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By M. MACLEAN.

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AGRICULTURE.

RECENT AND EXTENSIVE MARLING IN SOUTH CAROLINA.

Communicated for the Farmers' Register. Columbia, S. C., Nov. 30, 1842.

DEAR SIR:—It affords me great pleasure to comply with your request, to furnish you with a statement of my marling operations during the first year...

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To one having marl on his own premises nearly the whole of this expense would be saved. I am enabled, by omitting to open new land, to haul out and spread this marl, without interfering with other plantation work, or lessening the number of acres planted per hand.

Shell Bluff is a bold cliff on Savannah river, over 200 feet high and in some places more than 100 feet perpendicular. Professor Vanuxem, who examined it some years ago, (see Farmers' Register, vol. vi, p. 70, and also vol. x, p. 487,) discovered 14 varieties of marl, varying in quality from 37.2 to 93.4 per cent. of carbonate of lime.

hard limestone, and it is doubtful whether any of the marl here will make lime, though it is an excellent cement. Much of that which I have used has been cut from the face of the cliff with pick-axes. It falls down sometimes in fine grains, sometimes in masses. At every handling it breaks up finer, and exposure to the air assists disintegration. I do not burn or pound it, or use any preparation whatever, but spread it as I get it.

By the 22d of April last, I had marled 175 acres at the rate of 200 bushels to the acre. Of these I planted 50 acres in corn on the 17th March, 50 acres in cotton on the 10th April, and 75 acres in cotton on the 22d April. These three cuts are in the same field, and adjoining, being separated only by turn-rows, yet the soils vary considerably.

Table with 2 columns: Item, Percentage. Water lost at 300 degrees 2 per cent. Vegetable matter 3 Silica 80 Alunina 11 Oxide of iron 2 Loss 2

This cut was in cotton last year, and my expectation was that with common seasons it would produce 12 bushels of corn per acre. And had I not kept the unmarled acre as a test, I should have set down all over that quantity to the credit of the marl. The corn came up badly, and suffered by the birds.

Table with 3 columns: Increase, Per cent. Unmarled acre 250 lbs. Marled, at 100 bushels 255 " 35 lbs. 14 " " 210 " 314 " 64 " 25.6 " " 310 " 331 " 21 " 6.4

The corn was gathered on the 24th of October, being thoroughly dry and having shrunk as much as it would in the field. There appeared to be little or no difference in point of soundness. It was shucked clean and measured in a barrel. The unmarled corn shelled out 2 quarts less to the barrel than the marled. The following was the result:

Table with 3 columns: Increase, Per cent. Unmarled acre 17 bush. Marled, at 100 bushels 21 " 4 " 23.5 " " 210 " 21 " 4 " 23.5 " " 310 " 15 " 1 " 2.9

From this it would appear that 100 bushels of marl was as efficacious as 210, and perhaps in such land as this such may be the fact. It appears also probable that 300 bushels to the acre is too much. I ought however to state that this last acre had a slight sink in the centre, and that the slopes around it are much thinner than the average land.

of the four bushels increased to the peculiarity of the season operating on the marl I am wholly unable to decide. Supposing the increase from the season to be the same on the marled and unmarled land, and deducting 5 bushels from the produce of each acre there will be 33 1/2 per cent. in favor of the tea best marled acres.

I selected also and laid off separately 4 acres of cotton along the turn-row of the 75 acre cut of cotton. At the time I thought them nearly equal in quality, and the one supposed to be the best of these was left unmarled, and 1, 2, and 300 bushels of marl spread upon the other three.

The marl on these acres contained, like that on the corn cut, an average of 54 per cent. of carbonate of lime. This kind is of the kind commonly known as mulatto soil, and was clearly at least as early as the corn cut. It was certainly plumed by the Indians in 1740. The following was the analysis of it before marling, for which, as well as for the analysis of the corn cut, I am indebted to the kindness of Prof. Elliot;

Table with 2 columns: Item, Percentage. Water at 300 degrees 3 Vegetable matter 4.5 Silica 71 Alunina 14.5 Oxide of iron 4

This cut was not planted until the 22d April, because it could not be marled before. A dry spell occurring immediately after, at the end of two weeks very little cotton had come up except in the marled acre in which there was about half a stand. My overseer becoming alarmed in my absence replanted the whole, and threw out the whole seed wherever it had not come up. This was done on the 6th May, so that the crop of this cut dates from that period, which is at least a month later than I should have preferred.

Table with 3 columns: Increase, Per cent. Unmarled acre 1111 lbs. in the seed. Marled do at 100 bu. 846 " " " " at 200 " 1003 " " " " at 300 " 1318 " "

The difference between the unmarled acre and that with 300 bushels of marl, was 17.7 per cent. in favor of the latter. It would have been greater perhaps any other year than this, which has been almost as favorable for cotton as corn. The average production of the whole 75 acres was 966 lbs. per acre.

Table with 2 columns: Increase, Per cent. 1833 average per acre in seed 721 lbs. marled lightly. 1831 " " " 784 " " 1835 " " " 951 " " marled lightly. 1735 " " " 451 " " 1810 " " " 497 " " 1841 " " " 590 " " marled. 1842 " " " 966 " " marled.

The other 50 acre cut of marled land was planted in cotton on the 10th April. It came up in good time and was a fine stand. This is also a light gray soil, with less clay than the mulatto land, and less sand than the corn cut. It is probably as old as either, and has been cultivated in much the same way.

after all of them except the 75 acre cut it soon appeared to be the oldest cotton, and certainly matured the earliest of any. Immediately after the cold weather, about the 1st August, the rust commenced in it, and by the 20th of that month it had the appearance of a field after frost. Forms, small bolls, and even the leaves dropped. Most persons who saw it thought it had been cut off one half. I think myself it suffered to the extent of one-fourth at least. But I have made on this cut this year 840 lbs. of seed cotton, which is nearly 50 per cent. more than I ever had made on it before.

Table with 2 columns: Increase, Per cent. 1833 average per acre in seed 535 lbs. marled. 1831 " " " 435 " " 1810 " " " 358 " " 1811 " " " 336 " " marled lightly. 1812 " " " 840 " " marled.

I think the injury from the rust nearly or quite equal to the benefit derived from the favorable season. And that the increase from the marl was greater on this cut than on any other, because the earliest marled and most seasonably planted. The rust here was more injurious than in any other field, and I might have attributed it to the marl, but that the 75 acre cut also marled suffered least of all.

I have troubled you with this lengthened detail of my operations, because this being the first serious experiment with marl in South Carolina (that I know of), it may be interesting to those who have this earth within their reach, to know the particulars. From the facts I have stated, each one can form his opinion on nearly as good data as I can my own—I can only add that my expectations for the first year have been fully answered.

Your reviewer, Commentator, in the Oct. No. of the Cultivator, in his remarks on Mr. Sotham's expression, given above, says Mr. Bakewell made a similar experiment in England to that proposed by Mr. Randall, "and it is presumable with no better cattle to begin with than Mr. Randall might probably find among what is called the 'native breed' in New York." Now it may be pretty near true that Bakewell began to breed with cattle which were not better than those which some have called 'native' in this country; but from the best evidence to be had, it seems to me certain, that the animals with which Bakewell began to breed, were not only very good in themselves, but belonged to a race whose superior excellence had been long acknowledged. That under his master mind they attained still higher improvement, is neither denied nor doubted; but that the originals were altogether superior to our common cattle, is plain, if we admit testimony on this subject.

With great regard and esteem, Your obedient servant, J. H. HAMMOND, Hon. WHITEMARSH B. SEABROOK, Pres't of the State Agr. Soc.

"NATIVE," AND OTHER CATTLE. Messrs. Gayford & Tucker.—I have read, with great interest, the first volume of the Transactions of the New York Agricultural Society; and with none of the papers therein contained have I been more pleased, than with the one on "Neat Cattle," by Henry S. Randall, in which are many useful suggestions in regard to the improvement of our cattle, and the production of a breed or breeds suited to our climate and purposes.

Mr. R. fears that too many are too prone to underrate our native stock, which he thinks "has produced animals that would suffer little by comparison with those of any other breed." In some remarks on Mr. Randall's ideas, by Mr. Wm. H. Sotham, in the Sept. No. of the Cultivator, is the following rather ultra expression: "He [Mr. R.] may select the best [of the native stock] if he chooses, and breed them until he is of the age of man, and my word for it, he will never breed a beast that a good judge would condescend to put his hand upon."

is "native stock?" Here is the grand point; and they may as well dispute about the merits of British sheep, or any other species of animal which embraces varieties very widely different in their characters, as to attempt to decide that matter until this point is settled.

If Mr. Randall is to be allowed, (and this is obviously his intention,) to take such animals as Mr. Rudi's fat ox as specimens of the scrub or "native" breed, it appears to me he would be under no necessity of breeding till he is three score years and ten, before he could produce an animal that a good judge would condescend to put his hand upon."

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I saw the man who said he raised this ox; and the history which he gave of him, was that the bull which sired him was "part Hereford." In this, both he and Mr. Rudi agreed. I cannot see why this statement need be doubted; for according to an account which Mr. Bement has published, some Herefords were introduced into this part of the country several years ago. But history and tradition out of the question, it appears to me there would be as much propriety in taking an animal which should show all the principal points in shape and color of an improved Short Horn, as a specimen of the "native stock," as there is in taking this ox as such. An example of this kind would probably be regarded by the advocates of the Short Horn as not altogether fair.

The first great advantage which Mr. Bakewell possessed over any one who might attempt a similar experiment, consisting himself to the common cattle of his country, was the fixed character of his stock. Their leading points had been the same, without admixture, as far as we learn, for ages. Hence he might calculate on a certain transmission of the qualities possessed by those he first selected, hereditarily, to their offspring. The originals of our common cattle have been brought from almost every country and district from which this country has ever received emigrants.

Yonst, in the work on British Cattle, gives a very interesting account of the stock from which Mr. Bakewell made his original selections. Under the head of the "Long Horns," he says: "In the district of Craven, a fertile corner of the West Riding of Yorkshire, bordering on Lancashire, and separated from Westmoreland chiefly by the western moorlands, there has been from the earliest records of British agriculture a peculiar and valuable breed of cattle." At page 159 is given a portrait of a Craven bull, "supposed to bear about him many of the characters of the old breed."

In 1720, it is stated that a blacksmith by the name of Wilby, commenced the work of improving the Craven cattle, with some cows which he procured from Sir Thomas Greshley. "Soon after this," says Mr. Yonst, "Mr. Webster, of Canley, near Coventry, distinguished himself as a breeder. He, too, worked upon Sir Thomas Greshley's stock. He was at constant trouble in procuring bulls from Lancashire and Westmoreland; and he is said to have had the best stock of cattle then known." At pages 191, 192, it is said, "improvement had hitherto been attempted to be produced by selecting females from the native stock of the country

try, and crossing them with males of an alien breed. Mr. Bakewell's good sense led him to imagine that the object might be better accomplished by uniting the superior branches of the same breed, than by any mixture of foreign ones. On this new and judicious principle he started—He purchased two Long Horned heifers from Mr. Webster, and he procured a promising Long Horned bull from Westmoreland. To these and their progeny he confined himself. \* \* \* Many years did not pass before his stock was unrivalled for the roundness of its form, the smallness of its bone, and its aptitude to acquire external fat, while they were small consumers of food in proportion to their size." The object in making these quotations is to show that the ancestors of Mr. Bakewell's stock had been considered excellent long before he began his career as a breeder.

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In what I have said, I disclaim any intention to "underrate the native stock," but have been influenced only by a wish that the public may be set right in matters of fact.

SANFORD HOWARD. Albany Cultivator.

From the Southern Planter. GUINEA GRASS.

Along with some grass roots, for which we are indebted to the public spirit and politeness of Mr. Garnett, we received the following note:

Messrs. BOTS & BURFOOT: Gentlemen.—I now send you the Guinea grass roots which your North Carolina friend requested you to procure for him; and, with your permission, I will avail myself of this occasion to publish once more what I think of this grass, as I find that some of my good friends have attributed to me opinions which I never entertained. Not that I consider these opinions at all important to any of my brother farmers; but having once published them, and perceiving that some persons have thereby been induced to make a trial of the Guinea grass, I owe it both to them and to myself to guard them, if I can, from forming an erroneous opinion on the subject.

The good friends to whom I allude, have called it "my favorite grass," preferring this, I presume, to the somewhat ruder term—"hobby," although it means pretty much the same thing. But the truth is, that if I must have a hobby—like most of my brethren—it shall neither be of grass nor straw; and as to the grasses I have been content to rank them as those have done who have most experience in their culture. What I formerly said of the Guinea grass I still think; and it is, that it will produce a greater weight of green food—counting the four cuttings which it will certainly bear, at an average weight of between two and three feet, in high, dry land, of ordinary quality, than any grass of which I have any knowledge. I infer from this, it will yield a greater quantity of such food, on high, dry land, of any quality. I have also said, that it will stand drought better than our other grasses, that horses and cattle eat it very freely, for I have seen them do so. How it would compare with other grasses in nutritive properties I do not know, as none of them, I believe, have yet been analyzed in this country. It is certainly a coarse grass, if suffered to reach a greater height before cutting than I have mentioned, and therefore less suitable for hay than the grasses commonly used for that purpose. It is also hard to extricate, but not more so than the red top, which is generally preferred to all others, for very wet land. From all these facts, then, which I have noticed for four years, I deem myself authorized to say of the Guinea grass, that in all high, dry, and even sandy soils of ordinary quality, such as are unfit for either clover, orchard grass, timothy, red top, or meadow oat, it will produce a much greater weight of green food than any of them; that it will stand drought much better, and that horses and cattle eat it freely. Eat in all situations where the climate and soil are well adapted to clover, orchard grass, and timothy, it might content any farmer to cultivate no other kinds. Still, the knowledge of their excellence should not prevent small experiments with other grasses; for our maxim should be, that there is no stopping place for those who wish to acquire a thorough knowledge of husbandry in all its branches. Let your friend then, proceed to make a small experiment with the Guinea grass roots, which I now send you for him.—They should be buried in the earth until the ground ceases to freeze in the spring. Then cut the roots into pieces two or three inches long, and plant them in well prepared land, between two and three inches apart. Let the rows be twelve inches deep, and place the cuttings in each row, at the distance of eight or nine inches. The plants will require working the first year; but after that they will occupy the ground to the exclusion of any other growth, and will bear cutting at least four times a year. In one season I cut it five times. With sincere wishes for the success of your paper,

I remain, gentlemen, Your obedient servant, JAMES M. GARNETT.