THE PROGRESSIVE FARMER

THE INDUSTRIAL AND EDUCATIONAL INTERESTS OF OUR PEOPLE PARAMOUNT TO ALL OTHER CONSIDERATIONS OF STATE POLICY.

Vol. 14. RALEIGH, N. C., JANUARY 23, 1900 No. 49

PUBLISHED WEEKLY

The date on your label tells you when your subscription expires. Receipts for money on subscription will be given by change of date on label. If not properly changed in two weeks, notify us.

DISCONTINUANCES.—If a subscriber wishes his copy of the paper discontinued at the expiration of his subscription, notice to that effect should be sent. Otherwise it is assumed that a continuance of the subscription is desired, and all arrearages must be paid when paper is ordered stopped.

Money at our risk if sent by registered letter or money order. *Please don't send stamps.*

Be sure to give both old and new addresses in ordering change of postoffice.

Basis of Advertising Rates: ten cents per agate line. Liberal discounts for time and space.

This item is marked to remind you that you should carefully examine this sample copy and send us $1 for a year's subscription. Will also send paper on trial 6 months for 50 cents, or 3 months for 25 cents. Or we will send your paper free for one year if you will send us $5 in new subscriptions, or free six months for $3 in new subscriptions, at these rates.

We want intelligent correspondents in every county in the State. We want FACTS of value, results accomplished of value, experiences of value, plainly and briefly told. One solid, demonstrated FACT, is worth a thousand theories.

THE PROGRESSIVE FARMER is the Official Organ of the North Carolina Farmers' State Alliance.

FARM AFFAIRS.

COTTON CULTURE.

Correspondence of the Progressive Farmer.

Georgia Station Bulletin No 39 gives an account of the previous year's experiments in cotton culture, and summarizes the results of experiments during the last seven years.

Of twenty one varieties tested last year Nancy Hanks ranks earliest of all and first in total value of yield of lint and seed. Texas Bur stands second, and Jackson's Limbless (so called), which stood tenth year before last, stood third last year. It is identical with Welborn's Pet.

Allen's Long Staple has again proved to be the most productive long staple upland cotton ever cultivated at the station. If the lint were sold at an advance of 2 cents per pound over the price on which the comparisons were *based in tables 2* and 3, the value of total products would place this variety easily at the head of the test. The lint is much longer than ordinary upland, and it would probably fetch 2 or 3 cents per pound more than the ordinary upland if offered to a special buyer in large lots.

It is a helpful guide in selecting and improving varieties of cotton to know that large bolls, small seeds and large percentage yields of lint are desirable qualities, and are generally associated with the largest value of total yield, while in high latitudes and on low bottoms, or when planted late, or whatever the conditions that tend to shorten the season of growth and fruitage, an early variety is indicated.

As to the best distance, in five of the seven years the most productive plats in four foot rows were those where the plants stood one to two feet apart in the row. But all tests go to show that the space between the plants should be as wide as that between the rows. Thus, instead of having rows four feet apart and plants two feet apart in the row, which gives eight square feet to the plant, the rows should be three feet apart and the plants three feet apart in the row. In other words, the area of ground allowed to each plant should be as near as possible a perfect square. This was found to be the best for corn as well as cotton.

To the great surprise of most advanced farmers and to the astonishment of some who have habitually urged the expediency of subsoiling clay lands, the subsoiled fourths of the acre produced only sixteen pounds of seed cotton per acre more than the unsubsoiled fourths.

It is a significant fact that during the eight years past no experiment has resulted in favor of the practice of subsoiling as against land well and deeply plowed to a depth of six to eight inches.

Tests show that it does not pay to bed on part of fertilizer and reserve part to put in drill when planting. Give it all at one dose at time of planting.

Raw bone meal was found to be not a good fertilizer for cotton. The best commercial mixture is 468 pounds of acid phosphate 36 pounds of muriate of potash and 296 pounds of cotton seed meal.

Alabama Station Bulletin No. 91 treated of co operative tests of fertilizers for cotton by many farmers in various parts of the State under direction of the experiment station. Of 30 such tests 22 gave definite results.

Alabama soils differ widely and hence require different fertilizers. In many cases costly fertilizers are used that do no good because of a kind not required by the soil to which they are applied. Such losses are serious, and to avoid them was the object of these tests. To map the State according to fertilizer requirements will be the work of years, but it will save the farmers millions of dollars.

In locating the first year's tests, the station was guided more by geological formation than anything else.

In eight cases phosphoric acid was most effective. These soils were generally gray or red sandy, with a slaty or pale red clay subsoil, and the soils were generally thin or shallow.

In four cases potash was most effective, and these soils were red sandy soils, with red clay subsoil within three to six inches of the surface.

On deeper red sandy soils underlaid by red clay, nitrogen was the most effective element.

On clay soils all three elements were required.

The fertilizer that yielded the largest net profit in the greatest number of cases was 200 pounds cotton seed meal, 240 pounds acid phosphate and 100 pounds kainit per acre. This mixture contains nearly 3 per cent. nitrogen, 3 per cent. potash and 8 per cent. available phosphoric acid.

The season was generally dry, and rust or other leaf disease was widely prevalent and very destructive. Under these conditions kainit greatly reduced the injury from leaf diseases in 61 per cent. of the experiments of which complete reports were made. This does not imply so favorable an effect of kainit in seasons when weather conditions are normal, and when rust or blight is less widely prevalent.

These suggestions should interest cotton-raising readers of The Progressive Farmer. A COTTON FARMER.

FEEDING.

Correspondence of the Progressive Farmer.

Following is a terse summary of some results reached at the Texas Station: Feeding cotton seed or cotton seed meal to cows causes the cream to separate from the milk more completely; corn grown in the South is richer in protein, fats, and sugar than corn grown in the North; Northern corn planted in the South improves in these elements from year to year, while Southern corn planted in the North loses in these elements from year to year; only 42½ per cent. of the dry matter in cotton seed hulls is digestible, while 60 per cent. of the dry matter of corn fodder is digestible; vegetables on tile drained land matured earlier and yielded more abundantly than the same varieties on undrained plats along side. shallow tiles giving better results than deeply-laid tiles, the increased yield on shallow drained plats being as high as 170 per cent. B. I.

MARLS AS FERTILIZERS.

Correspondence of the Progressive Farmer.

From Bulletin No 78, of the Virginia Station, we extract the following interesting and instructive points on marls, beds or mines of which occur in many States:

Marl is the name which is applied to a variety of earthy deposts of varying composition containing a considerable per cent. of carbonate of lime. It forms a very valuable addition to our list of valuable fertilizers. While its fertilizing value is increased very largely by the percentage of phosphate of lime and of potash, its chief constituent is carbonate of lime, which gives to it its main value. When applied to the soil lime affects it in different ways and there are several points to be considered in its use. It may be regarded somewhat as a direct plant food, as well as a chemical agent acting upon the organic matter of the soil and various mineral constituents of which the soil is composed. Another important property is the mechanical action which it exerts upon the soil. If applied to a light sandy soil it makes it less porous and less inclined to part with its moisture, while on the other hand, when applied to a wet, clayey soil it tends to make it more porous and more easily worked. Notwithstanding the fact that large quantities of lime are consumed by plants it is not usually regarded as a fertilizer to be added to to the soil, for the reason that the soil is usually abundantly supplied with it. It, however, has the power of making available the compounds of potash and soda from their insoluble combinations. The former of these substances is certainly of great importance in the growth of plants. Lime also decomposes organic matter in the soil and renders it available for plant food. Organic acids such as humic, etc., tend to be formed in lands which are very rich in vegetable matter and these acids in concentrated form are poisonous to the growth of plants. The application of lime to such a soil not only corrects this acidity, but liberates a large amount of plant food.

According to Prof. Austed a good soil should be composed of nearly equal parts of the three earths, sand, clay and lime; it should contain a certain quantity of decomposing vegetable and animal matter; it should take up moisture and give it back to the air without much difficulty; it should have depth sufficient to permit the roots of the plant to sink and extend without coming to rock, to water or to some injurious earth; the subsoil should be moderately porous, but not too much so; and in case of need the subsoil should be able to improve the soil by admixture with it.

Prof. Cook thinks that the most valuable marls and those which will best pay the cost of long transportation are those which contain the largest per cent. of phosphoric acid; that the most durable marls are those which contain the most carbonate of lime; that green sands containing but little of either phosphoric acid or carbonate of lime become active fertilizers when composted with quicklime; that marls which are acid and burning from containing sulphate of iron can be rendered mild and useful as fertilizers by composting with lime; that forage crops, clovers, grasses, etc., are particularly improved by the use of marls. Lime, which has been called the "basis of all good husbandry," is probably one of the most valuable and most extensively used of mineral manures. The value of lime and other mineral manures as fertilizers depends much upon their composition, and in this the agriculturist must seek the aid of the chemist. J. L. LADD.

Bay City, Texas.

THE SILO AND HOW TO BUILD IT.

A silo is a convenience which every dairy farmer should have, says the Canadian Commissioner of Agriculture and Dairying. It need not be an expensive structure. It requires to be strong enough to hold corn fodder when cut into lengths of from one half to one inch. It should be fairly close, so as to exclude the air after the ensilage has settled. The main features are strength to resist the outward pressure of its contents, exclusion of air by the construction of the sides and a fair depth of holding capacity, in order to permit the ensilage to settle into a compact mass. Sufficient strength of sides can be obtained in most silos by the use of 2x10 inch or 2x12-inch studs, placed from eighteen inches to two feet apart. A clay or earthen floor is most economical, and as good as any that can be put in.

The inside of the walls of the silo may be finished by a single lining of lumber, nailed to the studs horizontally. The lumber should be tongued and grooved, and dressed on the inside. If each alternate board be allowed to extend at the corners so as to make a lock joint, that will give additional strength to the structure. The corners of the silo on the inside should be filled by the use of a board plank ten inches wide, set on end. The triangular space behind it should be filled with sand or sawdust. Studs 2x10 inch or 2x12 inch, with one ply of sound tongued and grooved lumber, nailed horizontally on the inside, are sufficient for an efficient preservation of the ensilage.

Additions to that method of construction may be advantageous in a few cases for convenience. To build one with the least outlay of cash, the farmer who has some standing timber may get out timbers hewn on one side. These may be put in a mow in the barn and lined on the inside with one thickness of lumber, tongued and grooved, and nailed horizontally. This big bin, or silo, should be constructed with the corners interlocked by every second board passing through and being nailed on the corner post. That effectually prevents the spreading of the silo at the corners. If a portion of the ensilage around the sides becomes frozen, that is more an inconvenience than a loss. It should be mixed with the warm ensilage, from the middle of the silo, before it is offered or fed to the cattle.

A RICH NEW ENGLANDER BUILDS A CITY IN THE WOODS.

We do not know the editor of Pomona Herald, of Rhode Island, but he puts some spicy things into his paper. A recent number contained this leading editorial: "He that builds up his home community establishes a monument for himself that is more enduring than granite."

He also shows himself a true student of Prof. Goesmann in that he apparently follows the rule "when seen make note on" as see the following for mid-winter advice in New England: "No article of furniture should receive more attention than the refrigerator. It should be washed and dried every day."

The following also appears in the same paper about a North Carolina community:

Much has been said about Vanderbilt's great place down South, but it is left for a New Englander to go Vanderbilt "several better." Mr. James W. Tufts, of Boston, Mass., the well known soda water apparatus manufacturer, went down to see what attracted so many Yankees to the Southern Pines, N. C., region. He saw there a town of fine hotels, handsome homes, beautiful farms and profitable vineyards, and inside of ten days after his arrival he had purchased six thousand acres of land near the town. He employed the best landscape engineers, laid the grounds out and then commenced a great work. Hundreds of carpenters and laborers were employed, building roads, parks, electric car lines, lakes, hotels, houses, deer parks, and in fact everything that money could build. This work has been kept up, until today this man has one of the most unique and handsome places in the world; with its opera houses, restaurants, and everything to amuse and interest.

The best part of this work, is that this big hearted man is not doing this solely for his own pleasure, but he is entertaining at about actual cost, hundreds of doctors, lawyers, ministers and teachers, who could not afford to pay high rates for rent of cottages and hotel charges. Mr. Tufts is in no way working this enterprise to make money; he sells no lands or lots. His great pleasure is to draw around him hundreds of Northern people from his native section during the winter months, and see them enjoy themselves and gain health at the same time.

What a happy world this would be if there were more men like Mr. Tufts, who is constantly planning how he can add pleasure to some one else's life, besides himself and family. Pullman built his city for his own financial benefit, Vanderbilt bought his thousands of acres of Southern lands, and built his place for his own pleasure; but Mr Tufts built his Southern city with its handsome hotels, comfortable boarding houses and scores of cottages for the pleasure of the people. In the final day of reaching James W. Tufts, the wealthy New Englander, will loom up as a star of the greatest magnitude.

WHAT SOUTHERN FARMERS NEED.

At the first annual convention of the Cotton States' Association of Commissioners of Agriculture in New Orleans last week, Georgia, North Carolina, Alabama, Mississippi, Louisiana and New Mexico were represented. Commissioner Jastremski, in the absence of Governor Fester, delivered the address of welcome, which was responded to by Commissioner Culver, of Alabama, President Stevens then delivered his annual address.

"For years," said Colonel Stevens, "the farmers of the South have been drifting into a condition of bankruptcy and demoralization. This is not due to sterility of soil, nor to unfavorable climatic conditions. It is not altogether fair to lay the fault of the failure to our people, for, as a class, they have worked industriously, in and out of season, but they have not worked with any fixed purpose of permanent benefit in the end. I have for years been urging the farmers of Georgia to reverse their methods if they would escape the conditions which have resulted from a lack of diversification in planting their crops. The salvation of the people depends upon independence and I urge upon each of you, the commissioners of the cotton growing States, to call upon your people to change their methods of farming. The farming interests has been the subject of much discussion by the press and the people of the South for the past 12 months; so much so that the people of the rural district are seeking information by reading the daily and weekly paper and agricultural journals. This is one of the important channels through which this association must rely in reaching the farming class, by writing monthly letters upon agricultural subjects and questions, to be published once a month in your news papers."

Mr. Stevens said there was no doubt that the South is more prosperous today than at any time within the last 30 years; prices have advanced and the people are more hopeful.

"Tell your farmers," he said, "to make small bills; to buy for cash, if possible; to plant largely for food crops and reduce the acreage in cotton, even below that of last year. The cotton crop of 1899-1900 will barely reach 9,000,000 bales and the average price paid thus far has been 7 cents. But if our farmers go wild again, as they did in 1898, buy everything they can on time, plant the whole earth in cotton, and make a crop of eleven and one half million bales, the country will be ruined, almost beyond hope."

HOME MIXING OF FERTILIZERS

The Progressive Farmer for two or three years past, in season and out of season, has been preaching the value of home mixing of fertilizers. This method, which would save to the farmers of North Carolina many thousand dollars annually, is steadily growing in popularity and the increased prices demanded by the fertilizer trust will doubtless make home-mixing even more popular. The following article from an exchange gives the results of tests of home mixing at all the leading experiment stations of the country and, while long, is not too long, the importance of the subject being considered:

In the battle for the interests of the farmers the Practical Farmer is being ably seconded by the agricultural experiment stations everywhere. In no station in the country has the fight for home home mixing received more hearty support than in the Ohio Station, from which we have just received the second bulletin on this subject. This is a most exhaustive treatise on the whole matter, and goes at length into the elementary information so badly needed by farmers in general as to the exact nature of the materials used in the manufacture of fertilizers and the methods used in the mixing. In this bulletin Prof. Thorne says that if certain "portions of this bulletin seem to some readers to be excessively elementary in character, the excuse must be that the extensive correspondence, following the publication of bulletin 93, has shown that many farmers have not found the directions in that bulletin sufficiently explicit for their needs." This is just what we have all found who have had a general correspondence with farmers on this subject, and the matter cannot be made too elementary until farmers everywhere get a full understanding of the relative importance of the several forms of plant food used and the matters in which each of them are found in commerce. Farmers who have reached middle life now have hardly any of them had the instruction in their school boy days that is common now in the elementary instruction in scientific matters, and things that seem to scientific men the simplest things are often puzzles to men of fair general education. The stations were established for the dissemination of information among the farmers as the results of their investigations, and to make these results plain it is necessary to reduce them to the language of the people. In the experiments made at the Ohio Station, four brands of manufactured fertilizers were used, and each was duplicated by a home made mixture of similar composition. When these were used on corn and each was compared with the unfertilized plats, in every instance the home mixed goods gave better result than the factory mixtures of the same analysis. On wheat the average increase from the factory mixed goods was 9 94 bushels, and the average increase from the home mixed goods was 12 55 bushels. The object was to make a complete duplicate by actual analysis of the factory made goods, and not to make a superior fertilizer, assuming that each was derived from equally good sources. Tankage, or the refuse scraps from the slaughter houses, is largely used by manufacturers as a source of ammonia and is commonly treated with sulphuric acid in the manufacture, and it is properly claimed that this makes its nitrogen as available as that in sulphate of ammonia. But such treatment is injurious and not beneficial to him who would use it in fall as a means of giving nitrogen to the wheat crop, since its solubility will cause the crop to lose it to a great extent during the winter. While the mechanical mixing of the untreated tankage may make a more slowly available product the author of the present bulletin well remarks that "the manufacturer can well afford to pay $6 to $8 per ton for sulphuric acid to be sold again at $20 to $30 per ton." The elementary instruction in regard to the various sources of the nitrogen, phosphoric acid and potash commonly used in the making of fertilizers is one of the most interesting parts of the bulletin to the unlearned farmer, and the table giving the analyses of various materials is one that can be referred to with profit by all who contemplate home mixing. The directions giving the method for calculating the constituents of a fertilizer are important and useful, and we may refer to them in the future. The idea is common among farmers that in mixing the chemicals used for fertilizing purposes it is necessary to use something as a "filler." This is wholly a mistake, for the "filler" is only a worthless adulteration used by manufacturers to reduce the quality so as to make a low priced article, and the buyer of such is simply paying full price for all that is of value in the fertilizer and then pays freight on a lot of adulterant that is of no earthly use to him. He would far better have bought a smaller quantity of the valuable part and left the filler at the factory. But the materials used are always combined with something else, for we cannot use ammonia, nitrogen nor potash in a pure form, but must always get it in some chemical combination. A fertilizer sack seldom if ever contains ammonia, though it may be marked on it, but has nitrogen, the really valuable part of the ammonia in combination with certain other matters such as the refuse of slaughter houses, fish scrap, cotton seed meal, etc. It is shown that a high grade complete fertilizer can be made in Ohio, by buying the materials in small quantities and adding freight to make a formula of 940 pounds for $8 50, and this is the actual cost of the materials used in a ton of factory mixed fertilizer which has been sold at retail for $17 50 plus freight, and as the freight in the above was included, an average of $3 should be added for this item, making the factory goods cost $20 50 and leaving a difference of $12 per ton to pay the farmer for his mixing. As he can mix two or three tons per day, he will make fine wages. The calculations are based on the highest retail rates. It is stated that the farmers of Ohio are buying about 50,000 tons per annum of fertilizers at an average price of $24 per ton. From one third to one fourth of this may be saved by buying the materials and mixing them at home. It is well said that fertilizers can be as well mixed with a shovel on a barn floor as in the most elaborate mixing machine. This matter of home mixing is no new idea. The stations have for years been urging it on the farmers. The Connecticut Station showed that while the average cost of the nitrogenous superphosphates sold there was $30 44 per ton, the value of the ingredients in a ton was $20.71. At another point in the same report it was stated that the average cost of 96 brands analyzed was $34 34 per ton, and the value averaged $24 28. The same station made an analysis of ten samples of home-mixed fertilizers and added $2 for the cost of mixing them. This showed that while the average cost was $29 16, the average value was $29 07, after allowing the farmer $2 per ton as the cost of mixing, a cost far above the actual cost. Thus the home mixed goods showed a lower cost and a higher value than the factory mixed goods, and in no report does the Connecticut Station intimate that there is any more virtue in the machinery of the professional mixer than in the farmer's shovel. The North Carolina Station, the second station established in the United States, gives in its Bulletin 139 the plans and practices of no less than 150 farmers throughout the State who have made a success at home mixing. As we have heretofore shown in "The Cream

[CONTINUED ON PAGE 8.]