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# THE PROGRESSIVE FARMER.

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

Vol. 12.

RALEIGH, N. C., JUNE 22, 1897.

No. 20

## THE NATIONAL FARMERS' ALLIANCE AND INDUSTRIAL UNION.

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Vice President—C. Vincent, Indianapolis, Ind.  
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PAPERS.  
Progressive Farmer, State Organ, Raleigh, N. C.  
Caucasian, Raleigh, N. C.  
Mercury, Hickory, N. C.  
Sattler, Whiteoaks, N. C.  
Our Home, Beaver Dam, N. C.  
The Populist, Lumberton, N. C.  
The People's Paper, Charlotte, N. C.  
The Plow-Boy, Concord, N. C.  
The Vestibule, Wadesboro, N. C.  
Carolina Watchman, Salisbury, N. C.

Each of the above-named papers are requested to keep the list standing on the first page and add others, provided they are duly elected. Any paper failing to advocate the Ocala platform will be dropped from the list promptly. Our people can now see what papers are published in their interest.

## AGRICULTURE.

The price of wheat is advancing. Farmers should raise more geese. The proper study of the farmer is his farm.

Level culture is best for garden crops, say experienced gardeners. The educated brain and the trained hand "add dignity to labor."

Sheep can find food in places where other animals would go hungry. To get behind the season means some badly done work in catching up.

Cucumbers for pickles need not be planted till about the 25th of June. Secretary of Agriculture Wilson is attempting to destroy hog cholera.

Now comes the fight against the weeds. The battle is at its highest now. In every department of farming, regularity and system are essential to success.

The feed and care necessary to raise a poor horse costs as much in every way as it does for one of the best. The garden patch should do double work. Have it rich and clean, and make the most of it grow two crops.

For profit, try the strawberry. Few crops pay so well. Every family should have enough for home use, and the surplus is almost always salable.

Much manure is wasted around our barns because they are not drained well. You will do well to examine yours at the earliest opportunity.

Ill success follows good work, and both are discouraging. Beginning in season and not attempting too much, insures best results under the circumstances.

For thousands of years, says an exchange, the farmer has been working with his hands and others have to a too great extent reaped the reward for his toil. Now he is beginning to work with his brain, with the result of reaping the reward himself.

plants were covered with tubercles, or warty knots, and an examination of these tubercles, when cut open and placed under a powerful microscope, showed that they were infested with myriads of microscopic plants called micro-organisms, and very similar to the bacteria that cause milk to sour, wine to ferment, yeast to rise, and form tubercles in the lungs of consumptives. Later study proved that these micro-organisms take the nitrogen from the air and fit it for the use of the growing legumes. Just how this is done is not yet understood.

At the Louisiana Station, soil that would not grow alfalfa was inoculated with the organisms necessary to form root tubercles on alfalfa by sowing upon it finely pulverized soil taken from a field in which alfalfa was growing vigorously, and thereafter alfalfa made a vigorous growth in the inoculated plot.

Further tests at that station show that possibly each species of plant and certainly each family of plants has its own peculiar organism. For instance, organisms from alfalfa would not produce tubercles on roots of cow peas, nor would those of cow peas produce tubercles on alfalfa. In like manner it was found that vetches, lupines, peanuts, etc., would not exchange organisms with each other nor with clover or peas. Still, microscopic examination of these organisms shows them all to be very much alike in size and shape.

But these tests confirm tests made in Germany, and prove that a soil which fails to grow clover, peas, or vetches, may be made to do so by sprinkling it with finely powdered soil taken from where vigorous plants of the same kind are growing. But soil from a pea field will not inoculate a field with the proper bacteria to grow clover.

German scientists have gone a step beyond this, and have produced these bacteria in artificial cultures in the laboratory, and have put them on the market at so much per quart or per pound, to be sown on the farmer's fields, instead of applying nitrogen in the form of nitrate of soda, dried blood, or oil meal. Sow the bacteria and they will gather your nitrogen from the air. The general name given to this new agricultural yeast, is "Nitragin," and the purchaser must be sure to buy the clover brand for clover, the pea brand for peas, etc.

Another important test made at the Louisiana Station was to determine the proper depth for planting to secure the most abundant formation of root tubercles and hence the most rapid multiplication of these nitrifying organisms. Cow peas were planted 1, 2, 3, 4, 5, and 6 inches deep, and after 8 weeks' growth the soil was soaked and the roots washed out by applying a strong jet of water from a hose. It was found that the surface roots contained the largest number of tubercles, and 2 or 3 inches depth seemed to give most surface roots. Below 3 inches, the greater the depth, the fewer surface roots, fewer tubercles, and less vigorous the plants. Roots were traced for 6 feet from the stem and nowhere more than 3 or 4 inches below the surface. While these were covered with tubercles throughout their length, the tubercles were most abundant near the stem. Roots striking straight down had no tubercles below the first 10 or 12 inches. Other leguminous plants growing in adjoining farms were examined with the same result. It was found that the number of tubercles was much affected by the character of the soil. They were more abundant in sandy soil than in clay soil, and more abundant in deeply broken soil than in that plowed shallow.

## WEEKLY DIGEST

Of Experiment Station Bulletins.  
No. 75.  
SHEEP SCAB.

This is the subject of Bulletin 38, of Colorado Station. Scab in sheep, itch in man, and mange in other animals are all caused by minute animal parasites, or mites that feed upon or just below the skin. They are spider like, having six legs. Though of the same family, the scab, itch, and mange mites are all of different species.

Sheep-feeding having become a most important industry in Colorado, the Station of that State has been studying and experimenting with various preventives and remedies for scab for a year past.

Scab usually begins along the back of sheep, and the presence of the trouble is indicated by efforts of the sheep to pull the wool from the infected spot to enable it to relieve the intense itching by digging at it with its teeth. Unless given immediate attention, the mites soon spread to other parts. But fortunately, they do not scatter, but spread in solid mass, so that only the infected spot need be treated. In later stages, the infected spot is covered with a sort of dandruff, and later still scales or scabs form, the mites keeping in the wool about the edges, where they lay their egg. They may be seen by the aid of a good hand magnifying glass. A few cling to the locks of wool pulled out by the sheep, and thus spread to others. The mites have no wings, and can travel but a short distance during their brief life time. This period is so short, that it is impossible for those in the manure and soil of a corral to live over from spring till fall or from fall to spring. It is found that 4 or 5 degrees below zero kills both eggs and mites. Hence, an infected corral may be purified by leaving it unoccupied over winter.

To prevent scab, be careful never to introduce a scabby sheep into the flock, and dip just after shearing, each year, when there is no wool to interfere. This kills ticks and other parasites as well as scab mites.

Of 27 kinds of sheep dip used, the cheapest and most effective was a home made dip made by mixing 8 pounds first class lime and 32 pounds sulphur in a little water and boil for 2 hours and then add enough water to make 100 gallons, and use when cooled to 110 degrees. Dip again in two weeks to kill the mites hatched since first dipping. Dipping costs 5 to 7 cents per head, including cost of making up loss of flesh from the set back caused by dipping.

The same bulletin states that the trees of pear, apple, plum, and cherry, in the mountain districts of Colorado have their foliage rendered pale and sickly by attacks of the brown clover mite. The remedy is to wash the limbs and stems and particularly crotches, during late fall with kerosene emulsion or whale oil soap, one pound dissolved in a gallon of water.

The codling moth is also very destructive to the apple crop of Colorado. Spray just before the blossoms open and just after they fall with Bordeaux mixture in which Paris green has been stirred at the rate of 1 pound to 160 gallons.

PRODUCE YOUR OWN NITROGEN.  
Of the three most essential fertilizing elements—nitrogen, potash, and phosphoric acid, nitrogen costs more than twice as much per pound as either of the others. Yet nitrogen exists in great abundance in the atmosphere, and the scientists are about to master the problem of capturing this atmospheric nitrogen and utilizing it in the growth of farm crops.

Bulletin 46, of Louisiana Station, describes some very interesting experiments in this line at that Station. It has long been known that the leguminous (podded) family of plants, such as the clovers, peas, beans, vetches, lupines, etc., possessed the power of improving the fertility of the land on which they grow, but just how they did so was not known till recently, and it is not yet fully understood. But it is now known that these plants store up in their roots, stems, and leaves large quantities of nitrogen, phosphoric acid and potash, getting the nitrogen from the air and the potash and phosphoric acid largely from the subsoil. When such a crop, or even its roots and stubble, is left on the land to decay, the fertilizing elements drawn from the air and subsoil are thus transferred to and incorporated with the soil.

In recent years it was discovered that the roots of vigorous leguminous

plants were covered with tubercles, or warty knots, and an examination of these tubercles, when cut open and placed under a powerful microscope, showed that they were infested with myriads of microscopic plants called micro-organisms, and very similar to the bacteria that cause milk to sour, wine to ferment, yeast to rise, and form tubercles in the lungs of consumptives. Later study proved that these micro-organisms take the nitrogen from the air and fit it for the use of the growing legumes. Just how this is done is not yet understood.

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One particular fact brought out by these tests is, that while each kind of plant has its own peculiar bacteria, fertile soils seem to possess at least a few of nearly all kinds. Leguminous plants not native to this country, when planted in our soils, form tubercles, though no similar plants be growing anywhere in the same State.

Where only a few of the desired kind of bacteria are found, these may be multiplied as the housewife multiplies her yeast. These experiments also confirm the old teaching that the cheapest way to fertilize land is to apply potash and phosphoric acid to a crop of peas, clover, or other legumes, and let this preparatory crop gather nitrogen from the air. If inoculated soil or cultures be sprinkled in the drills, this preparatory crop will be the heavier and more effective. Instead of turning the whole crop under, it usually pays best to cut

## DOGS MAY NOT LAND IN GREAT BRITAIN WITHOUT A LICENSE.

The Secretary of Agriculture is in receipt, through the British Ambassador and the State Department, of a copy of the Importation of Dogs Order of 1897, issued last month by the British Board of Agriculture, under the Diseases of Animals Act of 1894 and 1897. The order in question provides that from and after September 15, 1896, dogs from any other country shall not be landed in Great Britain without a license obtained previous to the landing. Applications for licenses must be made to the Secretary of the Board of Agriculture, 4 Whitehall Place, London, S. W. Applications must be accompanied by a statement signed by the owner of the dog, or by his agent authorized in writing for this purpose, containing information as to the country from which it is proposed to bring the dog, the port where it is proposed to be landed, the place to which it will be taken after being landed for the purpose of undergoing such detention and isolation as the board may require, and the route by which it will be moved to such place. The statement must also contain a full description of the dog, stating as far as possible for its identification, particulars of its age, sex, and color. The order provides that the board may, in granting a license to land a dog, impose conditions prescribing and regulating the detention and isolation of the dog by and at the expense of its owner, at a place to be provided by the owner and to be described in the license, or for the regulation of the movement of the dog to this place of detention.

Local authorities are everywhere earnestly invited to assist the board by making this order as widely known as possible, and ship owners are invited to cooperate in this matter, by instructing masters of vessels to warn passengers, in order to prevent as far as possible the shipment of dogs the owners of which may not have obtained the necessary license.

## TRUE ECONOMY IN FARMING.

Correspondence of the Progressive Farmer.  
If there is any one special thing that the average farmer tries to economize in, it is generally in fertilizers. It is not a question with him how much he should buy to use on his crops, but how little he can get along with and still make an average crop. Now while economy in its own place is just and proper and highly to be commended when properly directed, yet there is an economy that tends to waste, and in nothing is this fact more positive than in the fertilizing question. It is a fact that we cannot gainsay, that the farmer generally grudges the paying of his fertilizer bill more than all his other bills put together. Now why should this be so? If he would only reason out the matter and take notes of past results from judicious fertilizing, he would find the money spent in that way is the money that brings him the largest returns of all his various items of expenditure. It is a well known fact, that everything else being properly conducted, the larger the expenditure along this line, the more profit is made; of course I am referring here to the judicious use of the proper fertilizers for the different varieties of crops grown on the farm.

For the observing individual, who takes the trouble to be on the lookout for object lessons along these lines, there are absolute proofs to be had everywhere that we, as a farming class, could use a much larger quantity of fertilizers than we do to decided advantage. Take a corn crop, for instance. The average Southern farmer thinks he is doing well if he uses from two to three hundred pounds per acre of any ordinary brand of corn fertilizer. Now practical experience, as well as a good deal of general observation, convince me that at least three times that amount will give much larger returns in proportion, and it is the same all through the range of crops grown. The objection will be made, that the average farmer cannot afford this extra expenditure, but if he finds this to be so, he had better cultivate few acres and let the balance of his land take a rest for a season. By doing this, he would be economizing labor, and the return at harvesting would be a good deal more satisfactory. This object lesson was very forcibly impressed upon my mind during a visit I had the pleasure of paying a short time ago to the Experimental Farm of the State of North Carolina, located at Southern Pines, in

that State. The object lessons in fertilizing in the different combinations of the three essential elements, as well as in the various quantities with their apparent results, were worth going a long way to see. I may mention in passing, that this experimental farm was promoted through the enterprise of the North Carolina State Horticultural Society, and is under the direct management of the State Experiment Station at Raleigh. This in itself insures the careful conducting of all experiments carried on at the farm, and when I say that the men in charge are experts in their various callings and in love with their work, we can readily understand the incalculable benefits this experimental farm will be to the farmers and fruit growers of that State. This is without doubt a model farm, and one of the most perfect of its kind in the world, and I wish every farmer and fruit grower in this broad land of ours could pay it a visit; they would find enough object lessons there to keep them thinking for many a day to come. The entire farm is laid off in plots of one tenth of an acre each, and the different plots are all treated differently. One plot, for instance, gets no fertilizer whatever, another gets a certain quantity of phosphoric acid and potash, and another a certain quantity of the three essentials (nitrogen, potash and phosphoric acid). Other plots are treated to double quantities and some to treble quantities, while still others are treated with green manuring. The beauty of the whole thing is, that one don't require a guide to tell him all these things, for everything is put on placards, so that he that runs may read, and the results are apparent to the most casual observer. But the certain benefits derived from using plenty of fertilizers are apparent wherever this is tried, and with the gratifying results obtained from the liberal use of phosphoric acid and potash proves beyond a doubt that these two elements, particularly potash, are what bring the farmer and fruit grower the best returns for his money. And when we consider the great agricultural depression that effects us all, we can happily turn to these experiments and find out a certain way to help at least part of this depression by using potash and phosphoric acid with a more liberal hand.

Space forbids me to enlarge on this subject just now, but I shall return to it soon.  
C. K. McQUARRIE,  
De Funiak Springs, Fla.

## INTERNATIONAL EXPOSITION IN HOLLAND.

The Secretary of Agriculture is in receipt, through the Department of State, of a programme for a National and international exposition to be held at The Hague, Holland, from the 18th to the 26th of September, 1897, to celebrate the fiftieth anniversary of the Dutch Society of Agriculture. International competition is invited in the horse classes, poultry, agricultural machinery and tools, of the United States are especially interested. Applicants must submit descriptive lists of their proposed exhibits to the Secretary of the Society, Mr. P. L. F. Woldeck, Loosduinen, Holland, before August 1, accompanying the lists in the case of horses and poultry, with a fee of one florin for each stallion to be exhibited, and one florin per head for other horses, with or without foal, and for each exhibit of poultry a fee of a half florin.

Secretary Wilson gives publicity to this matter by special request of the minister of the Netherlands at Washington.

## HARROWING CORN.

It is surprising that so large a number of farmers seem to think it entirely out of the question to harrow corn after it comes up on account of the supposed danger to the corn plant. They seem to think that because the cultivator is used to destroy weeds the harrow will tear up the corn. This is entirely erroneous, as all will testify who have followed the practice. There is no part of the working and care of corn that will pay a bigger return on the investment than three or four harrowings of corn in its early stages. The time that the greatest injury can be done to the corn by the harrow is just as the leaves are appearing above the ground, when it is well to keep off. This work should also be done with a light harrow, and may be fully eight inches high, with great value to the crop if gone over every three or four days. The young weeds are making the greatest efforts during that time and are easily destroyed. The frequent stirring up of the mulch gives your corn a greatly increased quantity of plant food in the most available condition possible, and a plant, like a young calf, if well started, has its chances of early and vigorous maturity very greatly increased, says the Pennsylvania Farmer.

Some farmers never seem to think of saving manure in summer; and yet with proper care as much can be saved during summer months as during those of winter. Suppose you think somewhat further along this line. Perhaps it wouldn't be unprofitable. We have noticed lack of attention to this among many North Carolina farmers.