

Farmers' Gazette,

AND CHERAW ADVERTISER.

VOLUME VII

CHERAW, SOUTH-CAROLINA, WEDNESDAY, FEBRUARY 9, 1842.

NUMBER 13.

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TERMS.—Published weekly at three dollars a year; with an addition, when not paid within three months, of twenty per cent per annum.

Two new subscribers may take the paper at five dollars in advance; and ten at twenty.

Four subscribers, not receiving their papers in towns, may pay a year's subscription with ten dollars in advance.

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The postage must be paid on letters to the editor on the business of the office.

AGRICULTURAL.

The following account of a New England farm is taken from Gov. Hills Monthly Visitor. Although the greater part of it is inapplicable to Southern Agriculture, we copy it entire, on account of the example which it sets forth of thrift resulting from industry and systematic management.

Mr. Phinney's farm is situated five miles from Concord, and ten miles from East Cambridge, at which last place, being in the office of clerk of the principal business court for that extended and important county, he spends five days in each week, and at the seat of the courts at Cambridge, Lowell, and Concord is present at all times, during the setting of the court. For the purpose of superintending his farm and his numerous family concerns, he rises, at all seasons of the year, at five o'clock in the morning; by his own example instructing each and every member of his family (he has reared ten sons and daughters, the youngest of whom is ten years of age) in those habits of industry, care and attention, to which he is personally so well inclined. What with the cares and labors of instructing and directing in his family, and laying out the occupation of half a dozen hired men, and the severe duties of a very laborious office in the public employment it may be taken for granted that there are few farmers in the ancient Commonwealth who perform a more arduous personal labor than Mr. Phinney.

Mr. Phinney took the cultivation of this farm from his father when it produced annually not much over ten tons of hay. One hundred tons is now its annual product. He then kept a pair of horses, two yokes of oxen, and two or three cows, and was obliged to purchase hay to carry them through the winter. He now has twenty-four fine milk cows, keeps six horses, three or more yokes of oxen, and two to three hundred sheep; and the keeping of this stock is but a minor business of the farm inasmuch as the largest and most lucrative share of its product is taken away in the vegetables, roots, and fruits sent twice a week or more to the Boston market, and ten tons of pork annually raised for sale.

We have of late remarked that, generally, in the vicinity of land of one prevailing character, there is, at no very great distance, land of an opposite character, in the intermixture of which an extremely sterile may be converted into a productive soil. In the midst of arid plains we now and then find swamps in which are black vegetable mould, clay, or marl; and, in some instances, it has been discovered that the exchange of silt for clay or mould, and clay for sand or gravel, having wrought wonders in cultivation. The rough ridges of Lexington, in the midst of which Mr. Phinney's farm is situated, are interspersed with bog or peat meadows, some of which have a vegetable mould of great depth.

Grand operations upon a Peat-Meadow. Passing by this meadow, the traveller would little suspect the quantity or the quality of the hay which it produces; passing over it after its burden had been taken off, he would hardly dream of the extent of labor or the excellence of the preparation of this field of several acres in extent. But the plain field, as well as the new orchard which we shall presently notice, has been cleared of hundreds and thousands of tons of stones; and all of them are placed beyond the eye or the ken of the stranger: and where are they?

In the first place a ditch has been made at the edge of the whole semi-circle of the meadow, on this side, between the soft ground of the meadow and the hard pan of the rising hill, just deep enough to cut off the cold springs, which formerly fed the meadow. This outside ditch is filled at the bottom with rocks large and small, leaving the water room to percolate between them. These are covered with sacks of or tough sward sods, and afterwards with the soil, to a depth so as not to be reached by the plough. Transverse ditches, covered in like manner, connect the outside with other open ditches, at

convenient distances, to the level of the lowest meadow; and through a main ditch the whole water is carried off to the lowest point in the lot. But this has only been a part of the underground work which has made of this meadow (out of which, when mowed at the driest season of the year, Mr. P. said he had, when a boy, while pooling the hay off, often sunk to the arm pits) a field which will produce the largest crop of hay for the whole life of a man. "In the most sunken part of the meadow, Mr. Phinney has caused ditches to be made, of some eight to ten feet in width, extending towards the center of the meadow from the ditch at the edge. Into these ditches, in the winter, the stones, from the weight of tons to the merest pebble, are drawn while the ground is frozen—filled with the stones to the proper height. The coal black soil of the meadow is dug out so as to form a new ditch, covering the rocks to the depth of twenty inches and more, so that the plough cannot reach them, and raising the surface several inches above its former position. This process has been repeated, filling one ditch by the digging of another, until the good part of an acre of ground has been gone over with a substratum of stones covered by a rich soil, which produces year after year the largest crops of hay. The effect of the deposition of rock is the proper draining of the whole surface of the meadow within, so that the land is proof against both wet drought, and the ground may be readily tilled with the plough and hoe, as often as it may be deemed expedient to break up the sward. The low meadow land, drained and prepared in this way, is said to be excellent for raising early potatoes for the market. This crop, on that ground fears no drought; the potato vines are free from rust. On this same meadow we saw, at a distance, two years ago, when we made a hasty visit to this place, in the absence of Mr. Phinney, a crop of corn growing of a great size; and then supposed the meadow was like the common intervals upon our river, where the Indian corn is always raised. In 1840 the corn field was put down to a crop of small grain; and this year, for the first crop, three tons to the acre of the best English hay had been taken from the ground, and a luxurious second crop was now growing. Two or three sides of the highway, more recently treated in the same manner, last year planted with potatoes, were this year sowed down to herds' grass in April. The grass sprang at once, so that a great crop of this first rate hay was taken off in July, and another crop was nearly ready for the scythe.

The meadow made thus valuable, (and Mr. P. thinks will yield him an annual income equal to six per cent. upon five hundred dollars to the acre) was prepared at an expense far less than its real value. The bodies of stone upon the ground in the vicinity must be taken somewhere; left at any point above ground, they are much in the way. Upon this farm, Mr. P., before he adopted this method had disposed of many thousand tons in the construction of several hundred rods of double wall for fences, until the entire farm was partitioned into convenient enclosures.

A Splendid Orchard.—In the same enclosure with this meadow to the south-west of the old orchard and upon a declivity facing towards the meadow at the east, is Mr. Phinney's new orchard of five hundred trees, nearly all of which are grafted with the Baldwin apple. This orchard produced last year seven hundred barrels of picked apples. Mr. P. is of opinion that, if the whole number of trees had been left standing in the orchard, the production would have reached one thousand barrels. In the severe winter of 1832, a portion of the then young trees, which stood in the rich ground at the lower side of the orchard, was killed, or so injured as to die afterwards. Mr. P. attributes the destruction of trees on that part of the orchard, at this time, to the too great fertility of the soil and more rapid growth of the tree; the body of the tree having more sap and circulation upon the rich than upon the less fertile ground. This orchard had also suffered one winter from the depredations of mice under the snow, the mice gnawing off the bark entirely, just above where the tree united with the ground. The proprietor had saved the lives of these trees, in almost every instance, by inserting a shoot or scion in three different places around the body of the tree under the bark, both above and below the injured part, and binding a cloth girdle so as to cover the whole of the tree where the bark had been peeled. In this manner the sap was conducted from the roots of the tree upwards, into the body, through the shoots.

The new orchard covered a space of ten acres. This ground had from year to year been cultivated more with a view to the growth of the trees than to the crops from the earth. The ground was not forced by stimulating manures, nor yet kept in a poor state. A medium

quantity was, from time to time, applied. The growth of the orchard is promoted, and the trees kept in a healthy state, by frequent stirring of the ground.

The trees of the young orchard had been set in the ground only fifteen years, and were seventeen years from the seed. The bodies of many of them had already spread to the size of large apple trees; some of them had borne several barrels of fruit in a year. The large body and limbs to the size of a man's body and thigh, denoting their rapid growth, were of the yellow smooth skin of a quick growing limb in a well managed nursery. Mr. P. has given a direction to the limbs instead of the common angle upwards, running out horizontally from the body; thereby contributing to increase its capacity for bearing and its strength, as well as the convenience of hand picking the apples from the points of the limbs farther from the body. Mr. P. has found his account in the excellent management of this orchard of twelve acres. It yields him the income of a capital of ten thousand dollars, and will undoubtedly increase in value for several successive years.

Mr. Phinney's peach orchard is eight or ten years from the stone. It is on elevated ground, with a declination to the northwest, looking on the Wachusett and Monadnock, at the distance of forty and sixty miles west and northwest. Mr. P. thinks this position better calculated to insure the peach tree to the climate than land with a declination towards the south and east, because, during the winter season the orchard will not so often go through the process of obnoxious freezing and thawing, which is most of all conducive to the destruction of the peach tree.

Mr. Phinney's peach orchard is cultivated, ploughed, and manured, with a view exclusively to the growth and preservation of the trees. No crop is raised on that, with the exception of a crop of English turnips sown in August, which will mature so late in the season as to do no injury to the trees. The orchard consists of some three or four acres. At the upper extreme is a grape vine clinging to a trellised frame structure running nearly the width of the lot. On either side of this grape vine the ground has been cultivated for vines, which had been prolific in the production of the cantelope, one of the sweetest of the melon species. The grapes are the kind "christened Isabella," we believe a foreign variety, requiring a longer season than the grape natural in this part of the country. From time to time he has struck down the native grape vines from the sides of his durable double walls. These have spread so as to cover the wall, and the ripe clusters of the large native grape hung in a position which invited the passer by to taste and eat. The peach trees of Mr. Phinney's orchard, as are his other fruit trees in other places, are treated with a cover of salt hay laid over the ground within the shade directly under them. This deposit undoubtedly has advantages in protecting and perfecting the trees.

But Mr. P. is not satisfied with this as the addition to his original apple orchard; he has another consisting of about six acres, covered with the exception of the outside row of a kind of apple sent him a few years since from the nursery of Judge Buel, in Albany, pleasant as fruit for winter use, entirely with engrafted or inoculated sweet apples. The progress of this last orchard has been surprising in the last two years. The trees are of different ages, some of them having been transplanted the two last seasons. This orchard is upon a rocky, but somewhat moist side hill, where the original growth is poplar and white birch. About two acres of this orchard was cultivated with carrots and sugar-beets, of which Mr. P. has been in the habit of producing from seven hundred to a thousand bushels to the acre, to be fed in winter to his sheep and cattle. On these two acres, and indeed over about two-thirds of this orchard, corn, of the kind called Phinney corn, was grown two years ago, at the rate of sixty bushels to the acre. The remaining four acres this year had a potato crop, we think a little better than we have seen any where else—even the good crop now (Sept. 15) growing green and large upon our own premises. Mr. Phinney is of opinion that the use of a sub-soil plough, not the Deauston plough imported from England, but one invented by himself, will increase the crop of carrots, beets, and potatoes nearly one-half. His sub-soil plough is a large and heavy wooden instrument, in the shape of the Cultivator. It has three large iron bolts at the centre, running all the distance, say of eighteen inches, one behind the other. These bolts, an inch and a half or more in diameter, and eight or ten inches clear below the wood, are stump-footed at the bottom, pointed so as to perforate the ground. This stump-footed half harrow, half cultivator, drawn by a team of three heavy yokes of oxen, follows the plough in the same furrow, and roots into the sub-soil, some two, three, or more inches, according to the hardness or softness of the ground upon which the prongs operate. Sub-soil ploughing is but of recent practice, even in England, whence it was introduced into this country. Connected with under-draining, where the wet, which, resting long near the surface, pro-

ducing heaviness, and retarding and preventing the progress of vegetation, is carried off unseen, and the upper soil is left dry and light, sub-soil ploughing adds wonderfully to the capacity of the land for production. This matter is well understood and practised in Great Britain. It is adding hundreds of thousands to the profits of farming in that country. Mr. Phinney, with the philosophy which he has applied to other things, seems at once to have stepped into the true process of sub-soil ploughing, of which we have the evidence before us in the case of this carrot, beet, and potatoe cultivation.

Success of Under-draining.—A considerable portion of Mr. Phinney's meadow, or hay land, is of that heavy kind which, in a rough country, is to be found at the foot of hills, where the cold springs either overflow or come near the surface; in the hollows which are overflowed by continued rains, and upon which the water sometimes long rests; or on the verge of small brooks, in which waters flow a part of the year. Mr. P. attempted to remedy the evil of too much water upon the surface, by rigging the ground at intervals, so the water might soak or run off in the hollows. This had a good effect for a time. Still it did not prevent the whole surface of the land from contracting a closeness and hardness, which required much new labor for its restoration. Mr. P. has introduced, in the place of this process, under-draining, as the most effectual method of giving fertility to the soil, and, at the same time, forever disposing of the large amount of surplus stones that abound upon his farm.

By continued improvements of this kind, Mr. Phinney has been able to increase his crop of hay four-fold. He gets a great quantity on a small space of ground. On the kind of land natural to the production of hay, his practice has been, for several years, to invert the sward to the depth of six or eight inches, with the Prouty and Mears plough, adjusting the edges so as to leave no crevice; pass over the ground in the first instance with a heavy roller; spread on ten or a dozen loads of compost manure; harrow the ground lengthwise of the furrows; sow with herd's grass and clover; harrow or brush it in, and roll down close a second time. In this way the field is left in the smoothest condition. The unmoved sward at the bottom has a fine effect upon the subsequent annual crops, making the grass hold on much longer than if it had been stocked down in the usual way. Mr. P. had one field put down in this way, which, without other preparations, had continued to produce, for five years in succession, full two tons of hay to the acre.

The method of stocking down to grass first, after a crop of corn and potatoes is found to be the best in the drained grounds. Mr. Phinney sowed herd's grass in April, upon about two acres, and, instead of the long process when the seed is sown with grain, of obtaining a crop of herd's grass in two years, he was able to cut a large crop of hay in less than three months from the time of sowing.

The unevenness of Mr. Phinney's farm enables him much to increase his crop of hay by irrigation. The effect of pure water on grass ground, applied at the proper time and in the proper manner, is surprising to those who would suppose that the pure element intrinsically has no fertilizing quality. Mr. P. has ascertained that land will produce large crops of hay, year after year, with no other application than flowing in the spring, when fresh water makes brooks that become dry a great part of the summer. He has contrived to turn a stream of water, issuing from a pond that is never dry, which sourced or killed the grass when all flowing in its natural confined channel, over an extent of several acres, by running channels on the brow of the hill so as to overflow or leak out on the lower side. Wherever this water touches and flows off, the crop of hay is much increased.

Irrigation in the country seems to be but little understood and practised. There are many places where the water can be passed over fields, where the proprietors have never thought of the great advantage resulting, but where a very trifling expense, judiciously applied, would much increase the crop of hay and grass.

Mr. Phinney has for years had an eye especially to the "main chance" of the farmer—the manure heap. Without the aid of large quantities of manure, he could never have brought the splendid farm, which he owns and occupies, to its present production. Although he may be styled a fancy farmer, in all cases, he seems to have consulted rather utility than the mere gratification of the eye. If we look at his trees for ornament, they are such as are profitable for their fruits. If we turn to his splendid garden, crops, they are all intended for the food of man and beast, or for the market. He pursues the laborious business of farming, as well to gratify the pride of the eye, as to be able to realize that there is profit in the occupation; and we cannot doubt that he does realize a living profit in the occupation, notwithstanding he does everything with hired help, at the best prices, and depends on the faithfulness of his workmen, when much of the time he is absent from necessity.

As the only practicable mode of bringing up the production of his farm, it

being too distant and too expensive to purchase and bring manure from the stables of the city, he commenced rearing swine. For several years his common average number was one hundred and fifty. Every one who keeps swine will realize how great is the quantity of food consumed by a score or two of this voracious animal—that few of the largest vegetable and grain farms will produce enough to keep in growth so great a number. To keep up the number, Mr. P. resorted to the Boston market, and frequently purchased damaged grain and rice, the refuse ship bread from returned voyages, and other material to be found in the city. Boxes of damaged raisins, with other injured imported fruits, were sometimes converted into thanksgiving food for the grunter. All the time the boxes were made workers for the benefit of the farm. His swamps and low grounds have furnished abundant material for the hog pen; loads of black mud or muck are constantly lying on the outside, to be thrown in and worked over by the nose of the hog as fast as it may be profitably added to the work already done. After it is thus worked, it is generally carried to the barn-yard to be trodden upon, and mixed with the droppings of the cattle, or the daily collections in the winter of the stables, where the whole is accumulated in mass fit to be applied in the spring of the year to every growing crop. The well-arranged barns on these premises are so constructed that the urine of the cattle passes down into cellars where every thing is saved. The hogs are generally kept in small pens, with two apartments, one for the mud, and the other as a place to rest upon a dry floor. They work, for the most part, either singly or in pairs; and it seems to be a part of their daily business to root and champ the fresh black mud that is thrown to them. And it is as much the business of the workmen to supply and take out of the pens, as it is periodically to milk the cow or to sow and hoe for the crop.

Mr. Phinney's present number of hogs is about seventy five. He says he cannot afford to keep a number beyond this, while Indian corn costs a dollar a bushel, and pork sells for only six cents. When pork sold for eight, ten, and twenty cents to the pound, he did well, even when he had to purchase a portion of food for the keeping, to keep as high as the number of one hundred and fifty. He has accumulated, by their means, as many as five hundred full loads of the best manure in a year; and he has made sales of pork to the amount of between two and three thousand dollars in a season. By great attention and expense he has succeeded in rearing a breed of hogs, we think a little better than that of our friends, the Shakers, at Canterbury. His whole herd of swine are of the Berkshire blood, of the latest and best importations. He has engrafted this blood upon another imported breed, which he has named the Mackey; and in some instances mixed both with another breed from the fur East, which he calls the Mackey. The Mackey breed he obtained from a ship captain of that name, well known as sailing out of Boston, who went to the bottom, with the whole ship's crew, in the hurricane of last March, about the time of the loss of the President. This breed of hogs I aptly blend the mild dispositions, broad backs, and full hams of the Berkshire breed, with the long bodies and deep flanks in which they were deficient, in short, by the mixture, he obtains a breed which gains and fattens on the smallest quantity of food, and which is of sufficient activity to perform all the labor which any reasonable man may require of hogs. In the admixture of these breeds it is curious to perceive the red color of the original Berkshire now and then breaking out in a single individual of the litter, while others are pure white, some nearly white, some nearly black, and some mixed with spots of black in a red or white ground. Mr. Phinney, within the last six or eight years, has furnished many breeders to be sent into different parts of the country. For these he has received prices in pairs, when young, from ten to twenty, and more dollars. Persons who have obtained this breed of hogs, at a cost when brought home as high as thirty dollars the pair, have found themselves the ultimate gainers; as the lessened expense of keeping, and the better of the improved breed would in a short time compensate all.

Besides the confined pens, Mr. Phinney has a large yard in which from twenty to fifty hogs, of the different sizes and ages, from the green Berkshire boar of eight hundred to the smallest squeaker, congregate and work together, up to their bellies, in the mud and other material with which they are constantly kept supplied.

Improved Breeds of Animals.—To improve breeds of animals, Mr. Phinney has been in the habit of paying fancy prices, (hundred of dollars for a bull or cow,) and still higher prices for the better breed of horses. In his pasture was a Morgan mare, which had been bought and sold as high as \$500.

Mr. Phinney has a herd of five cows, the milk of which is daily sent to Boston market; the income of the twenty-four cows from the spare milk is from five to eight dollars a day, according with season of feed, or the number giving milk in the severe drought of the late summer the

quantity of milk has every where been lessened. Mr. P. has several fine Durham cows to appearance of noble forms, and almost the size of the ox. These he thinks not to be adapted to the common New England pastures; they want luxuriant grass fields and high feeding to sustain them. He had cows of the native breed, which he esteemed better than the Durham cows; but he had an imported Ayrshire cow which was the most profitable milker of his whole flock.

Mr. Phinney avoids, as much as possible, the range of cattle upon his hay grounds. He thinks the feeding of meadows to be highly injurious to the subsequent crops; and into that portion of his mowing lands coming into the same inclosure with his orchards and fruit trees he never suffers cattle to come at all. The present summer, from the severe drought, he was obliged to turn his cows since the hay was taken off, into one or more of his clear hay fields. From the large stock which he keeps it might be supposed that his pastures were abundant in the production of food. He has partially made them so cleaning out the rocks, and cultivating such portions as it was possible to plough. Pastures that are not so full of rocks as to preclude the plough, we cannot if it can be cultivated to great advantage, so that one acre may be made to yield the feed annually obtained from four acres. Alternate ploughing and cultivation with manure, laying down to hay for two or three years, followed by pasturing a similar length of time (carrying the rotation through several fields) would soon make the farm of fifty acres a source of greater profit than the ordinary farm of two hundred acres.

From the Connecticut Farmer's Gazette, DURHAM AS MILKERS.

In the January number of the New Genesee Farmer, which has just come under the editorial supervision of Rev. Henry Colman, we find an extract from that gentleman's fourth report on the Agriculture of Massachusetts, which is now in press in Boston. Mr. Colman, it will be recollected, has for several years filled the important office of Agricultural Commissioner, and the Report is an official document. The extract occupies about three pages in the Farmer, and is wholly devoted to an examination of the claims of several families of "improved" cattle, and a comparison of their milking qualities. We have not room for the whole extract, but as we have occasionally published notices of extraordinary quantities of milk yielded by Durham Cows that had the advantage of some of the richest pastures in the United States, we are glad of an opportunity to lay before our readers some particulars relating to the same breed of cattle nearer home. Mr. Colman gives a particular account of the milking properties of Durham Cows kept by ten different individuals, in different parts of Massachusetts and Connecticut,—from which we have selected the following as affording our farmers a fair chance to estimate the value of their cows when kept on the short pastures in the immediate vicinity of the city.

7. Wm. K. Townsend, at East Haven, Connecticut, had eighteen cows of the Durham Short Horns, full blooded or in part, which were kept for supplying milk to the city of New Haven. These, in milk, gave a daily average of 110 quarts, besides the milk and butter used in the family. It will be at once perceived how indefinite this account is, though given by the intelligent committee of the New Haven Agricultural Society. We are at a loss to know how many cows were in milk at a time, whether all or a part to dry, and how much butter and milk was used in the family. The family, it is said in another place, was large.

I have had the pleasure of seeing this remarkably beautiful stock. Their appearance was in the highest degree favorable to their character and keeping. The average return of milk, as above, was 8.9 quarts per day, exclusive of the required quantity.

8. I subjoin an extract of a letter from one of the most intelligent and public spirited farmers in New England, Henry Whitney, of New Haven, giving an account of his Improved Short Horn stock. Perfect reliance may be placed on it, and it will be read with much interest. Mr. Whitney's personal improvements in agriculture and gardening, his liberal expenditures in his importations, with a view to improve our live stock, and the intelligent and effectual aid which he is rendering to the great cause of an Improved husbandry, entitle him to the grateful respect of the agricultural community. Many men are like the spindles in a factory, which make a great deal of buzzing and racket, yet perform a very humble part. Mr. Whitney, without noise or ostentation, moves with the force of a power wheel. He turns the spindles, which the little things, with their heads always erect, imagine that they fly round of their own accord. Though we would give honor to whom honor is due, it is not worth while to undervalue them. They perform their part well, and their operation is essential. The Connecticut agricultural boom is now turning out many a beautiful and sub-