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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.

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PAPERS.
The Progressive Farmer, State Organ, Raleigh, N. C.
The Farmer, Raleigh, N. C.
The Agriculturist, Raleigh, N. C.
The Ruralist, Raleigh, N. C.
The People's Paper, Raleigh, N. C.
The Flow-Boy, Wadesboro, N. C.
The Watchman, Salisbury, N. C.

AGRICULTURE.

WITH TAR HEEL FARMERS.

Some Items for Them and Some About Them

Watermelons were sold in Statesville on the 25th.

It is said that the farmers of Western North Carolina have harvested one of the best crops of tobacco for many years.

The N. C. Agricultural Society has elected Col. John S. Cunningham President of the Society, vice R. H. Battle resigned. Hon. John Nichols is still Secretary.

Mike Russell, of Union county, has and uses a set of harness made 43 years ago. The Winston Republican suggests that it is probably the oldest set of harness in use.

Our old friend, Mr. E. J. Davis, of Shanghai, is 74 years of age and can pick 100 pounds of cotton every day. He is one of the county's sturdy citizens.—Shelby Star.

Davidson Dispatch: Frank Hedrick of Silver Hill township, raised 1100 bushels of corn and 230 bushels of wheat on less than 40 acres of land this year. The land is of very thin soil.

The Cleveland Star says: Jesse Hord of No. 5 township is 84 years of age and remarkably strong and active. He picked 104 pounds of cotton one day last week and wasn't in the least fatigued.

The Ripple says that A. Douglas, of Yadkinville, raised a beet this year that measured 3 feet in length, 15 inches in circumference. It weighed 14 pounds and grew 2 feet and 3 inches above the ground.

The Landmark says that a Statesville cotton buyer, who has been buying cotton on that market for many years, says a large number of the farmers of this section are holding their cotton for higher prices, as little has been

sold there. The fact that so many of the farmers can hold their cotton argues, this buyer thinks, that they are in better condition than formerly.

Iredell county has been boasting of a corn stalk which measured 9 feet 3 inches from the ground to the ear. The Hustler man is on his mettle and says that Wilkes produced one 10 feet from the ground to the ear, the entire length being 17 feet and 10 inches.

Our brother editor of the Morganton Farmers' Friend, is a pretty good fellow. He says that Thompson Gilliam, has a cow which gives butter without churning. "The good wife simply goes to the morning's milk at sunset and removes from its surface the butter she needs for tea." Fact, this.

Haywood county's apple interests are getting to be something worth talking about. There are about six orchards now that will average their owners \$5,000 per year. A good apple orchard in this country is better than an orange grove in Florida. The crop never completely fails here.—Waynesville Courier.

We learn from the Southern Planter, of Richmond, Va., that Mr. G. J. Rowland, Jr., of Prince George county, Va., has this year, notwithstanding the recent drouth, raised one of the finest crops of pumpkins seen for years. The variety grown was the Virginia Mammoth. Three of the pumpkins weighed respectively 46½ pounds, 46½ pounds, and 41 pounds—a total of 134 pounds. These pumpkins are excellent food for hogs and a great weight of food can be raised on an acre of land.

Joseph Meehan, writing in Garden ing, says: "Let anyone who has acorns or hickory nuts or walnuts on hand, place them at once in slightly moist soil, keeping them in it till the ground is in condition to work in the spring, and the seeds will be in the best possible condition. Get a box and mix the seed and soil together, placing the box in some cool place free from frost. Both oaks and hickories are hard to transplant, so are walnuts. Amateurs who want but a plant or two of a kind, would perhaps find the placing of the nuts where they wish the trees to be, as satisfactory a way as any. Two or three could be placed together, all but the strongest to be removed, should more than one grow."

A GREAT BONANZA WHEAT FARM

It is difficult to present the idea of the bigness of these farms to the person whose preconceived notion of a farm is a little checker board lying upon a hillside or in a valley. Seven thousand acres present the average bonanza farm. Generally these tracts are not divided. Yet distances across fields are so great that horseback communication is impracticable. Crews of workmen living at one end of the farm and operating it may not see the crews in other corners from season's end to season's end. And in busy seasons it is found profitable to feed the hands in the fields rather than to allow them to trudge through the hot sun to the dining halls for dinner. The dining halls—it will be explained later—are scattered over the farm at convenient points. They are frequently five or six miles apart, and many a noon finds the harvesting crew two miles from its hall. This illustration may give one some sort of a rough conception of the bigness of these farms. Here is another point of view: Averaging twenty bushels to the acre—as many farms will this year—the total number of bushels in a crop on a bonanza farm would be 140,000; putting five hundred bushels of that crop in a freight car, and allowing forty feet to the car, the train which would haul the crop from the farm would be two miles long, and if it were to come charging down Fifth Avenue and Broadway, in New York, the "rear end" brakeman would be craning his neck from the caboose to catch sight of the Vanderbilt mansion while the engineer and fireman were enjoying themselves bumping the cable car down by Union Square.—Wm. Allen White, in the November Scribner's.

A farmer says: For ten years I have made it a practice to give every one of my growing animals at least one heaping tablespoonful of flour sulphur in the feed twice a week, including horses, cattle, sheep and swine, and during that time I have not had a diseased or sick animal. When fattening cattle, sheep or swine, however, I increase this to three times a week. A little of it occasionally is also good for poultry. When feeding sulphur sheller should be provided for all the stock. They should not be permitted to get wet.

WEEKLY DIGEST

Of Experiment Station Bulletins. No. 93.

(Prepared by J. Linn Ladd, and condensed for readers of The Progressive Farmer.)
HOW FARMERS MAY EXPERIMENT.
In our general digest of fertilizer bulletins last week we omitted No. 129 of the Ithaca (N. Y.) Station, one of the most important of the lot. It gives directions for experiments to be conducted by each farmer to determine what fertilizing elements his particular soil most needs. This test may prevent his wasting money for elements which his soil does not need.

Every crop is mostly made up of water, carbon, lime, nitrogen, phosphoric acid and potash. If the crop cannot get enough of any one of these foods it will not thrive, no matter how much of the others it may have. All know that if a crop suffers for want of water it is cut short. A deficiency in supply of any one of the other elements named will also cut it short. On the other hand, if there is an excess of any one of them it is just as useless to supply more of it as it would be to water a crop during a wet spell, though not as harmful, of course.

Except in irrigating countries, the supply of water to crops is beyond man's control, and they get their carbon in abundance from the air. Most soils contain enough lime. Therefore, of all the food required by growing crops the farmer needs to supply only nitrogen, phosphoric acid and potash, and when he buys fertilizers these are the things he pays for. If his soil already contained enough of either, it is a waste of money to buy more. It may here be remarked that, except in a few special cases, he should never buy nitrogen as a fertilizer. It costs two or three times as much per pound as either phosphoric acid or potash, and by feeding cotton seed meal, bran, linseed meal or gluten meal to stock he will get their full worth in meat, milk, wool, butter, etc., and will also recover their rich stores of nitrogen in the manure. Or, by growing peas, clover, vetch or other podded plants that gather nitrogen from the air, he may get his nitrogen free of cost. If his soil needs phosphoric acid or potash, let him buy these in the form of acid phosphate and muriate of potash—their cheapest form.

How shall he find this out? One man says, "Have his soil analyzed by a chemist." But this is of little use. It is well known that chemical analysis shows that the first foot in depth of almost any soil contains from 50 to 500 times as much phosphoric acid and potash as any crop needs. And yet many such soils do not yield good crops unless supplied with phosphoric acid and potash. Why? Simply because what they contain is so combined with other chemical elements in the soil as to be insoluble in water, and the roots of plants can use only such food as is dissolved in water. Such things as salt, lime, acid, etc., sometimes benefit soils by rendering their natural stores of plant food soluble. Humus or decaying vegetable matter helps in the same way, besides rendering a soil warmer, more moist and porous.

The only way for the farmer to find out what fertilizing elements his soil needs is by actual test—the way in which we have learned pretty much all we know about agriculture. It is not an easy road to learning, but to a thinking man it is an interesting and pleasant one.

Let the plots be wide enough to contain five or six rows of the crop and long enough to extend across the field; each one will then take in part of the strips of all kinds of soil, if the soil is not uniform. Let all plots be of the same size, broken alike and on the same day, planted alike and on the same day and with the same crop, and always cultivated alike and on the same day. Then, whatever difference may appear at harvest time may be fairly attributed to difference of fertilizer used. As plants often send their roots across middle to feed on the fertilizers in the next row, it is well to have each plot wide enough to contain five rows, and ignore the two outside rows, gathering and measuring the three middle rows of each plot for comparison of results.

Have nine plots, numbered 1 to 9. On No. 1 apply stable manure; on No. 2 muriate of potash at the rate of 200 pounds per acre; on No. 3 nitrate of soda at the rate of 200 pounds per acre; on No. 4 both muriate of potash and nitrate of soda at the same rate, 200 pounds each per acre; on No. 5 no fer-

tilizer; on No. 6 superphosphate at the rate of 400 pounds per acre; on No. 7 superphosphate and muriate of potash at the rate of 400 pounds of the first and 200 pounds of the second per acre; on No. 8 superphosphate, muriate of potash and nitrate of soda at the rate of 400, 200 and 200 pounds per acre, respectively; on No. 9 superphosphate and nitrate of soda at the rate of 400 pounds of the first and 200 pounds of the second per acre.

At harvest time gather the three middle rows of all plots on the same day, measure or weigh them separately, keeping a careful memorandum, and then study this memorandum. It will tell you how each of these three elements used separately, or any two, or all three combined, have affected the crops, as compared with stable manure and also as compared with the plot that received nothing.

If the nitrate of soda has been of much benefit, then your soil needs nitrogen and you should grow it or secure it in manure as above indicated. If greater accuracy is desired and the experimenter is deeply interested he may have two or three sets of nine plots each, as above, and average the results of both or all three plots of the same kind and then compare these averages.

QUANTITY TO THE ACRE.

Repeated experiment has proved that the practice of applying large quantities of manure to the acre on a limited acreage, making it necessary to leave much of the land unmanured, does not pay. Not a few farmers never apply less than twenty tons of stable manure to an acre, saying that they prefer to do well what they do, and let the remainder of the land take its chances. Twenty tons of manure on one acre, plowed under for spring crop, makes the soil richer for years—no doubt about that—but it will not improve the productive power of a farm nearly so much as the same amount of manure used as top dressing on three acres, provided clover is grown with this supply of plant food. It is poor farming to keep up a few acres near the barn with the entire supply of stable fertilizer and let thin fields fail to make heavy sods. Manurial crops are the chief dependence on a majority of farms, or should be, and enough farm manure should be used to assist thin soils wherever found, so that all the fields may increase their supply of vegetable matter and be permanently improved, and then any additional supply can be safely used to enrich the pet field from which one wants a banner crop. Granting that there are exceptions, it is the rule that manure should be kept near the surface of the soil, should be applied more frequently and less heavily, and should be used to insure a growth of some fertilizing crop.—David.

WAYSIDE GATHERINGS.

Large pieces of old sod form the very best winter protective material when obtainable. These heaped about the roses will protect the most tender from severe freezing, and they come out in the spring in splendid condition. It is just as good used about any other hardy plant, says Vick's Magazine.

Soot from the kitchen chimney, especially from a wood fire, is invaluable in cultivation of flowers. Rich in ammonia it stimulates and deepens the color of flowers. Used as an insecticide it is equally effective in destroying and removing the pest on account of the creosote contained in it. Soot from hard coal exclusively is of less value, still it is worth saving.

USE BUSINESS METHODS.

One great drawback to successful farming is the lack of business methods. If a man will study the characteristics of his soil and climate and grow such crops as are best adapted to prevailing conditions; if he will be methodical and give as much attention to details as is necessary in almost any other line of business, he will succeed, if the elements of success are within him. There is much in the man and in the way he goes at a thing.—The Epitomist.

If you will take one cat by himself and pinch his tail he will scratch and bite your hand. But take two cats and put them side by side and pinch both their tails at the same time and they will bite and scratch each other. Pincrocy has learned this trick. So it gets the people arrayed in the two old parties and then it pinches their tails and they fight each other. Like the cats they never turn to fight the hand that is pinching them.—Kaufman Leader.

POTATO CULTURE IN MICHIGAN

Correspondence of the Progressive Farmer.

In looking over THE PROGRESSIVE FARMER it occurs to my mind that it may be made a medium of valuable knowledge to its many readers engaged in tilling the soil. While it is largely devoted to politics, reform and Alliance matters, there appears no reason why it may not be an "experience meeting" on methods and results. There is a wide variety of methods in practical farming. No one knows it all. Each one may learn from others. Surely the methods as to soil, fertilizer, seed, time of planting, tillage, harvest and marketing cotton, tobacco, truck farming and other crops, is not the same in all parts of the South, nor even in all sections of North Carolina.

As a starter, I will give a discussion of potato culture in this part of the North, Michigan.

It is quite a business in Oklahoma, Lapeer, Genesee and adjoining counties situated in the center of the lower peninsula.

A few early potatoes are usually planted in the garden for home use, but the yield of early potatoes is so very small that the farmer cannot compete with those grown farther South. Usually they mature just as the market price is broken by the rush of potatoes from the Ohio Valley, and shipments to the cities do not pay.

For main crop such standard varieties as the Burbank, Empire State, Green Mountain, Rural No. 2, Hebron, &c., are chosen. The ground is fitted for planting about June 1st to 10th. All varieties of soil are utilized from the gravelly loam of Oakland hills to the muck swamps and pine sands of Lapeer and Genesee, though clay is usually avoided as too uncertain in results.

Clover sod is good; corn stubble is often used. The better class of farmers, those who make money and have a plenty of tools, turn the furrow with a three-horse plow, follow with roller pole drag leveler, and cutting the soil thoroughly with spring tooth harrow and disc cultivator. The ground being well pulverized, the ground is marked for planting. Some use a shovel plow to make light trenches, some use a one-horse cultivator with the one wide flanged center tooth, some have a home-made marker, a one-horse tool with shafts and three legs that make two shallow trenches at a trip, while a few have regular potato planting machines. A few hand and foot planters are in use—one man power. The ground being marked in rows about three feet apart, one or more follow with a bag of seed cut two to four eyes to the piece, and drop one piece in a place fifteen to eighteen inches apart in the drill. These are followed by a man and horse with the cultivator, having two outside teeth only, set so as to throw a ridge of soil over the seed. As the man drops the piece of potato he steps on it, thus pushing it into the dirt where the horse doesn't disturb it while walking in the drill furrow.

Some farmers run a roller lengthwise over the rows if the weather is dry, but usually the field is left until the potatoes are well out of the ground. The cultivation is nearly all by horse power, and is quite thorough. If needed, the best farmers go through once, hoeing and pulling the weeds in the drill row. The fight with bugs begins early and is carried on with Paris green.

Many go through the field and knock the bugs off into a pan of water with kerosene oil on it. Some take a pail of water with a spoonful of Paris green stirred in it on the arm and go through dabbing a whisk broom in the solution and shaking it over each hill. Some use a hand spray pump; the larger producers have a barrel on a cart and run by horse power.

The crop being planted late is usually caught by the frost with the tops still green. After being cut by frost, the potatoes are left in the earth two to four weeks to ripen, else the skin is easily torn in handling. In harvesting the crop the extensive growers with 25 to 100 acres will use a potato digger, usually. Others use hooks or forks, throwing two rows into one.

At this season, of year there is danger of frost, and a part of the crew will begin picking up after noon. For this purpose, a horse and stone boat having eight or ten baskets or crates, is driven between the rows, the baskets being filled from both sides. The load is drawn to a pit conveniently located for the day's work. In these pits from 25 to 200 bushels are placed, covered with straw and a thin coat of

dirt. Later, after the potatoes have done "sweating" and before winter, they are moved to the cellar; shipped if the price is good, or covered deeper for winter.

The crop is a lottery. Two years ago last spring the price rose to nearly 50 cents per bushel, dropped swiftly day by day to nothing. That was a dry season, but the crop yielded wonderfully. Many held over until spring. When the pits were opened and the markets flooded, potatoes couldn't be given away. Thousands of bushels rotted in the pits. The next season was another immense crop. Yields of 400 bushels to the acre were not uncommon. Lots of potatoes were not dug at all. Last spring the price started in at 6 cents; gradually rose to 12; and, when the Southern floods destroyed the plantings in the South, jumped to 25 cents in a week. I have known the price to start at a shilling, run up to 50 cents and fall to give away, in a couple of months.

Last spring many were discouraged and quit. The State was 33,000 acres short. The season was disastrous to the crop. The bugs were the worst in years. The frequent showers washed the poison off and many fields were practically ruined. The best yielded about 100 bushels per acre. But the price was good—started at 40 to 45 cents and fell to 35 cents. Many hold the crop believing it will be 50 to 75 cents in the spring.

DAVIDSON, MICH. A. BOREAN.

BERMUDA GRASS.

Bermuda grass should never be allowed "to get a hold" upon a farm. When once it does, then is the tug of war. In a recent issue of the Country Gentleman, James Voorhees, of Indiana, writes:

Bermuda grass is my victorious enemy. I first moved on the enemy's works at Fresno, Cal., where I have a tract of 20 acres adjoining the town. This was 12 years ago, and I have been crowded back, inch by inch, ever since, anxiously looking for "Blucher" to come up and save the day.

The grass was brought on the place by my predecessor for a lawn in front of the house, and at that time its pernicious qualities were unknown. It is simply a humbug as a lawn grass, for it is of a dirty brown color from November to May, and we have no snow to cover it at Fresno. It is also impossible to make hay out of it, for it is only a mass of roots, so intertwined and interlaced as to make a thick, solid mat over the ground. In time this mat becomes so firm and hard as to defy the plow, unless four or more horses are attached thereto, and even then the work is slow and exhausting.

I chopped out enough of the matting with an ax to make me a very nice, cool cellar, with walls 4 feet in thickness all around. The blocks of matting were oblong, about 5 by 12 inches, and about 6 inches thick, and were laid in the walls of the cellar without plaster or cement of any kind. This was in 1888, and the cellar is still as good as new. At this time I was verdant enough to suppose such drastic measures would exterminate the grass on the portion from which the blocks were removed, but it only temporarily retarded its growth.

It is not only practically indestructible, but it spreads everywhere, making it perhaps the greatest pest ever introduced into the United States. A public highway borders on the lawn, in front of my place, and plows and road scrapers carry along roots of the grass, so that the road is bordered with the stuff, in spots, for long distances each way. These spots, in their turn, send out their shoots and tendrils into the farms adjoining the highway, and thus the mischief is ever on the increase.

From my experience, I am satisfied that where air can be excluded from it, it will die, but the tug of war is to exclude the air. Constant application of manure will exclude the air, but it takes an immense quantity of manure, for the first applications make the grass grow more luxuriantly. Some of the Fresno farmers say it can be killed off by constant plowing, day after day and week after week, during our long, dry summers, and perhaps it can, if the children and the children's children will keep up the work. In this climate, with its summer rains, I am satisfied that plowing would cultivate rather than destroy it.

As a feed or pasture also, the grass is a delusion. Live stock will eat it sooner than starve, but where they are at liberty to seek other food they only graze on it for an hour or two for a change. It is not to be mentioned in the same breath with alfalfa, that prince of grasses, yet it will kill off alfalfa and sweep the soil clean of all vegetation except itself. If it did not spread with such facility, the pest would really be useful in a schoolyard, for no amount of tramping affects it, and it also grows well on alkali land where no other vegetation will thrive. As it cannot be confined, however, to where it is wanted, it is a very mixed blessing anyway.

You will conclude I am not very much in love with this grass, and I hope the Country Gentleman will fight against its invasion from the West. STEUBEN CO., IND. JAMES VOORHEES.