burnt clay to carry off the water, instead of open ditches, or trenches filled with stones or faggots,—methods known even to the ancients. These tiles are several decimetres* long, and placed end to end at the bottom of trenches, which are then filled in with earth. It is difficult at first to understand, without having seen the effect of these tiles, how the water can get into them and so escape; but as soon as one sees a drained field, not the smallest doubt of the fact can remain. The tiles perform the office of the small hole always open at the bottom of the flower-pot.

They attract the water, which comes to them from all parts, and carry it out either into drain-pits, or main-drains, where the inclination of the land admits of it. These tiles are often made by machinery, which renders their manufacture inexpensive. They are made of various dimensions, and laid in the trenches at a greater or less depth, and more or less apart, according to the nature of the soil, and the quantity of water to be drained off. The total cost for purchase and laying amounts to about £4 (\$20) an acre. It is now generally considered that this outlay is money invested at 10 per cent., and the farmers scarcely ever refuse to add to their lease 5 per cent. per annum upon the proprietors' outlay for draining.

There is something magical in the effect of draining. Both meadow and arable lands are equally benefited by it. In the meadows, marsh plants disappear; the hay produced is at once more abundant and of better quality.* On the arable lands, even the most clayey, corn and roots shoot more vigorously, and are healthier, and less seed is required for a larger crop. The climate itself gains sensibly by it. The health of the inhabitants is improved; and in all parts where drainage has been vigorously carried out, the mists of the foggy isle seem less thick and heavy. Drainage was thought of for the first time ten years ago, and a million of hectares† at least are already drained; everything promises that, in ten years hence, almost the whole of England will be so. It is as if the island were once more rising out of the sea.

The second improvement, of a general kind, which will date from the last few years, is a large increase in the employment of machines, and particularly of steam. Previously to 1848, very few farmers possessed a steam-engine. Now, one may safely say that, in ten years hence, the exceptions will be those without them. Smoking chimneys are to be seen in all parts of the country. These steam-engines are used for thrashing corn, cutting fodder and roots, grinding cereals and oilcake. They are also employed to raise and distribute water, to churn butter, &c. Their heat is no less available than their power, and serves to prepare food both for men and cattle. Some movable steam-engines go from farm to farm like a labourer, to do heavy work. Small portable

* Experience has shown, for some time past, the danger of draining grass land in the drier parts of England. I mention this exceptional fact here, in order to put upon their guard those who are seeking to introduce drainage into France. One cannot be too cautious where an agricultural innovation is concerned.

† A hectare is two and one-half English acres.

* The decimetre equal to nearly four inches.

railways have been invented for conveying manure to the fields, and carrying back the crops. Machines for mowing and tending hay, reaping, and digging, are now under trial. Some have even undertaken to plough by steam, and do not despair of success. The great desire at present is to find means for turning up the soil to a depth hitherto unheard of, in order to give greater vigour to the arable bed. Everywhere mechanical genius is making exertions to carry into agriculture the wonders it has elsewhere realized.

These new processes are only new applications of old principles; but there is one which is at variance with all habits, and which encounters more opposition. I have already remarked how much the pasturage of cattle was held in repute by the English farmer. The new school does away with this mode of feeding, and introduces permanent stall-feeding (*stabulation*.) But this improved stabulation differs as much from the imperfect system practised upon the Continent, as the cultivated pasture differs from the coarser pastures of our poor districts. Nothing is bolder, more ingenious, more characteristic of the spirit of enterprize among the English than the present system of stabulation, such as has been first practised in clay districts by the inventors, and which tends to extend itself everywhere.

Suppose a cattle-house, thoroughly aired, usually constructed of open planking, with mats of straw, which are raised or lowered at pleasure for the purpose of sheltering the animals, in case of need, from the wind, sun, or rain. The cattle, usually of the short-horned Durham breed, are there shut up loose in boxes, where they remain till ready for the shambles. The flooring under them is pierced with holes, to allow their evacuations to fall into a trench below. Beside them is a stone trough, with abundance of water; and others contain an unlimited quantity of food. This food is sometimes composed of chopped roots, bruised beans, crushed oilcake; sometimes a mixture of chopped hay and straw and bruised barley; the whole more or less boiled in large boilers, heated by the steam-engine, and fermented some hours in closed vats. This extraordinary food, the appearance of which confounds a French agriculturist, fattens the cattle with great rapidity. Milch cows even may be submitted to this seclusion. Examples of this stall-feeding are found even in the counties most renowned for their dairies, those of Cheshire and Gloucestershire. The animals are there fed on green meat, and the strictest attention is paid to ventilation, and having the sheds thoroughly lighted and clean,—warm in winter, and cool in summer, protected from variations in temperature, and from all that might disturb or annoy the cows, which there live in a constant state of ease and quiet, very favourable to the secretion of milk.

The manure which accumulates in the trench

is not mixed with any kind of litter; it has been thought much more profitable to make the cattle eat the straw. This manure is very rich, owing to the quantity of oily substances contained in the food of the animals, a portion of which is not assimilated by digestion, notwithstanding all the means used for that purpose. This manure is taken out every three months, when required for use. In the mean time, it is neither washed by rain nor dried by the sun, at is too often the case with the manure-heap exposed in the farm-yards. A light sprinkling of earth or other absorbent hinders or retards the disengagement of ammonia, and its consequent dissipation in the atmosphere. In entering these sheds, the absence of smell is remarkable. The manure in this way preserves all the fertilizing elements which escape elsewhere and poison the air, in place of fertilizing the soil. Sometimes it is employed in a solid state for cereals, sometimes diluted with water, and applied in a liquid state to meadow land.

Pigs, like oxen, are fed indoors, and upon perforated flooring: their food is similar. Sheep alone are still fed out of doors, but they also are immured as much as may be. No bad effect upon the health of one or other has yet been perceived from this strict confinement; provided they enjoy constant pure air in their prison, and have the necessary space to move about—that is to say, a yard square for a sheep or a pig, and two to three yards square for a bullock—it is said that they thrive excellently. Exercise in the open air, hitherto considered necessary, is now looked upon as a loss, which shows itself by a diminution in weight.

One cannot help feeling sorry to see these poor animals, whose congeners still cover the immense pastures of Great Britain, thus deprived of their liberty, and prevented from moving about, and in thinking that the day may perhaps come when all the English cattle which now enjoy the green pastures will be shut up in melancholy cloisters, which they will leave only for the slaughter-house. These manufactories of meat, milk, and manure, where the living animal is absolutely treated as a machine, have something about them revolting, like a butcher's stall; and after a visit to one of these stalled prisons, where the process of making the staple food of the English is so grossly carried on, one takes a loathing at meat for several days. But the great voice of necessity speaks out. Every energy must be used to feed that population which unceasingly multiplies, and whose wants increase in a greater ratio than their numbers. The cost of producing meat must be lowered as much as possible, in order to obtain a profit with the new scale of prices.

Adieu, then, to the pastoral scenes of which England was so proud, and which poetry and painting vied with each other to celebrate

Two only chances remain to them; and these are, that some new discovery may be made for raising the produce of pasturage to the same height as that which stabulation now gives, or that further experience may show some detriment to the cattle from this confinement. Already complaints are made about the quality of the meat so abundantly produced in this way; it is said that the oilcake gives it a bad taste, and that the excess of fat on the Durham cattle and Dishley sheep renders the meat neither very agreeable nor so nourishing. It is possible that this is an evil in the new system, and that pasturage, surpassed in quantity, maintains its position for the quality of its produce; it is possible, also, that some new disease may suddenly develop itself among these inert and unnaturally fattened races, and oblige a new infusion of more energetic blood. In any case we may depend upon this, that the old-fashioned pasturing will not be given up without a struggle; if it is destined to disappear, it will be because of their being no other alternative. The most likely result is the adoption of a mixed system, partaking of the advantages of both methods.*

While by means of the improved pasture farmers succeeded in keeping at most one head of large cattle, or its equivalent to one hectare in cultivation, which was already much more than could be done in France, it is now maintained that by stabulation they will be able to keep two, or even three, and so increase considerably the production of cereals. In that case, all the land becomes arable; and the Norfolk rotation may be applied over the whole extent of the property, in place of being confined to a half. Such are the changes which take place in things human; agriculture is subject to them like all else. Hitherto it was the use of the pasture-land which, by increasing the number of cattle, and reducing the breadth of cereals, swelled the average return of the corn-land. Now the reduction or abolition of pasturage, while it further increases the number of cattle, supplies fresh means for increasing the fertility of the soil, and consequently the production of corn for human consumption.

We have already noticed that, in the present state of things, a farm of 175 acres, taken in average condition, would have 75 in grass and natural pasture, 20 in roots and pulse crops, 20 in barley and oats, 40 in artificial grasses, and 20 in wheat. By the new system, pushed to its greatest extent, the natural mea-

dows would disappear, and the 175 acres would be thus divided: 35 in roots or pulse crops, 35 in barley and oats, 70 in artificial grasses, and 35 in wheat. The proportion of improving crops to exhausting, which in the first case was 135 to 30, would in the second be only 105 to 70; but this difference, it is said, would be more than compensated by the additional quantity of manure, since, instead of feeding 70 head of cattle, 150 or their equivalent might be kept, and not an atom of manure would be lost.

Can the extension of roots, pulse crops, and artificial grasses, at the expense of natural pasture, really give, as is affirmed, two or three times more food for cattle? This question is already, in many respects, proved by facts. All these crops are improved together, and, with the aid of draining and machinery, carried to their maximum. The cultivation of turnips in drills, called the Northumberland system, nearly doubles their produce; the *rutabagas*, or swedes, which are substituted for English turnips on clay lands, give a better result; and a still larger increase is obtained from the artificial meadows since two new methods have been introduced for rendering vegetation more active: the first is the use of a particular kind of rye-grass, called Italian rye-grass; the second is an improved method for distributing liquid manure.

The Italian rye-grass is a plant remarkable for its rapid growth. It lasts only two years; but under favourable circumstances it may be cut as many as eight times in one season. The hay it gives is hard, but, consumed in the green state, it is excellent. It thrives even in the coldest districts, notwithstanding its name and origin; and it is fast coming into general use, both in England and Scotland. If it realizes the expectations formed of it, it would seem to be superior to lucerne.

As to the mode of distributing the liquid manure, it is certainly the most original and curious part of the system. It was invented by Mr. Huxtable of Dorsetshire, the principal promoter of the new agricultural revolution. It is as follows: The evacuation of the cattle, after falling into trenches running under the stalls, pass through pipes into a reservoir, where they are mixed with water and fertilizing substances; from thence other pipes branch off underground to the extremities of the property. At distances of every fifty or sixty yards are placed vertical pipes rising from the conducting-pipe to the surface of the ground, the orifice of which is closed by a cap. When it is desired to manure a part of the land, the cap is removed from one of the vertical pipes, and a gutta-percha tube fitted on; a pump put in motion by the steam-engine drives the liquid through the pipes, and the man who holds the movable tube waters around him as from a fire-engine. A man and a boy are able to manure in this way five acres a-day.

* We believe this last conjecture is that most likely to be realized. Box-feeding and soiling is not gaining so rapidly in favour as to cause us any anxiety, either as to the desertion of our pastures, or the comfort and health of our stock.—J. D.

The expense of the pipes and pumps amount to about 30s. (\$7 50) per acre, where earthenware pipes are employed, and £4 (\$20) where they are made of cast iron. The construction of reservoirs and setting up a steam-engine constitute a separate expense, and ought not to be included in the estimate, since both the one and the other are henceforth indispensable in every well-ordered farm. The laying of the pipes becomes then an economy rather than an expense. The outlay for first cost and keeping up is very soon regained by the saving in manual labour and time, and the results obtained are splendid. Vegetation very quickly takes up the enriching properties thus divided and distributed in showers. The effect of the application is in some degree immediate; and it may be constantly exhausted, since it can be constantly renewed.

This ingenious invention is evidently destined to meet with the greatest success. Mr. Huxtable began upon sixty acres; but now there are farms, particularly in Ayrshire, where these pipes extend over five hundred. It has the merit of being adapted to all systems of cultivation, and may be the means even of preventing the doing away with pasturage: it is capable of application in all climates, and may be carried on in hot countries, where it would effect much greater wonders. It appears capable of a still wider application than drainage, and it can hardly be too strongly recommended to the attention of French farmers.

Owing to this increased quantity of manure, enhanced still further by all the artificial manures which the imagination has been able to discover, the return from cereals may be increased in the same proportion as animal production. Upon lands cultivated under the new methods, the average return amounts to forty-four* bushels per acre of wheat, fifty-five bushels per acre of barley, and sixty-six bushels per acre of oats: as the extent of wheat-sown land is at the same time much increased, the total production is more than doubled. These are not mere speculations, but facts realized in many parts of the United Kingdom. In every county there is one farm at least where some rich proprietor is not afraid to make these trials, and the body of farmers observe, study, and, according to the extent of their resources, copy what is successful.

The whole of the system can only be advantageously practised in the districts most favourable to the production of cereals—that is to say, in the south-east, where the crisis told the most severely. In the west and north, cereals are being almost entirely given up. Division of labour thus makes a fresh step:

the cultivation of cereals becomes extended upon the lands most adapted for them, and is diminished on those least favourable to their production. Upon the whole, it does not appear that the proportion of corn-sown lands ought sensibly to change. In those districts where the attention of farmers is being more and more directed to the feeding of cattle, the results obtained solely by means of stabulation and the use of liquid manure, if not better, are at least more certain. I will quote but one example—the farm of Cunning Park, in Ayrshire. This farm, which is only fifty acres in extent, was, previously to the crisis, in the average condition of England. The rent did not exceed 25s. (\$6 25) per acre, and the gross produce £4 (\$20) per acre; now the gross produce reaches £24 (\$120) per acre, and the net at least £8, (\$40.) Nevertheless, Cunning Park produces only milk and butter; but as a result of the new methods, it now supports forty-eight in place of ten cows, and each of these cows is much more productive.

Such are the general features of the present agricultural revolution—high farming, as it is called. I must, however, point out one more circumstance which may serve still further to characterise the system—the war waged against hedges and game.

When pasturage was the leading feature in English farming, large hedges had their use, but as stabulation increased that use diminished; they may, moreover, be replaced by low hedges or other enclosures. Farmers now find them only inconveniences; they take up a great deal of room, their shade and their roots are both hurtful to the crops, and they give shelter to a host of birds, which devour the seed. The majority of proprietors are still opposed to their destruction; first, because the prunings and thinnings of the hedgerow trees bring them in an income, and then because these hedges contribute greatly to the beauty of the landscape. But some have already cleared them away, and the rest will have to yield, at least to a certain extent; for the public, impressed with the importance of the question, declares itself more and more every day in favour of the former. A similar fate is evidently reserved for the game, the increase of which has hitherto been favoured by the severity of the Game Laws, to the great injury of crops. Opinion, so favourable in England to large property, and at the same time so exacting with regard to it, begins to make it a matter of duty with landlords to sacrifice their pleasure to the new necessities of production.

While assisting in this peaceable contest, the issue of which cannot be doubted, one cannot help feeling that abuses of the same nature were one cause of the French Revolution. In order to preserve themselves from the ravages of the seigniorial hares and rabbits, our farmers found no better method than to de-

* Five and one-third bushels Virginia measure.

molish the chateaus, and kill or drive out their proprietors. English farmers exhibit more patience and moderation, and they are no less successful in attaining their end without violence. Their only weapon is the obstinate representation of their grievances. They quietly calculate how many acres of land are thrown out of cultivation by large hedges—how many hares it takes to consume the food of one sheep. It is a common frequent saying among them, that they are obliged to pay three rents—the first to the proprietor, the second to his hedges, and the third to his game. In some districts they have clubbed together to purchase the right of shooting, and have then set about exterminating the hares, which pays better than killing the landlords.

All these works of drainage, construction of buildings for stabulation, erection of steam-engines, &c., involve great outlays. The expense to the proprietor may be estimated at about £8 (\$40) per acre, and that of the farmer £4, (\$20.) On the strong lands it must necessarily be more, but on the light much less. This fruitful outlay accomplished and well executed, of course rents and profits rise beyond their former figure, and that even in places where they have been the least affected by the fall; it also produces an adequate return upon the new capital put into the soil. The land will then produce at least one-third more of alimentary substances. The gross average production, which was equal before to £3 (\$15) per acre, will then be £4, 10s., (\$22 50,) while the average rent will probably rise to 30s., (\$7 50,) and the farmer's profit to 18s. (\$4 00) per acre.

The only question is this, Are proprietors and farmers in a condition to furnish the required capital? The question is one involving no less an amount than four or five hundred millions sterling. For any other country than the United Kingdom such an undertaking would be impossible; for her even it is an arduous one, but only arduous. The nation which, in the course of a quarter of a century, has spent £240,000,000 (\$1,200,000,000) upon railways alone, may well employ twice that amount in renewing its agriculture.

The Government felt the necessity for setting the example. In 1846, at the time when it was thought desirable to bring about lower prices, it allowed itself to depart from its established principle of non-interference with private enterprise, and proposed to the proprietors to lend them £3,000,000 (\$15,000,000) for draining, to be secured on mortgage, redeemable by payment of interest for twenty-two years at the rate of 6½ per cent. per annum—a principle very like our General Land Loan Association (*Société générale de crédit foncier*.) This first loan having succeeded, Government made others, and a great number of proprietors in the three kingdoms have

availed themselves of the advance. Private capital has followed the impulse. The suffering proprietors who were possessed of personal property, or had securities upon which they could borrow, passed through the crisis with credit; but those who were already embarrassed,* struggled sorely. About a tenth of the English proprietors found themselves in this latter position, and for these, economists and agricultural authorities discovered no better remedy than to help them to the sale or division of their real property.

To do this at the present day is a difficult and expensive proceeding, owing to the uncertainty of titles. A class of lawyers live by the examination of titles, and the confusion which there reigns. It was proposed to adopt a system of registration like ours, in order to regulate and facilitate transfers: the ideas promulgated upon this subject are of the radical kind. They go the length of requiring that landed property should be transferred as easily as the funds or other movable property and demand no less than that a book should be opened for the registration of real property, legal extracts from which shall constitute titles, and these to be transferrable by endorsement. Everybody must admit that we are far from holding antiquated ideas upon the fixity of property, and those who propose this reform are not visionaries, but serious writers, and justly respected. The subject is even under the consideration of Government.

For the farmers, leases of twenty-one years are asked, which will allow them to make the necessary advances, with a certainty of reimbursing themselves. At the same time it is proposed to do away with the farms of too limited extent where the tenants have not sufficient capital, and to effect a subdivision of the too large for the same reason. Those farmers who have not sufficient capital drop off like the involved proprietors; such as remain close the ranks as in a combat, and in a short time all will disappear.

All this, no doubt, constitutes an immense revolution. Agriculture changes from a natural, and becomes more and more a manufacturing process; each field will henceforth be a kind of machine, worked in every sense by the hand of man, pierced below by all kinds of canals, some for carrying off water, others for bringing manure, and—who can tell?—perhaps also to convey hot or cold air as required, for effecting the most rapid changes on its surface; the steam-engine sends forth its columns of smoke over the green landscapes celebrated by Thompson. The peculiar charm of the English fields threatens to disappear with the green fields and hedges;

* The crisis alluded to was the repeal of the corn laws.

the feudal character is weakened by the destruction of the game; parks themselves are attacked as depriving the plough of too much space. At the same time, property is undergoing a change; it is being divided, and in part passing into new hands; while the farmer, with long leases, becomes more and more enfranchised from the authority of his landlord.

There is involved in all this more than an agricultural question—the whole body of English society is affected by it. It must not be supposed that the English make no revolutions; on the contrary, they revolutionize to a great extent; they are always at it, but in their own quiet way: thus they attempt only what is possible and really useful; and one may be sure that at the close there will be complete satisfaction without the entire destruction of the past.

Clover as an Improver of Wheat.

GLOUCESTER Co., June 2, 1857.

Editor of the Southern Planter:

Dear Sir—I read with some surprise the opinions of some of our most distinguished farmers, expressed at the Farmers' meeting at the Exchange Hotel in April last, on the use of clover as an improver for wheat.

It has been my earnest endeavour ever since I commenced farming to get the heaviest growth of clover I possibly could to turn under for wheat. I have succeeded occasionally on small fields in having a growth (after cutting off the first crop, which is always the heaviest) that I considered about two tons to the acre, and have never failed to make (what we call) heavy crops of wheat whenever I have had this growth of clover to turn under, say from 28 to 32 bushels to the acre.

I have, however, failed to make half as much wheat on a lot on which the clover was allowed to mature, and upon which the stock were turned, and the land closely grazed before fallowing.

I am the more forcibly struck with the singularity of the custom of turning stock on clover "as soon as they can get a bite," since I read the very able lecture of Mr. Nesbit, published in your May number, which I suppose was alluded to by Mr. Dulany in this meeting. The lands that these gentlemen make 42 bushels of wheat to the acre on, must be rich indeed, and must be kept up to this great state of fertility by the application of other fertilizers than that of *clover seed*, for I can conceive

of no benefit under the system of grazing "as soon as the stock can get a bite" (except from the application of the seed) either to the land or stock, and until the clover is partially matured, I have considered it rather a disadvantage to most kinds of stock to put them on it, certainly of no great advantage to any kind. I have great respect for the opinions of these distinguished gentlemen in any matter relating to agriculture, and would like exceedingly well to be able to imitate them in making 42 bushels of wheat to the acre, but before I follow the example of turning stock on clover "as soon as they can get a bite," I would like to know if this has been their system any length of time, or if until within a few years past they have not given their lands a great deal of vegetable matter by turning under heavy covers of wheat straw, as well as clover.

Mr. D. says for Mr. S. that if he did not turn his cattle on the clover "as soon as they can get a bite, and graze as closely as possible," he would make no wheat.—Does he mean by this, that if he allowed the clover to grow and turned it under, his growth of wheat would be so rank that it would all fall down, or does he mean that he would not have growth enough to make a crop; if the former, I can imagine the clover turned under would be objectionable, but if the latter, I cannot conceive how the growth would be improved by allowing the clover to grow until the cattle could "get a bite." I suppose the former must be the case with them, and that the clover grows so luxuriantly that they are obliged to turn stock on it at this early stage to keep it under. Then I am at a loss to understand how they are benefited by the use of clover; if the clover matures, the stock are benefited, and they make no wheat; if it is kept under by the stock and not allowed to mature, I cannot think the stock are much benefited, but they make fine crops of wheat. What benefit have they derived from the clover. Will some of these gentlemen please tell us?

A word about our wheat crops in this section, and I will occupy no more of your valuable space. The appearance of the crop has varied much during the Spring, at one time, early, looking as if we could not make seed, then improving a little and then falling off again. At this time they

are promising, and but for the army worm we should calculate on rather over an average crop, but we have thousands of them and they have attacked the wheat at an earlier stage than I have ever known them before. What injury they will do I cannot say, but I am afraid very great. They are in the corn too, and many persons are afraid they will have to plant over again.

Very respectfully yours,
ANTI EARLY GRAZING.

[From the Papers of the Nottoway Farmers' Club.]

On Abandoning Tobacco Culture.

The object of an agriculturist in this portion of Virginia, deeply imbued with the spirit of improvement, should be, to combine the greatest degree of amelioration in his soil with such a rate of increasing profits as will, at no very distant day, reward him for his trouble, and, it may be, temporary losses. The common three-field system, accompanied with grazing, has not proved sufficiently restorative in its effects to entitle it to claim a place among the systems of improvement; on the contrary, ample experience has assigned it a place among those of deterioration and impoverishment. The ring-fence system, with a three-field rotation, might be an improving one to the soil, but the pecuniary profits therefrom, if such be the case, are so equivocal or unsatisfactory, as to preclude it from the choice of one anxious to realize the benefits of an enlightened zeal. The fourfield rotation, though more promising, has disadvantages connected with it which would cause it to yield, in my preference, to that of the five-field. To those then, who would adopt an ameliorating course of culture, my recommendation would be that of the five-field plan, accompanied, as it ordinarily is, by the clover fallow for wheat.

But in order to push on the car of agricultural improvement at a pace more commensurate with our wants, and to effect more radical changes in our present modes of cultivation, more ardor and enthusiasm, more patriotic fortitude in risking some temporary or even eventual loss in the cause of common humanity are required among us than at present prevail. We want more bold innovators, like some

whom we could mention, who, placed by fortune in circumstances of comfort and prosperity, and fearless of the risk of losing a few hundred dollars from year to year for the sake of testing the value of theories suggested by enlightened reason, and big with the promise of ultimate profit, shall step into the breach, and earn the gratitude and praise of indebted millions, born and unborn, either by the triumph of successful enterprise, or the explosion of captivating and hazardous errors. Cannot the Nottoway Club furnish some such? There is that important question which probably agitates the minds of several of us, whether it would not be better, on the whole, for us to give up entirely the cultivation of tobacco? How are we to decide it satisfactorily, unless by experiment? And can no one be found among us, (who has much doubt upon the subject,) willing to risk the chances of it may be an inconsiderable loss of income, to test the value of a change so full of promise to agricultural improvement? If any one should want encouragement in making such an important change, let him reflect upon the high prices which he now has to give for articles which he might then raise for his own use or for sale. If tobacco is selling high, are not corn, wheat and oats too? If he should want examples, let him turn to some of the brightest names upon agricultural record, and not very far distant from us, and he will find them. Let us look at the tide water country generally, and ask ourselves the question, why should they dispense with the culture of tobacco and we not? There was a very good reason for it before the South Side Railroad opened its channel for us to market; but now the case is very much altered, and by means of its facilities, Nottoway Court House is brought by computation within a little over two miles to Petersburg. Now just suppose that our plantations were situated within say 10 miles of Petersburg, what, then, might be the probable practice of some or all of us in this matter? But again, suppose a plantation of 300 acres of arable land converted into a farm of 500 acres, upon which no tobacco is made, and let us form some estimate of the comparative profits resulting from them. Take first the plantation cultivated by 10 hands and divide into three fields and 3 tobacco lots.

<i>Plantation—300 acres (in 3 fields and 3 lots.)</i>	
Tobacco, 25 acres, \$40 per acre	\$1000 00
Corn, 75 acres, 300 bush. at 4 barrels per acre all used on plantation.	
Wheat, 100 acres, field and tobacco lot at 10 bushels per acre, allowing \$1 per bushel, and deducting seed 100 bushels, 900 bushels,	900 00
	<hr/>
	1900 00
7½ tons guano at \$50, deducted	375 00
	<hr/>
	\$1525 00
<i>Farm of 500 acres (in 5 fields) cultivated by 10 hands.</i>	
Corn, 100 acres, 5 barrels per acre,	500 bbls.
Farm use,	300
	<hr/>
	200 at \$3
	\$600 00
Wheat, 200 acres, 10 bushels per acre, \$1 per bushel, deducting seed 200 bushels, 1800,	1800 00
	<hr/>
	2400 00
15 tons guano at \$50 deducted,	750 00
	<hr/>
	1650 00
\$120 for rent per year 200 acres at 6 per cent. on \$10. per acre,	120 00
	<hr/>
	1530 00
	<hr/>
	1525 00
	<hr/>
In favor of farm	\$5 00

Respectfully submitted by
GEORGE FITZGERALD,

Permanence of improvement by Guano.

From the Papers of the Nottoway Farmer's Club.

Not being aware until recently that the presiding officer was required to make any other report than an address at the end of his official year, I flattered myself I should be saved the necessity of preparing one, and be exempt from a duty which I knew was incumbent upon every other member; I, therefore, in compliance with that requisition, wish to make a few observations on the effects of Guano; as permanent and as lasting, I think, as any other fertilizer, even including our domestic manures. In the fall of 1853, a corn field, from which was gathered one hundred and eighty three barrels, was seeded in wheat, and to every bushel of wheat about

one hundred and fifty pounds of guano was sowed, which produced a crop of wheat, much more in quantity than I could otherwise have expected. After removing the wheat from the field it was made a pasture and continued so until it was again planted in corn the past year. The cultivation was similar to the crop of 1853, and notwithstanding the great unfavorableness of the season and the extent of injury by the ravages of the chinch-bug which destroyed and seriously injured many acres of the corn, I am satisfied from the fine, luxuriant growth before it met with these disasters, that the field would have made a much larger and better crop than it did when it was in cultivation before. As it was, it made of good merchantable corn a hundred and seventy nine barrels, being only four less, and in a very bad crop year as compared with the crop of 1853, which was favored with abundant rains whenever needed. The difference in the growth of last year's over the one that preceded it three years before, was very marked and perceptible, so much so, that several of my neighbours made the inquiry if the corn then growing and looking so well had not been recently guanoed. It appears very obvious that the product of the field would have been much more abundant had not the vegetation been kept under by pasturage. I have observed the same effects on other land on which guano has been applied when sown in wheat, three years before, and I am inclined to think its action in the improvement of the soil is as durable and permanent as any other manure. Why should it not be so? And why should clover, or any other of the grasses, not grow as luxuriantly after guano as any other means of improvement? If such is the fact, and I see no reason why it should not be, as chemistry informs us that guano returns to the land the phosphates and other constituents which the preceding growth had taken from it, does it not seem clear, that the farmer may congratulate himself on having at his control a powerful and speedy agent in the improvement of his farm and in making it almost at once far more productive.

Powdered charcoal placed around rose-bushes and other flowers, has the effect of adding greatly to the richness of the flowers.

For the Southern Planter.

**A Reply to a Young Farmer's Request
in the June Number of the Planter.**

My flattering prospect for wheat in Nov. last, and again in February last, has in no respect realized the expectations it was calculated to encourage. The indolent and slovenly farmers, together with the land-scratchers and land-killers, are certainly the best off this season, for the simple fact that they have risked nothing in the way of manure and extra labour. What I term the progressive farmers must, for the present, submit to the rejoicing of the foggy land-masters who, although they have no wheat, and no grass, or clover to hide the nakedness of mother earth, with an assumed air of comfort, rejoice that they purchased no guano, no phosphate of lime, no bone dust, no lime, no plaster last fall, but have their money in their pockets, which is for sale at per cent.

The effect of the winter upon the wheat in this section, left it so feeble that the fly, in the early part of the spring, destroyed a large portion of it, and for the last three weeks the fly and joint-worm, and occasionally a helping hand from the chinch bugs, have been making sad havoc of the enfeebled wheat plants. The failure is so general in the Valley that not more wheat can be saved than will be required for seed and bread. If I had not used ten and a half tons of fertilizers, and 400 bushels of compost, viz: lime, plaster, ashes and salt, I, most assuredly, should not have made my seed; and, as it is, may reap one thousand bushels, which is not more than one-fifth of a crop. My experience in subsoiling for wheat and corn is only of a few years duration, and the effect upon my judgment is such as to render me very much dissatisfied whenever necessitated to plow for any crop without subsoiling. Two years since I plowed in June, July, August and September several strips of ground, varying from a quarter to three quarters of an acre; in a crop of 220 acres, the three quarters of an acre ploughed and subsoiled in June was decidedly the best wheat I had, even better than where I used phosphate of lime at the rate of 175 lbs per acre. Those portions subsoiled in August and September produced a very inferior crop; from this result I was induced to

believe that plowing and subsoiling three months previous to seeding, would greatly improve the crop, and especially a dry, cold season, such as we have had in this section the two past years.

As far as I subsoiled for corn last season, I certainly had a better crop than was grown any where in this section. Several applications have been made to know how to make compost, such as I used on my corn last spring. The miller who grinds my meal, says my corn, grown in 1856, is much better than any that comes to the mill. The portion not subsoiled, on which I used the same quantity of compost that I did the subsoiled portion, produced such inferior corn in every respect, that I could but give the subsoiling credit for the difference. Every acre I have plowed the past spring, has been subsoiled deeper and better than ever with a plow of my own invention, which I fancy has advantages and recommendations not possessed by any I have seen. I also use cultivators with teeth made upon the same plan of the subsoil plow, which enables me to make my corn crop with two-thirds, or half the labour I formerly bestowed upon it. By this level cultivation I find I make more corn, and in a great measure guard against the injuries and effects of heavy rains; and my corn ground is generally so mellow that a harrow is sufficient for seeding it with wheat. I will mention, in conclusion, that my letter to the Editor of the Planter last November, was a private letter, not intended on my part to be made public, but simply to let him know that the Valley was trying to produce wheat as well as Eastern Virginia. I cannot understand why it was this letter should have been published, and the receipt of a communication on subsoiling Virginia lands acknowledged and promised a place eighteen months since in the Planter.* If this communication, or any heretofore published in the Planter, should in any respect benefit the cause of agriculture in

* We presumed the letter was intended for publication, and therefore published it. If letters are not marked *private*, or do not contain matter obviously private, we presume ourselves at liberty to publish it in whole or in part. The article referred to on subsoiling we thought had been published. ED. SOUTHERN PLANTER.

Virginia, I should feel much gratified that my public efforts have caused one good result.

This communication, I fear, will not be as encouraging to my young brother farmer as his imagination has, no doubt, induced him to expect; but, as I have stated facts, I hope he will profit by them, and at a future day I shall hear from him through the Planter, with his real name attached to his communication. If his name is an ugly one, and he does not like to see it in print, the Virginia Legislature will, undoubtedly, permit him to change it to *Sam* or any other he may prefer.

ISAAC IRVINE HITE.

White Post P. O., Clarke County, Va.
June 17th, 1857.

Wheat among Ruta Bagas.

MR. EDITOR.—In reading over the January number of the Planter I observed an extract from the Germantown Telegraph, headed "Rye among Ruta Bagas"—and a quære from the Editor of the Planter, "what time was the rye sowed among Ruta Bagas."

Now Sir, though I know nothing about the cultivation of Rye among Ruta Bagas, I have sowed wheat among them, and therefore, speak from experience.

It is my practice, when I wish my turnip patch to remain in the same spot for more than one season, to sow wheat among them, turning in the wheat stubble the ensuing season along with all the manure I can procure, for another crop of wheat and turnips, (I speak of Ruta Bagas, I cultivate none others).

I select some convenient spot, (not convenient, though, to the Shanghais, they are death to turnips), and cast on all the manure I can, which consists for the most part of such as has been collected about the stables since the spring; this manure, unrotted, or partially so, we spread very thickly over the land, and with two good mules, or, if the land be hard, with three, we turn the furrow to the depth of about six inches, a boy the while following and drawing into the open furrow all litter collected by the plough into heaps, and thus preventing its due operation.

This ploughing is done early in July, and the land permitted to remain undis-

turbed until the 1st of August, when we put on a good iron-tooth drag pulled by two mules, and harrow thoroughly. The settling of the earth enables us to perform this operation without disturbing the litter; which, being coarse when ploughed under, has now fermented, in consequence, we presume, of the moisture in the earth;—the gasses arising having been absorbed and fixed in the soil render it fit to receive the seed.

The next step to be taken, is to form a suitable ridge, which is done by throwing together two light furrows with a small plough, and dressing off with the hoe; the land is then ready for the seed, which we plant by hand, (for we have tried the turnip-drill,) on the ridges at intervals of about eight inches, the ridges being two and a half feet apart; we thin out and work usually twice with the hoe, and when about to sow the wheat use the plough in order to get it in.

By this method we raise at the rate of 600 bushels per acre, and find them a great auxiliary in fattening our pork, and feeding sows and shoats during winter, by boiling say five bushels turnips with $\frac{1}{4}$ bushel of corn meal, the whole thoroughly cooked and reduced to a mush. The tops we use for the same purpose, beginning to cut them off the turnips while in the patch about the 1st October, and apprehend no injury to the root, provided the bud is not injured in cutting; two small boys are employed in making swill for the hogs and much corn saved thereby.

You will perceive, that by this method, by the time we wish to sow the wheat, the turnips have for the most part been deprived of their tops, and thus we are enabled to put in the wheat with more facility, which is done by running a small plough twice in each alley and throwing the furrow up to the turnips; thus we have two crops on the same land at once and obtain a good yield from each.

On one occasion while sowing wheat among my turnips, an *old farmer* passed, and with much surprise, enquired what I was doing, sowing wheat was the reply; sowing wheat said he? do you expect to make any? I have made, and expect to make again was the answer. He went his way, thinking no doubt there was something new under the sun.

Gloucester, Jan. 1857.

Good vs. Bad Breed of Hogs.

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

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

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

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

Considering the number of hogs that are raised annually in the United States and especially as so many depend almost exclusively on the hog crop for the money they need, is it not wonderful that so few persons take pains to obtain the best varieties. Suppose you have to give \$20 or even \$50 for a pair of pigs to begin with. Is this an insufferable obstacle? I answer no. Doubtless you may procure a good breed for less money, but let us look at the practical proof, on the score of economy and see how long it would take to pay at these figures. Suppose you

have 100 hogs of the alligator or land pike breed which you sell at \$5 per hundred. 150 lbs at twelve months old will be about all you can make them weigh. Here you have \$7 50.

Again, take 100 hogs of a good breed which will weigh at the same age and with less feed 250 lbs. Here you have \$12 50, making a clear profit of \$5, without taking into account the save in feeding, which would no doubt swell the profits to a much larger amount. A hog that has to be kept more than one winter before fattening will eat his head off in all cases. Hence the most profitable kinds will be found in those hogs which attain the greatest weight (without extra attention) in from 12 to 18 months.

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

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

—♦♦♦—
From the Ohio Farmer.

The Disease amongst Hogs.

EDITOR OHIO FARMER.—I send you the following notice of an epizootic which has been prevailing amongst the hogs in this section of the country. A portion of this notice was published in the *Cincinnati Gazette*, but as your paper is particularly devoted to the agricultural interests of our community, I send you a more minute description of this disease, and also some experiments which were not published in that paper.

That a disease is extensively prevailing among some of our domestic animals, is a fact worthy of attention and record, and the loss to our farming community, in a pecuniary point of view, makes this a subject worthy of investigation. From the large number of hogs that have died, and from the fact that epizootics frequently appear to be produced from the same general causes, which give rise to epidemics, and from the fact also that diseases of inferior animals have not received the attention of physicians which they deserve, we

have investigated this malady with much interest, and the facts elicited, we think, are curious and interesting.

I have received information that this disease has prevailed in Ohio, Switzerland, Ripley and Dearborn counties, Indiana, also along the valley of the Miami, in Montgomery, Butler, and Hamilton counties, Ohio; also in Clinton county, and very severely at New Richmond. It has also prevailed in Kenton, Boone and Gallatin counties, Kentucky, and large numbers have died in the vicinity at Warsaw. We may form some idea of the number of hogs that have died from the losses at the following places:—Mr. Daniel Armel informs me that he has lost at Ingraham's distillery, from the 1st of August up to the 24th of October, 1,285. Mr. J. C. Jenkins writes from Petersburg, Ky., that he has lost since the 18th of October, 2,576, at the distillery in that town; Mr. Pate has lost 500 at Rising Sun; Mr. Slumer, 500 at Covington; Messrs. T. & J. W. Gaff, of Aurora, have lost since the 20th of June, 4,546; Mr. J. Bryns writes that at New Richmond, since the disease made its appearance, 10,435 have died, and Mr. Backman, of Aurora, has furnished me information of over 6,000 that have died at other places.

When, in addition to these numbers, we take into consideration the large numbers that have died along the valley of the Miami; also in the neighborhood of Warsaw and East Bend, Ky., and on farms over the country—some of the farmers having lost nearly their whole stock—I think we may safely estimate the number that have died within one hundred miles of Cincinnati, since the disease made its appearance, at not less than 60,000. The value of these would be \$300,000, averaging five dollars each, and when fattened, after deducting ten per cent. for the usual loss, would probably have been worth over \$650,000.

The disease made its appearance at Aurora about the 19th of June, and still continues to prevail in Dearborn county. The first symptoms that can generally be discovered, the hog appears weak, his head droops, and frequently in a few hours after these symptoms, diarrhœa commences, which has caused the disease to receive the name of "Hog Cholera."

When the hogs were fed upon slop the

discharges were generally yellow, but if fed upon corn and running at large, they were dark colored. There was frequently vomiting and sometimes bloody discharges with apparent tenesmus resembling dysentery; in other cases there was cough and difficult breathing, showing the lungs to be principally affected. Sometimes there was inflammation of the throat, and the hog when caught could make no noise. In these cases, the tongue was generally very much swollen and inflamed; sometimes one or both legs were inflamed and swollen, and the inflammation extended along the sides, or belly, of a deep red color, almost precisely similar to a phlegmonous erysipelas. Some had large sores on their legs resembling carbuncles, others had gangrenous sores on their sides or flanks from three to six inches in diameter; some appeared delirious, others blind. These symptoms were combined in almost every possible variety; death took place in from one to five days. Out of a pen containing one hundred hogs fed upon slop, thirty-three generally died, and it required about eight weeks for the remainder to recover from the disease.

On opening the bodies, I found the appearances as various as the symptoms were different; I examined forty-seven hogs that had died of this disease, and scarcely found two that presented precisely the same appearance. In every instance there was evidence of a diffusive form of inflammation that was not confined to any particular tissue. The skin was generally of a purple appearance, and in cutting through those parts which were most inflamed, the cellular tissue was infiltrated with serum, and the skin was swollen. In nearly every case, the mucuous membrane of the stomach was more or less inflamed, presenting a bright red appearance, tumified, and generally softened. Sometimes there was an effusion of blood in the stomach, and this organ was frequently found distended with food. In all cases where there had been diarrhœa or dysentery, the mucuous membrane of the large or small bowels presented evidence of inflammation. Sometimes the bladder was inflamed, and occasionally contained an effusion of blood. The peritoneum, in eighteen cases, presented marks of inflammation—there was effusion of bloody serum—and adhesions between the intes-

tines and sides of the body. In three cases there was an effusion of blood into the peritoneal cavity. To give a detailed description of all the appearances presented, would extend our notice of this disease to a great length, and could afford interest only to a medical reader. Suffice it to say, that I found the liver, the lungs, the pleura, the peritoneum, the mucous membrane of the bronchia, the trachea, and larynx, all at different times bearing marks of inflammation; frequently one or both lungs were engorged or hepatized, and adhering to the ribs. The lymphatic glands were generally inflamed or greatly congested, resembling lumps of coagulated blood.

These are some of the facts revealed by our dissections, which show this disease to produce a diffusive form of inflammation, which attacks the skin, the cellular, serous, the mucous, and glandular tissues; it spreads along these tissues very similar to the manner in which an erysipelas spreads along the tissues in the human system—and, in some respects, resembles this disease.

When this malady made its appearance at Aurora, it was supposed by many to be produced from the slop that the hogs were fed on at the distillery; and we had many opinions, and but few facts, to explain its cause. We suggested to Mr. J. W. Gaff, one of the owners of the distillery, that a series of experiments be tried, to prove how far these opinions were true, and to obtain more positive knowledge of this disease. He readily agreed to our proposition, and by the aid of Mr. J. Backman, it has been most clearly proved that so far from the slop producing the disease, this malady is not so severe amongst hogs fed upon slop as those fed upon corn. We have also proven the disease to be contagious. We have also ascertained the about latest period of the contagion to be thirteen days. We have also proved that pens in which diseased hogs have been, will retain the infection, in warm weather, for more than four days, and probably from ten to twenty, which is a fact of importance to those who have had the disease in their pens, and are buying stock hogs; and we have also ascertained the fact, that hogs have this disease but once; those that recover lose their susceptibility to a second attack.

We have not seen a single instance of a hog having this malady a second time. The hogs that have been in the pens over six months, have not generally been attacked with the disease. We account for this by considering that the disease prevails more or less in the pens every year, and that these hogs have been under its influence; but this year, from some predisposing cause, this malady has assumed a more malignant form and spread over the country. Some of our experiments were as follows:—Four young and healthy hogs were put into a pen in which four days previous diseased hogs had been; these were fed on corn and water; on the fourteenth day they were all unwell and one died, and in five days they were all dead. Ninety hogs that had been exposed to the disease were put into a pen by themselves and fed on corn and water, and sixty died.

One hundred stock hogs were put into a pen by themselves and fed on corn and water, and for thirty days they continued well. They were then put into the pens with diseased hogs, and in fourteen days after, the disease made its appearance amongst them. We inoculated eight hogs with blood from the diseased parts of hogs that had died of this disease; in fourteen days they were all unwell and one died, and all died within a week of each other, with the exception of one, which recovered. Although this disease is so very infectuous to the hogs, I feel confident it cannot be communicated to the human system. I several times wounded myself while examining the diseased hogs, but the wounds readily healed, and there was no unusual inflammation, and the men that were constantly at work amongst these hogs, were not the least affected by this disease.

In the treatment of this disease, it must be obvious, more can be done by prevention than medicine. The diseased hogs should be separated from the healthy, and when this disease is prevailing in a neighborhood, farmers should keep their hogs from running at large. We have been able to trace this disease most clearly, as it spread by contagion from farm to farm. Although this malady must occasionally have a spontaneous origin, yet when once produced, it spreads rapidly by contagion. Those who are feeding large numbers of

hogs, if the disease has not been amongst them, might prevent its introduction by having a quarantine pen, in which the stock hogs should be kept fourteen or fifteen days; by that time it would be known whether they were diseased. Mr. Watts, who is feeding a large number of hogs at Patriot, informs me that he filled his pens in June, and has bought no hogs since; this was before the disease made its appearance, and he has not lost a hog with this disease. The introduction of this disease into the pens at Aurora, can be traced, most clearly, to a lot of hogs brought from Laughery, in Ripley county. These hogs had the disease which had spread to hogs on adjoining farms before they were brought to Aurora, and when brought to the pens some of these hogs died the next day, and they continued sick, and some died daily, until the disease was communicated from pen to pen.

To destroy the infection in a pen, it should be well washed with a strong solution of sulphate of iron, nitrate of lead, or sprinkled with chloride of lime. Hogs that have this disease should be fed upon slop. The average number of hogs that die in the pens, and are fed upon slop, is from 33 to 55 per cent.; the average number fed upon corn, that die, is from 60 to 75 per cent. The mucous membrane of the stomach, as we have mentioned, is nearly always inflamed, and the partially masticated corn, as I have found in the stomach, would be much more likely to increase the inflammation than the slop.

Those who wish to try the medicine, might find laudanum and linseed oil beneficial, when there is diarrhœa or dysentery. Some of our farmers speak highly of a solution of soap, in which sulphur is mixed.

When the lungs are diseased, bleeding will probably be beneficial.

Mr. Rann, residing near Laughery, in Ripley county, informs me that he lost a large number of hogs with this disease last fall. He drove the remainder of his stock to Laughery creek, made them swim about in the water, fed them in the water, and that, after resorting to this treatment, the sick hogs rapidly recovered, and he lost no more.

We consider this disease has not its exact representation amongst the diseases to which the human system is subject, and

consequently we know of no appropriate name to call it. From the inflammation of the lymphatic glands; the formation of sores, like carbuncles, and its contagious character, it in some respects resembles the plague. and I know of no better name to call it than the plague amongst the hogs.

GEORGE SUTTON.

AURORA, Indiana.

The Wool-Clip of 1857.

Notwithstanding the reduction of the tariff on coarse wools, which is now taking effect, the prevalent opinion among the commercial circles appears to be that the range of prices for fine and fair staple wool will not fall from the prices of 1856. We trust this will be so, though we are not sufficiently conversant of the cause, nor of the course which the trade is taking, to judge for ourselves. Woolen manufactures have been depressed, and much apparent relief has been felt, or anticipated, in the free opening of all markets, and the benefits of free competition in the purchase of all but the finest wools. This feeling will doubtless spur their activity and induce them to enter more largely into the manufacture of fine broadcloths, and thus become heavier purchasers of native wools. We append a letter upon the subject from one of the largest New England manufacturers:

Boston, May 27, 1857.

"Gentlemen:—Your favor of the 16th duly came to hand, and I beg briefly to reply to your questions. The business of manufacturing wool had proved so disastrous under the tariff of 1846, that not only sheep husbandry in this country had declined, but the importation of raw wool from an average of 22,000,000 pounds for many years had fallen to 14,000,000 pounds a year.

"The tariff act of this year gives to the American manufacturer the market for supplying all the fabrics made of wool except fine broadcloths, consequently a steady market for the wools of our country, and an improving and increasing sheep husbandry. It will require at least one year for the manufacturers to look about and regain the confidence of capitalists and men of substance to enable them to act. Few persons are aware how sadly depressed this important branch of industry is in this country, and how little confidence prevails as to our ability to compete with the cheap laborers and skill of Europeans. I have no doubt that within five years the duty on wool of all kinds will be abrogated at the request of the mass of the wool-growers in this country. Fine German wools are essential in the manufacture of fine broadcloths; the duty

on both is 24 per cent.—on wools duty assessed at a fair valuation, on broadcloths at two-thirds the value.

“The importation of the latter is engrossed entirely by foreigners, and such men as Wilson G. Hunt and J. M. Beebee, driven from the field.

“The importations of wool costing under 20 cents are considerable. At this port there have arrived and are on the way from the Mediterranean, 4,000,000 pounds; from Buenos Ayres, 1,000,000, and from Valpariso, 2,000,000. My impression is, there will be from 2,000,000 to 3,000,000 in addition by the 1st of July. I have not the statistics of the imports into New York, but they are considerable.

“This letter is longer than I intended, and I remain your obedient servant,

SAM'L LAWRENCE.

“Messrs. G. C. Colt & Sons, Buffalo, N. Y.”



THE SOUTHERN PLANTER.

RICHMOND, VIRGINIA.

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Recommendations to Overseers.

Somehow or other July has come to be the month in which overseers are engaged, or get or give notice to quit at the end of the year. This is altogether wrong for several reasons; but as it is established we presume we cannot reform it, and shall not try. But we have a word to say in the matter of recommendations. It is a subject not without difficulties. This world is so given to lying, as the old song says, that if a man tells the whole truth, people always suspect that there is something still concealed; and so they afford the argument, but not the justification, to those who contend that as the whole truth conveys as false an impression as a falsehood, that therefore you may suppress a part of the truth. The man who tells all about the horse he wishes to sell, is sure to depreciate him in the market; and the man who tells all the faults of his overseer, is very apt to cut him out of business. He may be a capital manager, but with faults incident to his rearing, his calling, or to human nature generally; and if those faults are frankly stated, the suspicions of the farmer will exaggerate their degree or extent; thus candour may discredit a very worthy man. With this obstacle to a proper recommendation we can sympathize. But we cannot appreciate the other reasons that some persons have, which may be summed up in the common phrase of getting rid of a bad manager on the best terms possible from anticipation of carelessness, neglect, improper treatment of negroes and other harm that may result from maladministration on the part of a man who expects to leave your employment.

It is obvious how this mode of recommendation, so common as to be almost universal, operates to the injury of the parties by rendering it a matter of no interest to the overseer how he manages, as he is sure of “a character” when he leaves a place. The interest of the good overseers requires that they should discountenance the practice as injurious to them; the

interest of the farmer, that he should not do what must lower the grade of the class whose aid he seeks.

We have known some persons to argue that a recommendation of a man should contain an enumeration of all his good qualities, and be silent as to his defects. But this is deception, unless the silence as to his defects is expressly stated; and we do not think any man has a moral right to frame a recommendation in that way. But if it be stated that you are silent as to defects, except very gross ones, which should be mentioned, it is perhaps as good a plan as any. Another, which we have known to be adopted, is to resolve never either to give or demand a recommendation, and to have that understood.

Many persons speak of the necessity of frequently changing an overseer as a disadvantage. We doubt it. A man who has an agent that fully comprehends his wants and can carry out his plans, is apt to become careless in the administration of his own affairs; and the agent, not because he is an overseer, but because he is a *man*, will be apt to presume upon the carelessness of his employer. It is then to the interest of both parties that there should be an occasional change. It keeps the farmer up to his business and the overseer up to the bit.

It seems to be thought that injury will result from discharging an overseer during the crop season. We doubt that too. If it were more the custom it would not be so often necessary; and if a bargain to that effect were made there would be no hardship in it.

It might raise the wages of good overseers, but there is no objection to that. It would reduce the wages of inferior managers, and that is desirable.

We would be very glad to see several changes in this whole matter, changes which would result not only to the benefit of the employers, but also to the overseers themselves, who, when really good, are most useful members of society. We know several men well, who are or have been overseers, that are as much respected where they are known as the "solid men of Boston." We would like to see that number increased, as there is great need of them; and we believe nothing will conduce more towards this than an abolition of the pernicious practice of indiscriminate recommendations.

Fine Wheat.

We inspected yesterday a sample of very fine wheat which was grown on the farm of Mr. Robert Edmond, on his beautiful Chickahominy estate, near this city, which farm, by the way, for its general good management, but especially for the completeness of its buildings, we would like to exhibit to every farmer in Virginia.

The heads of this wheat are remarkably well filled, having, in some cases, five grains to the "Mesh," and an average of some eighty or ninety to the head. The wheat, a mulatto—between red and white—grows with a strong, powerful straw, and ripens with the Poland. If it turns out well, we shall hear from it again.

The Prospect for Wheat in Virginia.

It is very hard to say from what we have heard whether the wheat crop of this year will reach the amount of the last, which was below the average. Winter killing in many places, chinch bug in others, army worm in others, joint worm and fly in others, and a late harvest generally, which, even where it does not cause rust, will dry up the wheat before it is fully matured, one or more of these disasters nearly every where operate a diminution of the crop. On the other hand, the season for filling and ripening, except in its lateness, has been uncommonly fine, and the good lands, except where affected as above, promise unusually well.

In the Valley we hear that the crop is miserable; in upper Piedmont, from Loudoun to Nelson counties, generally bad; in lower Piedmont—that is from the head of tide to the tier of mountain counties, very unequal, but generally inferior; on Tidewater the good lands would have very superior crops but for the army worm, and the inferior lands are very badly killed, to an estimate, in some cases, of four fifths of the crop. The Pamunkey and Mattaponi counties—Caroline, the upper part of Hanover, and King & Queen and King William are badly hurt with fly, joint worm and winter kill. Powhatan and that region on the Southside are said to have joint worm to a serious extent. In Goochland and Fluvanna, as far as we learn, the crops are good. In Brunswick and Dinwiddie they are very good. On the whole we think we are authorized to say that the crop

will not exceed what was made last year, and may possibly fall below it. But we wish it distinctly understood that we do not write with a view to force the market up. We give only such facts as we gather, and every one must make his own inferences.

Good Asparagus.

Mr. H. J. Smith, the owner of Kossuth, and of a fine market garden near this city, has sent us two bunches of asparagus that was really good. It was tender to the bottom, and half a dozen stalks would be about as much as one would want. The largest stalks he had, and which he means to preserve for exhibition at the State Fair, were of the following dimensions:

1 stalk	13½ inches long,	4¾ inches in circum-
		ference—weight 8½ oz.
4 stalks,	including the above,	weight 26¾ oz.
9 “ “ “ “	“ “ “ “	“ 54½ oz.

When any other gardener beats this we shall put Mr. Smith up a notch or two higher.

Kossuth.

It will be seen in our advertising columns that this fine stallion, one of the best trotting horses in the world, and probably the stoutest, for his speed, of any in the United States, will make a fall season to a limited number of mares at his owner's stable near Richmond.

Dr. Fitch's Report on the Insects of New York.

We are very much indebted to the very able and courteous Secretary of the New York State Agricultural Society, Mr. B. P. Johnson, for a copy of the above work, which includes Dr. Fitch's first and second report on the noxious, beneficial and other insects of the State of New York. We have perused enough of it to satisfy us of its value as a contribution to the vast and important science of entomology.

The report is the result of an appropriation from the Legislature of the State. How long before Virginia, with her large and engrossing family of federal relations—the most of whom, by the way, seem not to reciprocate her attentions, will find time to undertake a similar enterprise.

By the way, Dr. Fitch seems to think, (see p. 296,) that “commonly it is only a narrow strip on one side of a field which is seriously infested

with chinch bug. In this he is mistaken. They fly in groups all over a field, and alight in spots, from which they extend in every direction. We have known them, in our own experience, to come out of a piece of wheat grown on a ridge in a piece of low ground, attack the adjoining corn, and work into it twenty feet until they came to moist, but not wet land—the lowest and richest part of the low grounds penetrated by a small tide-ditch,—and then to rise and fly up across the intervening corn to the top of a hill some three hundred yards off, from which they spread in spots over all the adjoining upland.

Pissant vs. Chinch Bug.

The vilest of all insects, and most destructive of all pests to wheat, oats, corn and grass, seems likely to meet its match at last. We have heard from two distinct sources, that the ants have been observed, in large numbers, feeding greedily on the chinch bugs. They seem to be generally disappearing; from what cause we know not, except in the particular cases we refer to. We have not had the pleasure of witnessing the execution of any of them by the ants, but we have no doubt of the facts detailed to us. The season has been a good one up to this time, but not wet enough to have exterminated them, as they seem to have been from some neighborhoods, where very recently they existed in such numbers that a person riding along the road had to keep his mouth shut to prevent them from flying down his throat.

The Army Worm.

This destructive worm, whose history and character, extracted from the Patent Office Report for the year 1855, will be found below, has appeared in unusual force, and over a very wide extent, within the last two or three weeks in certain sections of the State. On the lower James River and the contiguous counties, in lower York River counties, and in the Northern Neck it has been particularly destructive. In the neighbourhood of Richmond also, and of Hanover Court House, it has done or is doing a good deal of damage. A friend from Westmoreland gives a sad account of its ravages in that region, and asks for a remedy.

We proceed to give one that we found completely effectual when practicable, and which

it occurs to us we have stated before. It is nothing more than the employment of hogs to exterminate them. In the year 1844 about the last of May they appeared in countless myriads on the wheat field of Col. Thos. J. Randolph of Edge Hill in the county of Albemarle. Their course was pretty nearly due North, and they stripped the wheat of blades through the field. North of that field, and adjoining it, we had a pasture in which were many hogs and a few turkeys. As the army worm entered the field they were eagerly devoured by the hogs, and the turkeys got what escaped the hogs. Both seemed to prefer them to any other food, and we do not think a single caterpillar crossed the field. The wheat crop though they had stripped it of leaves was a good one. They returned no more in our time, a period of some ten years. We have heard that the same plan has been partially tried in Henrico or Charles City and with success as far as it went.

Another plan we have heard of has been tried by Mr. Blake, the steward of Mr. William Allen's Curles' Neck property. He dug a ditch along the line of the wheat field, ploughing it out to about a foot or somewhat more in depth and shovelling out the earth. The ditch was about a foot wide at *bottom*, and nine inches at the top, thus reversing the form of an ordinary ditch, which is sloped from the top to the bottom, whereas this was sloped from the bottom to the top. But this reversed slope was on the side next the corn or oats, the side next the wheat being perpendicular. In this bottom, at intervals of about twenty feet were pockets, sloped on all four sides from the bottom to the top, and of such dimensions as to admit an ordinary weeding hoe. Into this ditch the worms fell as they were attempting to cross and when collected in it and the pockets in sufficient numbers they were mashed by the hoes. In this way Mr. Blake says he killed them all, and has saved his corn crop, and perhaps his oats. The work took him about a week.

Our friend, Mr. Wm. C. Tompkins, reports that he saved his crop of wheat on his farm in Chesterfield by sowing corn in a wide belt all around the wheat on which the worm fed until it grew to a chrysalis state. This may do very well when we know they are coming, but cannot, we should think, be of any general utility.

Insects, particularly ants, as will be seen, eat a good many of them, and birds get numbers of them. Every man who was fool enough to shoot a crow has lost a friend in this emergency that would have been worth money to him.

As soon as the worm reaches its full size it either dies or passes into the chrysalis or pupa state, and they will all most probably have reached this condition by or before the last of June: and it is probable that they will not return again for some years.

The extent of their depredations cannot, of course, be known now; but we apprehend that it will be considerable, though not as heavy as many persons seem to anticipate. At Shirley, Westover, and Curle's Neck, where they abounded to such extent that we are informed they had to be swept out of the houses, in some cases by persons constantly stationed at the doors with brooms and provided with hot water to scald them, the loss to the wheat is estimated at from a fourth to a third of the crop. As usual the poor crops have suffered most; and in those cases the damage may be greater.

The Grass Caterpillar.

(*Locusta?*)

Another insect, (Pl. VI. fig. 6,) which is often found in cotton fields, and mistaken for the real cotton-caterpillar, is commonly known by the trivial name of the "grass worm," or "caterpillar," owing to the circumstance of its most natural food consisting of grass and weeds, although, when pressed by hunger, it will sometimes eat the leaf of the cotton-plant.

These caterpillars were very numerous in the vicinity of Columbus, in Georgia, about the end of September and the beginning of October, 1854. They devoured grass, young grain, and almost every green thing which came in their path. Instances have been known in which, urged as they were by necessity and starvation, they actually devoured stacks of fodder that were stored away for winter consumption. Deep ditches cut in the earth to stop them were immediately filled up by the multitudes which fell in and perished, while eager millions still rushed over the trembling and half-living bridge, formed by the bodies of their late com-

panions, bent on their missions of destruction and devastation.

These caterpillars do no essential injury to the cotton, especially when weeds abound, as they content themselves with the grass growing between the rows; and, unless very numerous, they cannot be classed among those doing much harm to the general crop, and are mentioned here principally as having been so frequently mistaken for the real cotton-caterpillar. When pressed by necessity, however, as has already been stated, they will feed upon cotton leaves. I raised about thirty of them upon this food alone, merely as an experiment, and they grew and perfected their transformations, although appearing to prefer a grass diet if it could be obtained. When about to change, they formed cocoons of silk under stones or in the ground near the surface, interwoven with particles of earth, and came out perfect moths from the 24th to the 30th of October; and, as these specimens were kept in a room without artificial heat, I conjectured that those in the open fields would appear about the same time.

At a plantation in the vicinity of Columbus, where the caterpillars were very numerous, and had already devoured all the grass on one side of a field, which was divided into two equal parts by a broad and sandy carriage road passing through the centre of it, the grass on the other side having been untouched, it was interesting to observe the operations of numerous colonies of ants that had formed their holes or nests in the road, and were lying in wait for any unfortunate grass-worm, the natural desire of which for a fresh supply of food, should tempt it to cross this dangerous path. First, one ant more vigilant than the rest would rush to the attack; then another, and another, until the poor caterpillar, entirely covered by its pigmy foes, and completely exhausted in strength by its unavailing efforts to escape, was finally obliged to succumb to superior numbers and die as quietly as possible, when the carcass was immediately carried off by the captors to their nests, or, when too heavy to be carried away at once, they fed upon it as it lay in the road. This warfare was carried on every day as long as the grass worms prevailed, and no doubt their numbers

were diminished in this way to a considerable extent.

The grass-caterpillars, when in confinement, very often kill and devour each other; and, when one is maimed in the least, it stands a very poor chance for its life. Several intelligent planters state that when the grass and weeds are entirely devoured, and no other vegetable food is to be found, they will attack each other and feed upon the still living and writhing bodies of their former companions. One grass-caterpillar, which was kept in confinement, although furnished with an abundance of green food, actually appeared to prefer to feed upon other caterpillars, no matter of what kind, so long as their bodies were not defended by long, bristling hairs, or spines.

The grass-caterpillar is from an inch and a half to an inch and three-quarters in length. A longitudinal light-brownish line runs down the centre, and two yellow lines along each side of the back, which is somewhat veined with black lines, and is of a dark color, marked with black spots, from each of which grows a short bristle, or hair. Below these yellow stripes, the sides are of a dark color, almost black; beneath this, extends a light-colored line, in which the spiracles are placed; the lower part of the body is of a dirty green, spotted with black; the head is black, marked with two lines of a yellowish color, forming an angle on the top; the body is somewhat hairy. This caterpillar has six pectoral, eight ventral, and two anal feet.

The above description applies only to the brightest-colored specimens of the grass-worm, as they vary much in color and markings, some of them being almost black, and showing indiscriminately their stripes. The chrysalis is brownish black, and is formed in a cocoon of silk under the ground, the sand and small pebbles being so interwoven with it as to cause the whole cocoon to appear like an ovoid ball of earth; but it is never found webbed up in leaves, as is the case with the true cotton-caterpillar, already described. The moth measures about an inch and one-fifth across the wings when they are expanded; the upper wings are grey, slightly clouded with a darker color, and a lighter spot or ring is faintly seen in the centre; the under-wings are of a yellowish-white,

shaded with grey along the margin near the upper wings.

Specimens of these caterpillars were brought to me when at Savannah, in Georgia, and they were suspected to have injured the rice in that vicinity in the month of June. Colonel Whitner, of Tallahassee, in his interesting communication to this Office, speaks of the grass-caterpillar as having stripped fields of grass, in 1845, and also as attacking the corn, sugar-cane and upland rice. It has likewise been said that an insect similar, if not identical with the grass-caterpillar, destroys the leaves of the sweet potato. Thus it appears to be almost omnivorous, and not choice in its selection of food, like the true cotton-caterpillar, which is believed to confine itself to the cotton-plant alone.

Agricultural Report.

Reform in Inspections of Tobacco.

The merchants in Richmond, engaged in the sale of Tobacco, have held a meeting, and stated certain grievances and asked certain reforms in the Inspections of Tobacco, as will be seen in the proceedings below.

They have given us an additional argument against the whole law of Inspections, which we would use if we thought it worth while to take up again a subject which we have once treated at considerable length. But as we had the pleasure of ascertaining on that occasion that our remarks were received with considerable indifference, we do not feel it our duty to renew them. As far as we can, however, we shall cheerfully co-operate with the merchants in this matter; but we cannot help thinking, that if they had held this meeting some time ago, and had then co-operated with the Executive Committee of the Virginia State Agricultural Society in the reform they proposed, that the whole Inspections of Virginia, which are a mere mockery and a nuisance, so far, we mean, as inspection of *quality* is concerned, might, by this time, have been on a better footing, and some progress have been made towards a complete reform.

Tobacco Inspections and Sales—Meeting of Merchants.

A meeting of the Commission Merchants for the sale of Tobacco, was held on Saturday afternoon, 6th inst., in the office recently occupied by Preston & Enders, and was organized

by calling T. James Deane to the chair, and appointing Henry C. Watkins, Secretary. The chair having explained the object of the meeting, Mr. B. M. Jones offered the following resolution, which was adopted, viz:

Resolved, That the Chairman appoint a Committee of five Commission Merchants, to report to an adjourned meeting, to be held in this room on Saturday, the 13th inst., at 4 o'clock, P. M., as to the best manner of removing the grievances under which the planting interest is now labouring, in regard to the manner of storing, inspecting, and selling Tobacco—whereupon the chair announced the following gentlemen as said Committee, viz: C. R. Barksdale, D. P. Gooch, W. K. Martin, R. H. Dibrell, J. M. Sheppard, Jr., and, on motion, the Chairman was added; and then, on motion, the meeting adjourned to meet again at 4 o'clock, on the 13th inst.

At an adjourned meeting of the Commission Merchants of the city of Richmond, on the 13th day of June, 1857, Mr. Deane took the chair, and Mr. Watkins being absent, W. H. Maddux was elected Secretary:

It was then moved and carried, "That the Inspectors at the several Warehouses be invited to attend and participate in the proceedings;" and Col. McDearmon of Shuckoe Warehouse having appeared, the Committee appointed at a previous meeting for the purpose of investigating certain irregularities, on the part of the Tobacco Inspectors of the city of Richmond, growing out of the manner in which business has been conducted at the Warehouses under their charge, through their Chairman, Col. Barksdale, submitted the following report, charges, and resolutions, which were adopted:

Your Committee deprecate much the necessity which impels them as Commission Merchants to set forth any charges for the dereliction of duty against these public officers, but in justice to themselves and the large planting interest represented, by the members of this meeting, they feel called upon to state fairly and candidly the grievances which afflict the Tobacco trade of the city, hoping thereby to lead to the adoption of better regulations, as it regards receiving and inspecting Tobacco. And here your Committee would take especial pains to correct the impression on the minds of some, that this meeting, by its action, proposes to throw any obstacle whatever in the way of planters, who may choose to sell their produce through the agency of the Inspectors. They indignantly deny such a charge; but they do affirm, that when Inspectors, by their acts, become Commission Merchants, by soliciting consignments, and making advances on same, they do violate the spirit, if not the letter, of the Inspection laws of the State; that the Inspector was appointed to stand between the buyer and seller, and to de-

termine the character of the article inspected. How, then, can he be an impartial arbiter; when allowed to receive the vendor of the same article he inspects? Your Committee are clearly of opinion, that if the law were fairly construed, it would confer no such privilege, and the practice, in our opinion, should be discontinued.

And farther, the Commission Merchant is taxed a per centum upon every hogshead of Tobacco he sells, and the State derives no inconsiderable revenue from this source; but the Inspector, who is a Commission Merchant in fact, by virtue of his office, is freed from such taxation, and may be termed the *privileged Commission Merchant*. Hence they believe the evils of which they complain, and set forth in this report, arise chiefly from the clashing of interests of Inspectors with those of Commission Merchants; and they believe a different state of things would soon be experienced if those officers were confined alone to inspecting, and not selling Tobacco: they therefore charge,

1st. That, in their opinion, the Warehouses, under proper management, might have been made to contain one-half more Tobacco than is now stored in them; if "rydering" had been commenced a month earlier, which would have prevented the necessity of storing a large quantity of Tobacco in private Warehouses, at an additional cost of one dollar to one dollar and twenty-five cents per hogshead.

2d. They charge that the Inspectors receive and store Tobacco consigned to themselves, and at the same time refuse to receive Tobacco sent to Commission Merchants, thereby compelling them to store Tobacco in private Warehouses at an additional expense, which discrimination they have no right under the law to make. This charge can be substantiated by the statements of Messrs. R. H. Dibrell, J. B. Duruy and Walter Martin.

3d. They charge that in "listing" Tobacco at Shockoe Warehouse, the Inspectors have time and again, preferred the Tobacco sent to them for sale over that controlled by Commission Merchants, and this is done by blank lines at the head of the list book, for their own exclusive use, giving their Tobacco priority over Tobacco listed by Commission Merchants prior to theirs, which is a violation of a known and long standing custom in all the Warehouses in this city. This charge can be supported by Messrs. Fred. W. Hobson and D. H. Smith.

Be it therefore, Resolved,

1st. That the Inspectors be requested not to list any Tobacco sent to them for sale, nor to allow any Commission Merchant, or any one selling Tobacco, to list any Tobacco not in the Warehouse, or in the city. This resolution to take effect from the 1st day of August, 1857.

2d. Resolved, That a Committee of five be appointed to select a room, and have it fitted

up, to be used as a "Sales Room," or Exchange, for the public and private sale of Tobacco, and any other produce.

3d. Resolved, That a Committee of five be appointed to wait on his Excellency, the Governor of Virginia, and request him to authorize the Inspectors at the several public Warehouses to inspect all the Tobacco stored at private Warehouses; provided the laws of the State permit him to do so.

Mr. S. R. Eggleston then moved, and the meeting adopted the following resolution:

Resolved, That we, Commission Merchants of the city of Richmond, will write to our patrons throughout the State, and urge upon them the importance of holding county meetings to instruct their delegates to the next General Assembly, to make such alterations in our "Inspection Laws," as are best calculated to remedy the evils complained of; and that a Committee of five be appointed to draft a petition to the "Farmers' Assembly," at its next meeting, setting forth such reforms as they may deem necessary, and ask its co-operation in the effort to accomplish our object.

A motion was made, and carried unanimously, that the thanks of the meeting be tendered to Col. Adkins for the use of his rooms.

A motion was made and carried, ordering the Secretary to prepare a copy of the proceedings of the meeting for publication, and requesting the editors of the city to give it one or more insertions in their respective papers. Whereupon, the meeting adjourned.

T. JAMES DEANE, Chairman.

W. H. MADDOX, Secretary.

COMMITTEES:

The Chairman has appointed the following Committees, in pursuance of resolutions adopted by the Commission Merchants:

1st. The Committee to select and fit up a Sales Room—J. M. Shepard, Mr. Pannill, Geo. Gwathmey, and R. H. Dibrell.

2d. The Committee to wait on his Excellency, the Governor—Mr. Read, D. P. Gouch, Peter McKinney, G. W. Williams, and P. J. Archer.

3d. The Committee to present a petition to the Farmers' Assembly—Messrs. S. R. Eggleston, W. H. Maddux, C. R. Barksdale, T. J. Deane, and Walter K. Martin.

TO PRESERVE FLOWERS IN WATER.—Mix a little carbonate of soda with the water, and it will preserve flowers for a fortnight, but the water in flower-pots should be changed every day in summer or it will become offensive and unhealthy even if there is salt in them.

Horticultural Department.

E. G. EGGLE, Contributor.

Put up Pickles for Markets.

In previous numbers of the *Planter*, we have directed attention to several items of agricultural production in which northern farmers are skilled, and from which they derive large revenues, which are almost entirely neglected in Virginia and the South. The scope and purpose of these articles was to show our farmers how to make their farms more profitable, without largely adding to the expense and trouble attending their cultivation. Such were our articles on orchard products and Irish potatoes, to which we again call the attention of the reader.

Another item of profit to the North, which will claim our attention to-day, is that of putting up pickles for sale in the markets. This business is extensively conducted in Baltimore, Philadelphia and New York, and vast sums of money are carried out of this and every other Southern State, which might as well be retained at home. It is difficult to arrive at even a proximate estimate of the amount of the tax which the North thus levies on the South; but a few facts which we have gleaned may at least enable our readers to form some idea on the subject.

One of the smaller dealers in this city, to whom we applied for information, showed by his invoice book that his purchases last year amounted to *ninety* barrels, and in addition, some one thousand quart and one thousand pint jars of pickles. Another dealer, a family grocer, sells more than two hundred barrels of pickles and at least three thousand jars. There are, in the city altogether, about fifty persons who are engaged in the sale of pickles, many of whom sell more than double the quantity sold by either of the twain to whom we have already referred, so that we may safely put down the supply of pickles furnished to Richmond alone, at not less than two thousand barrels, and fifteen to twenty thousand jars, and when, to this estimate for the city, we add what are sold in Petersburg, Norfolk, Portsmouth, Alexandria, Lynchburg, Wheeling, &c., &c., it will be seen that the aggregate is enormous,

and that whatever the price at which they are purchased, the total amount paid for them is not a trifle.

Be it much or little, more or less, every dollar finds its way into the pockets of Northern producers, and goes to swell the profits of Northern agriculture. A barrel of home-made pickles is nearly as rare in this market as a white crow. Not that we mean to intimate that no pickles are made in this State. Far from it. Every housewife in the Commonwealth knows how to make pickles, and makes enough to supply her household and to minister to the gratification of her guests, but how many can be found who will put up pickles for sale in the markets. That is never considered, or if it be thought of now and then, it is speedily dismissed as not worth attention. So we have gone on year after year neglecting this opportunity of making money, and leaving it entirely to our Northern friends. Is this the wiser and better course?

We answer no, and we very much desire that our farmer friends shall answer no, likewise. They might disagree with us if they could plead ignorance concerning the manner of pickling, but this they cannot truthfully do. So far from it, everybody knows that the pickle put up by our Virginia housewives surpass any made in the country; and we think now of two ladies in Sussex and Hanover counties, whose pickles would speedily take the precedence of all others in the country if they were offered for sale in the market. And while we thus single out two farmers' wives, we do not mean to say that they make better pickle than any others in Virginia, but we would be understood to declare that there is no farmer's wife within the State who cannot make better pickles than those purchased by our dealers in the Northern cities. There is no lack of information among our people, but there is a sad lack of willingness to practice what they know.

It would be obviously unnecessary to attempt to give directions to the persons described in the preceding paragraph, as to the mode of preparing pickle for the table, and therefore we shall not attempt to do so. It may aid our main purpose, however, to give some account of the way in which pickles are put up for shipment to market.

There are two methods pursued at the North. The first is to pack them in barrels, larger or smaller at pleasure, and the other is to put them in glass jars, which are then stopped tight with cork, and over the cork is put a thin sheet of lead as a wrapper. When the barrel is used, a specific charge is made for the barrel in addition to the wholesale price for its contents, which specific charge is sufficient to cover the cost of the barrel. New barrels are not so good as those which have been used, unless precaution is had to prevent the pickles from catching the flavour of the wood. Old barrels can be bought in all our cities at moderate prices, so that there is no danger that any farmer will be troubled to get a supply whenever he wishes. Heretofore it was not so easy to procure jars. None were made in the State, and even had our farmers desired to put up pickles for market, they would have been hindered by the necessity of sending North for a supply of jars. *This hindrance no longer exists.* Mr. Jacob S. Atlee of Richmond, the owner of the Glass Works at Rocketts, in reply to an enquiry which we made, writes: "I herewith give you a statement of the prices of pickle jars, from one quart to one gallon, per dozen, viz: Pint 44 cents, quart 63 cents, half-gallon \$1 13 cents, and gallon \$1 63 cents." On this a deduction of from 10 to 20 per cent is made to wholesale and cash purchasers. This gentleman, who is largely engaged in the manufacture of all kinds of glass ware, will supply promptly and faithfully, any and all orders with which he may be favoured. From this point by railroad, river and canal, these glass jars can be carried speedily and cheaply to any and all parts of the State, and our farmers are thus shown to be without excuse for longer neglecting the preparation of pickles for sale in the markets.

It is proper that we add, that the best sizes for market are half-gallon, quarts and pints, as these command a more ready sale than gallons.

It is usual at the North to pack in these jars various kinds of pickles, in some one kind, in some another, and another will have all kinds. Thus, one jar shall contain cucumbers, another onions, another snapps, another beets, another melons, and another will contain cucumbers, onions, snapps, beets, melons, &c., &c., all

together. The smaller the pickles are, the better we should say. After all, whether our farmers will adopt the advice which we offer or not, depends upon the question—can money be made by pickling—and that is just the point upon which we are least prepared to make answer. There must be money in it to our friends at the North, else they would give it up instanter, and if they can make money at it, we see no just reason why we cannot. But we propose that each reader of the *PLANTER* shall settle this question for himself and herself, with the aid of such data as we have been able to collect.

The pickles purchased at the North are put up in large barrels, in small casks and in jars as before mentioned. The factory price for them is, for gallons per dozen, \$9; for half gallons, \$4 50, quarts \$3, and pints \$1 75. These are the prices which the Virginia dealer has to pay for them in jars at the North, where he buys large quantities, and then there is added to the cost to him, the charges of transportation. Of course the retail price is considerably more. When the pickles are packed in barrels they are counted, when put in and sold at so much the hundred. Then the charge is from thirty-seven to seventy-five cents the hundred. A large barrel purchased in Baltimore cost \$40, and \$1 for the barrel, and the additional charge is made for the barrel in every case.

Then what say you friends—can you afford to make pickles to be supplied to our dealers here at these prices? Ladies, what have you to say in this matter? The ladies probably know more of the cost than their husbands do, and we desire to have them interested in this matter. If it savour not too much of old fogyism, we would inquire of our lady readers whether they cannot make money enough from pickles to buy their annual supply of dresses, bonnets and hoops. If they can, they will, beyond all question, for our farmers' wives are, in the general, thrifty and careful.

There are good and sufficient reasons why these hints and suggestions should not be neglected. In addition to those more obvious considerations to which we have referred in this and former articles, there are others even more conclusive. And first we note, that if the advice here given is followed, in addition to

increasing their own revenues, and retaining capital in the State, which now goes out of it, our farmers will be giving material aid to an enterprise which deserves to be fostered and encouraged. The manufacture of glass ware introduced into the State, is an important and valuable addition to its manufactures, and if a large supply of pickle jars should be needed, our friend Atlee would be encouraged and prospered by that demand. Secondly, it would stimulate the demand for orchards of apple trees at least, as it would require a large supply of vinegar to make pickle enough to supply the markets of our Virginia cities. And lastly, it would give employment to members of the farmers' family who cannot participate in the ruder and severer labours of agriculture, but could this be usefully and profitably employed. This is the chief consideration. Every Southern farmer knows how much labour there is around him which he cannot employ in his ordinary cultivation, children, women and old men, whose physical powers are unequal to severer tasks of field labour, but who could plant, cultivate, gather and prepare for pickling all those things which are mostly used for that purpose. And many a rich spot of earth is now left to the weeds, which could be advantageously cultivated in various vegetables for pickling. But more than all, here the daughters of the household might find an employment easy of performance, which would enable them to be useful, to be more than drones in the busy hive of life. Let more of those fair damsels complain that we thus mark out work for them, useful and profitable work. They are not asked to go out into the garden and defile their hands with the shovel and the hoe, but they may well preside over the pickling kettle, and will feel happier while thus usefully and honourably employed than they would be idling in the parlour, or sitting in slippers weeping over the fictitious woes of some child of the novel writer's fancy. The farmer's wife among us always has enough to occupy her if she does her whole duty, but it is too often the case that her daughters are mere idlers, with no serious occupation for hands or head. Both must be usefully and constantly occupied, or life will fail of its great end; and we are always pleased when we are able to point young ladies to some useful and agreeable avocation for their hours of leisure.

While they give due attention to reading needle work and music, may they not do something towards the prosperity of the family by putting up pickles for markets.

Something about New Fruits.

This is a subject of peculiar interest to us, and to all fruit growers, to which we desire to call the attention, and about which we wish to secure the earnest co-operation of all the readers of this paper, whether they aspire to the title of fruit growers or otherwise. Every man that has a fruit tree upon his farm, whether it was planted there by himself, or was found growing there when he entered into the possession can aid us in this matter, and may, while thus helping us, confer a substantial benefit upon his immediate neighbours, and upon the community at large. Surely no Virginia farmer will be deaf to our call if he can, without serious inconvenience, be thus instrumental in the accomplishment of a public good.

There are, beyond all question, in various parts of the State, varieties of apples, peaches, pears, &c., which are known and esteemed only within very narrow limits, which would be very highly prized if they could be introduced into a wider notice. Growing on farms in different counties of the State, there are probably, apples not found in any of our nurseries, nor in the published catalogues of our largest nursery men, which, in some or many respects, are equal or superior to any of the varieties which are now known as standards. Within a few months we have met with several intelligent gentlemen who have mentioned in our hearing, apples which they had seen, and which they prized highly, which, from the description given, are unlike any now offered for sale by the regular fruit growers, and which deserve a place in every catalogue, if indeed they are as good as represented.

It is in connection with these new varieties of fruit of which orchardists at large know nothing, that we want the aid of friends in every section of the State. What we wish them to do is very simple, and can be done with but little trouble. It is, if there be upon their farms, or in the vicinity, any variety of fruit which seems to be spontaneous, to have just grown up there by accident, which differs essentially from the well known and favourite varieties, and which has any valuable quality

ther as to flavour or otherwise, we wish them to send us a specimen with such account of its origin as they can avouch a description of its peculiar qualities, of the soil in which it grows, with such other particulars as may be worthy of mention. If it be preferred, however, instead of sending directly to the Planter office, send to the Secretary of the State Agricultural Society, which will accomplish all that we have in view.

There are many reasons why this request should be heeded, two of which we will adduce. The first which we mention, is that it may be the means of giving us some, and perhaps many excellent varieties of fruits, originated here in our own climate in addition to those already known; and secondly, it will enable us to ascertain what varieties produce best in each section of the State; how one variety thrives best in the soil of Accomac, and another in the soil of Alleghany, and thus, nursery men, in filling orders sent them by farmers for fruit trees, will be able to send just those varieties best adapted to the soil of the localities where they are to be planted.

These two reasons are sufficient, as it seems to us, to justify the request which we have made of our readers. Suppose, by their compliance, we should discover in some corner of Virginia, where it is growing now unknown to me, such an apple as the Albemarle pippin, the new apple raised by M. McCue, such a pear as the Sickle, a superior peach, plum or cherry. And why not? The Sickle pear, was found accidentally when a full grown fruit producing tree, and has now become an universal favourite with fruit growers all over the country. Other favourite and famous pears have been discovered in like manner, and so of every other of our standard fruits. What has happened so often here in this State and elsewhere, may very well happen here again, and there will be no controversy we imagine at this point, that if a number of new and valuable fruits should thus be discovered and introduced into general notice, it would be a great public benefit.

It is, however, the other object as connected with the former on which we lay the chief stress. It is a fact well known to fruit growers that there is no fruit which will thrive equally on every soil. Our peach produces excellently in Surry County, which will do but poorly in

Campbell, and so of others. While this is stubbornly true, still no nursery man in the State can speak with confidence as to which, or whether any of the varieties which he has for sale, will prosper well in this or that section. For the most part, they are varieties originated in other States, where perhaps both climate and soil differs materially from that of Virginia, and it may chance that when they are planted here, they will deteriorate, and at all events no man can do more than guess at the result. All this uncertainty would be avoided on the happening of the event to which we have referred. Then the nursery man would have in his grounds whatever fruits had shown themselves peculiarly adapted to any particular locality, and the buyer would know that the trees he was purchasing would thrive in his soil.

The attainment of these desirable ends are, in our opinion, worth whatever effort may be necessary to secure them, and we earnestly invite the assistance of all the readers of this journal. The season just approaches when the various fruits begin to ripen, and it will be an easy matter to pluck one or two specimens from any such tree as we have described herein, and send them with such a statement as can be made concerning them either to the Southern Planter office, or to the Secretary of the Agricultural Society. When received, we will examine them and compare them carefully with the well known species now cultivated in our nurseries, and print such account of them as shall seem likely to interest and inform our readers. And if there shall be sent in any really fine fruits not now generally known among fruit growers, we shall take such measures as will put them within the reach of every owner of an orchard in the State.

Mignonette—Reseda Odorata.

This fragrant weed, is a native of Egypt, and was introduced into European gardens, something more than a hundred years ago. It first found its way into the South of France, where it was welcomed by the name Mignonette, which means "little darling." The name is peculiarly appropriate, and is now universally accepted. It has much the appearance of a common weed,—its peculiar excellence consisting in its powerful and peculiar

ly delicious odor. It was introduced into England in 1742, but it was not until the year 1752, that it found its way into gardens generally about London.

Some persons object to the odor of Mignonette, that it is too powerful. Perhaps it is for the house, but when its fragrance is cast upon the atmosphere, especially in the streets of a city, nothing could be more grateful.

In its native climate, Mignonette, is an annual, and it naturally decays when it ripens its seed; but it can be transformed into a perennial shrub,—dispensing its sweets at all seasons of the year, by a very simple process. It is as follows: Place a young plant in a garden pot, with a stick about eighteen inches in height by its side, to which the branches may be tied. As the plant grows up, strip the leaves and young branches from the lowest part of the stem, until a proper height of stem is obtained, which will become sufficiently hard and woody to stand the winter, by being placed in a green-house, or the window of a sitting-room, and it may be preserved for years, if air is given to it as the weather allows, so that the young branches do not become too delicate. Of course in this situation the plant will require to be watered. As soon as seed vessels begin to form, they should be cut off, which will cause the plant to throw out a fresh supply of blossoms,—but they should not be allowed to perfect their seeds, as that would weaken them very much, if it did not entirely destroy them, and that for a reason before stated.

Of course it will be understood, that these directions are only to be followed with such plants as it may be desirable to make perennial. As to the others, they regularly mature their seed, which are either to be gathered for the next year's sowing, or allowed to drop from the plant into the soil. It very often happens, that the seed thus sown by the plant thrive better, and produce better, than those saved by the gardener. Still, seed should always be saved, for the seeds of the little darling are very tender, and are certain to be very much injured, if not entirely destroyed by the cold of winter.

Something better than Sweetmeats.

Since the advent of the sealed cans for preserving various fruits and vegetables, our

country friends have discovered that there is something better than sweetmeats for the use of the table. All the summer and autumn fruits and many of the more valued products of the garden are now preserved, without sugar, and retain so much of their original flavour, that one is disposed to think that there has been great change in the course of nature, when he eats in December or January milk and peaches or strawberries, apparently just gathered from the vines, or tomatoes, as fresh as if they had only ripened the day before. The first time that we were helped to a portion of peaches preserved in one of these cans, we could not imagine what legerdemain or magic had accomplished the impossibility of giving us ripe peaches in February; and as our friend in a waggish mood insisted that the fruits had ripened that year, we mentally concluded that the lamp of Aladdin had been found again. The secret was disclosed after awhile, and it was with no slight curiosity that we examined the can in which the fruit had been kept.

All of our readers have, since that day heard of and seen the self-sealing cans for preserving fruits, etc. They are coming into very general use throughout the country, and bid fair to supersede entirely those sugary preparations which aforètime impaired the health of young and old, a consummation, in our opinion, most devoutly to be wished.

Our object, however, at this time, is not to descant upon the superiority of thus preserving fruits, &c., so much as to urge our readers everywhere, to get a supply of cans in season and use them for the purpose for which they were designed. The spring and summer fruit will soon be ripe, and as they last but a short time, delay will defeat the intention of such a purpose and desire to preserve for the use of the family in winter. There is no need that we urge this subject upon the attention of those who have once tried this method of keeping fruits for winter use. They are no likely to forego the gratification after having once enjoyed it. But to others, who have not as yet ventured upon this new-fangled invention, we can say, with the utmost confidence and sincerity, that they ought, by all means, to procure cans, and put up a few, or many, as they find opportunity, of the fine fruits and vegetables,—either for use in their families,

or for sale in the market. On this last point, —preserving fruits, &c., for sale,—we shall have something to say in the August PLANTER, by which time we shall procure data which is not now in possession.

Pruning Evergreens.

In a work of some authority we find three rules for pruning evergreens which we have concluded to copy for the benefit of our readers, with the remark that any other season is more suitable for this work than that which many persons select, by which we mean the winter. Because they have more leisure then, they prune, although they are conscious of its impropriety. But for the rules.

1. In pruning evergreens, the lowest branches should be the longest whatever the shape of the head may be.
2. No leaf should be cut through in pruning an evergreen.
3. No cut ends should be seen on the bush or tree.

These three rules are supported by good and sufficient reasons which would satisfy the most skeptical, if indeed there can be any skepticism about directions so obviously proper. It may be worth while to tell how the last can be observed as there may be novices to whom it may be useful. It is effected by beginning the cut on the opposite side to where you stand and always cutting with an upward stroke. Then the cut part will either face downwards or towards the centre of the plant, and if you cut close to a lateral branch, to the bottom of a leaf stalk, at a few yards distance no person could tell that your plant had been pruned at all.

My Pink and other Pinks.

On the table as we write, is a small flower vase, containing twenty PINKS, whose fragrance perfumes the entire body of atmosphere in the room, while their extreme beauty charms the eye of every person who enters. They are all double flowers, and about one-fourth the largest flowers of the kind we have ever seen, and no two of them are of the same shade and colour. One is the deepest crimson, and then the hue of the flowers grows lighter and lighter, until they arrive at a pure white, with the edges of the leaves tipped with a red that is very near a purple. Altogether, they form a bouquet of great beauty.

Beautiful as they are here, they looked far

more beautiful early this morning while the diamond dew-drops sparkled in their petals, as the earliest rays of the sun fell upon the garden bed where they grew. It was a small strip, perhaps two feet wide and twenty feet long, devoted exclusively to pinks, of which there was a great variety, and at a distance one could scarce repress the fancy as the flowers swayed to and fro, to the motions of the zephyrs that they were gay plumed butterflies sporting and playing in the breezes of morning. Indeed it was a charming sight, and we told our friend that it amply repaid us for our early rising and long walk to visit his garden, and we are quite sure that our lady readers would emulate the example of our friend if they could have stood, by our side this morning and looked on the beautiful flowers and inhaled the grateful odour which they flung upon the air.

And this is the moral we would teach, in this notice of our friend's bed of pinks, that every person who has a flower garden at all, or who makes any pretence to cultivate flowers should have pinks, and should put them in one spot, with no other kind of flowers. Persons sometimes cultivate pinks but scatter them here and there in small clusters over all the grounds, but if they wish to see them in their greatest perfection and beauty, let them be planted all together in one bed, as we have more than once advised with respect to all flowers. When the best varieties are originally selected, and they are thus planted, when they come into full bloom, the entire bed will be covered with the flowers, almost hiding the green stems and the earth entirely from view. Such a bed of choice pinks cannot be surpassed by any of Flora's beautiful creations.

Perhaps we are over partial to this flower, because it is associated with the sweetest and purest scenes of our childhood, before we knew what sorrow meant, or had tasted the bitter waters of disappointment. In that far away period of the past, we wandered oft through the well kept grounds of a country home, our only companion a blue-eyed, fair-haired, little girl, whose sweet prattle was more precious to our childish affection, than any and all words of later years. They called her PINK, and perhaps for that reason, we used chiefly to frequent a portion of the grounds, where seated beneath the wide-spreading branches of a noble willow oak, we could look on a large bed of

pinks and inhale their fragrance, while we talked our puerile love talk, and fancied ourselves as happy and as true a pair of lovers as any. And so it is likely we were, for who can tell how pure and sincere are the loves of little children. But a time came, when I sat beneath the oak, and the place by my side was unoccupied, for my PINK had wilted and faded with the other pinks, and looking over the bed above which no flowers waved, I could see beyond a little grassy hillock beneath which reposed the casket that once shrined the sweet pure spirit of my little friend. She went away with the angels, my sweet little Pink, she was too fair and pure for the gross earth to detain her long, and she was transplanted into the brighter regions of the skies, to bloom without decay; and if I love the pinks of our gardens too well, it is because I remember the fairest and most beautiful pink that ever bloomed, and how well she loved those beautiful and fragrant flowers.

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July 1857—3t

LEND YOU A PIANO.

Wishing to convince purchasers of what we have known ourselves for 20 years past, to wit:

That our Piano Fortes are really desirable. (good and cheap) we feel perfectly willing not only to send them on *Trial* to persons wishing to purchase, but also to *Lend* them for a given time, to those who may prefer taking them in that way, in order that they may test what we have said of their quality.

No one wishing to purchase can doubt the prudence of this course, so far as they are concerned, or the liberality of it so far as we are concerned.

E. P. NASH,
Petersburg, Va.

July 1857.

"Twenty-Five Cents" pays for that great and good Illustrated Family Paper, **LIFE ILLUSTRATED**—the best of all the Weeklies, 3 months "on trial" for 25 cents. Send at once to

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LIFE ILLUSTRATED.—We have previously called attention to this excellent publication; it is worth far more to any family than any other literary paper. Instead of diminishing, it increases in interest with every issue, and we most cheerfully recommend it to the public as one of the best family newspapers in the country.—*Southern Teacher.*

July 1857—3t

LAND AND NEGROES FOR SALE.

HAVING determined to relinquish farming pursuits, I offer for sale, the Tract of Land, on which I now reside, containing upwards of

900 ACRES.

It is situated in Botetourt county, about three miles from Fincastle, on the road leading to Blacksburg, about 15 miles from Buchanan, on the James River and Kanawha Canal, and about 12 miles from Bona-sack's on the Virginia and Tennessee Railroad. About

500 ACRES

are cleared; the residue is finely timbered. The Tract is abundantly watered, there being upon it not less than a dozen constant Springs. There are about

40 ACRES

of Meadow, and as much more could very readily be made. It is well calculated either for a Stock Farm or for the cultivation of Tobacco. The open Land is divided into

TEN OR TWELVE FIELDS, with good fences, and is generally in good heart. The Tract is susceptible of an advantageous division into at least two parcels, and it will be so divided if circumstances should render it expedient.

The improvement consists of a comfortable

DWELLING HOUSE,



containing five rooms, a good Kitchen, and other out houses; Cabins for the accommodation of 30 or 40 Negroes; a new Stable, Corn house, &c.

I also wish to sell about

35 LIKELY NEGROES,

consisting of Men, Women, and Children, and all young with only one exception.

It is my desire to dispose of this property privately, and persons wishing to purchase are requested to make immediate application; but if a sale should not be effected before the 1st of September next, said property, together with all the Stock, comprising Horses, Cattle, Sheep and Hogs; Farming implements; Household and Kitchen Furniture, &c., &c., will on that day, be offered for sale at public auction.

Terms liberal, and will be made known to any one wishing to buy.

THOMAS N. BURWELL.

July 1857—2t

Superior North Devons.



I will sell a few young **BULLS** which will be twelve months old this spring, and are now large enough for service.

They are very promising, and of the very best blood, having been sired by "Dacotah," who was bred by Mr. Wainwright, of New York. "Dacotah" was by "May Boy," (imported by Mr. W. from the celebrated herd of Mr. Turner in England,) and out of "Red Bad," who was by Imported "Meganticock," and out of Imported "Matchless." The mothers of these calves are also from imported stock.

I shall also have some **BULL CALVES** dropped this spring, which I will sell, to be delivered this Fall at the Exhibition of the Maryland State Agricultural Society.

As my herd is now increasing, I will also dispose of one or two **COWS** and **HEIFER CALVES**. For the character of my stock, reference can be made to the award of premiums annually made to them, every year that they have been exhibited at our State Fairs.

ODEN BOWIE,

Buena Vista P. O., Pr. George's Co., Md.

July 1857.

W. W. DINGEE & CO.,

RE manufacturing for the present season, one and two horse Railway Powers and Threshers. Our powers are longer than formerly—the cogs and pinions are chilled, which prevents them wearing. The band wheel goes on either side of the Power platform has a covering of inch borders, and power is mounted on a pair of wheels for convenience of moving. Our Threshers are overshot, the roller is entirely of iron, and will last a life time in use. The boxes have self-oiling cups, which the journals constantly oiled, thus preventing wear and consequent wear. The wheels and gear work is oiled by a similar device. The roller is driven by the main belt, and takes less than the power used in the old method. The shaker fits on the power, and may be used for requiring slow motion as a Corn Sheller or a Cutter. Our two-horse Machine, with 3 hands, capable of threshing 175 bushels of Wheat per day. Complete two-horse Machine will consist of a railway power, 29 inch cylinder thresher, a 30 feet of India Rubber Belting, Fixtures for Clover Seed, hooks for fastening the Thresher floor, a pair of self-feeding oil cans for the pounce, oil can, and covers for oil cups. Price delivered in Baltimore. With the one-horse will be sent a 24 inch iron cylinder thresher the fixtures enumerated above. Price \$125, delivered in Baltimore. *All work warranted.* For further information, address W. W. DINGEE & CO., No. 153 Main Street, Richmond, Va., and secure circular. 57-6t

WHEAT FANS.

Doyle's Patent Grain Cleaner!

SIXTEEN PREMIUMS !!
Double Screening Separator has added 16 of Premiums, the first Premium at the Virginia Fair, Richmond, Va.; also at Peabody and Fredericksburg Va., and Washington, Knoxville, Tennessee. This Improved Fan patented April 20th 1852, and has become very popular wherever it is known, proving by its utility in thoroughly cleaning all kinds of grain, to be the best Cleaner now in use. Those in want of a good one should do well to call at Doyle's & Sullinger's in Fredericksburg, Va., and examine for themselves.

Improved Fans will be furnished to any distance in fifty miles of the Factory, and further by Rail and Steamboats. Communications addressed to Doyle's & Sullinger at Fredericksburg, Va., will be attended to.

—6m **DOYLE & SULLINGER.**

VALUABLE TIMBERED LAND FOR SALE.

For sale Seven Hundred and Thirty-one and one-quarter (732 1/4) acres of valuable timbered land, lying immediately on the Norfolk and Peabody Railroad in the county of Sussex. The whole of the original growth of Pine and Oak, principally of the latter, offers great inducements to Lumber getters. For further particulars apply either personally, to

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Shells Clay and Shinney Peas for Sale.

Persons wishing a supply had best forward orders promptly.

THOS. BRANCH & SONS,
Petersburg.

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THE Subscriber offers for sale a desirable Farm in Cumberland County, on Willis' River, at Trenton, ten miles above Cartersville. It contains 228 Acres, of which 135 are open, and 93 in woods. The land is in a good state of improvement. There is on the place an abundance of plant land, water, and timber; a good landing with very good navigation, a **GRIST AND SAW MILL** within one fourth of a mile of the house.

The Improvements consist of a Dwelling with 5 rooms and 2 Porches, Kitchen, Icehouse, Stables, Tobacco Barn, sufficient to cure 10,000 pounds, Negro Cabins, &c.

It will be sold on a credit of 1 and 2 years with interest from date of sale.

For further information apply to

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No. 153 Main Street,
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May 57—tf

S. McGRUDER'S SONS,
COMMISSION MERCHANTS.

RICHMOND, VA.

Pay particular attention to sales—Corn, Wheat, Flour, Tobacco, &c. April 56-1y

Three-Quarter South Down Ram Lambs.

We have for sale, at \$15 each, six or eight very likely lambs of the above breed, of the stock of Mr. R. H. Dulaney of Loudoun. We last year advised those who affect this breed of sheep, to purchase the thorough breed at three prices instead of part-bred stock of our own or any one else; and do so still.—But those who will not do that, had better buy of us than continue to use natives. They are in-and-in bred—the sire on his offspring, which we state, that those who dislike this mode of breeding may not be taken in.

FRANK: G. RUFFIN.

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Sole Agents in Richmond, Va., for

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April 1857.—tf

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June 1857—ly

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For Tobacco.

This Guano has been used with *unequalled results on Tobacco.* Both theory and experience show it to be peculiarly adapted to that plant.

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April 1857—3t

Mr. Lefebvre's School

Corner of Grace and Foushee Streets, RICHMOND, VA.

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

TERMS FOR THE SCHOLASTIC YEAR,

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

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

[July '57]

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Five miles West of the University of Virginia.

W. WILLOUGHBY TEBBS, } Principals.
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The fourth session of this Academy, formerly under the charge of Mr. P. H. Goodloe, will commence on the 1st SEPTEMBER, and close the latter part of JUNE. The course of instruction will embrace everything required in a thorough preparation for any of the schools of the University. For circulars address either of the Principals at Charlottesville.

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July 1, 1857.—tf

GLENTIVAR SCHOOL.

This is a family school for girls entirely under the instruction and superintendence of myself and Mrs. B. The second session begins on 7th September next, and continues until 3rd July. As our numbers are necessarily limited, we will be able to give to each one particular attention. The friends whose names are below can give information as to the sort of influence to be exerted in my family.

Rev. B. M. Wailes, Rev. Peyton Harrison, Mrs. Juliet Drew, Wm. B. Harrison of Brandon, Rev. Geo. D. Armstrong, of Norfolk, Gen. John H. Cocke, Dr. John R. Woods, Geo. F. Harrison, Rev. S. B. Wilson, D. D., and Rev. Wm. F. Hammondson.

For terms, &c., address Rev. S. W. BLAIR, Greenwood Depot, Albemarle Co., Va.

July—3t

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Near Lynchburg, Va.

Classical, Mathematical and Military.

This School is designed to prepare School-Youths for College, and more especially for the University of Virginia.

The next session will commence on the 15th DAY of SEPTEMBER and terminate on the Friday of June, 1858.

TERMS—For Board and Tuition \$200 for the session. For particulars see catalogue. Address Principal at Lynchburg.

JNO. H. WINSTON, Principal.

July '57—1y

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