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

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

"I am standing now just behind the curtain, and in full glow of the coming sunset. Behind me are the shadows on the track, before me lies the dark valley and the river. When I mingle with its dark waters I want to cast one lingering look upon a country whose government is of the people, for the people, and by the people."—L. L. Polk, July 14th, 1890.

EDITORIAL NOTES.

Only 20 cents till Nov. 10th.

The Populist convention in the Fifth Judicial district meets on Friday, September 16th, and not on Thursday, 15th, as previously stated.

THE PROGRESSIVE FARMER will be sent from now till Nov. 10th—after the election for only 20 cents. Send us a club. This means you.

New subscribers under our 20 cent offer are coming in daily by the score. Bro. J. P. Tucker, of Kinston, sent a club of 31 one day last week. Let every one who reads this notice send a club at once. This is important.

We wish to call attention of our farmer readers to two valuable papers in this issue: "Water as a Source of Disease," and "How to Deal With the Negro." Time spent in carefully reading these articles will not be wasted.

We did not at first reply to the Biblical Recorder's query as to the "two parties in fusion that laid designing hands upon the N. C. College of Agriculture and Mechanical Arts" for fear Bro. Bailey would accuse us of attempting to injure his character. But as he repeats the query in the last issue of the Recorder, he compels us to give the facts in the case and we hope he will be fair enough to publish them in the Recorder.

Bro. Bailey saw so many floating mines around him that his vision was affected and he could hardly see anything else but floating mines. Accordingly he said that we were in danger of being blown up by a floating mine and this mine was the fact that "two parties in fusion laid their designing hands upon the North Carolina College of Agriculture and Mechanical Arts."

Stand still, Bro. Bailey, and let's take a look at the facts. As you see fit to accuse Populists and Republicans of this, let's investigate, The News and Observer made the same charge last year and what did the DEMOCRATIC professors professors at the A. & M. College say? In a signed communication President Holladay, Profs. Massey, Withers, Riddick, Hill, Craigbill and Gresham said:

"While the Board had power to change every officer of the institution, it so far from 'parceling the college out among the wreckers,' changed in the faculty proper the head of only one department, and this we are assured was done solely to effect a consolidation of the agricultural work of the College and of the Experiment Station and thereby save in this department about \$700 per year by assigning to one professor the work hitherto divided between two."

Where are those "designing hands," Bro. Bailey? We do not suppose you claim to be more partisan than these Democrats, and this is what the have to say regarding the "designing hands." They are in a position to know. Upon the Recorder rests in honor the obligation of proving its charges, which men of a different political faith, men of the highest character, men who know all the facts, long ago denied. But why did the Recorder abuse the Populists and Republicans for "changing in the faculty proper the head of only one department" and have never a word to say when the Democrats discharged every Republi-

can connected with the institution? Echo answers, why?

Why is it wrong for the "two parties in fusion," that is, the Populists and Republicans, to put men of their party to manage one department and not wrong for the Democrats to put men of their political faith to manage every department?

The people can't see why some people seem to think all acts of "two parties in fusion" wicked, while the same act is righteous and holy if it is Democratic.

We have too much confidence in Bro. Bailey's integrity to believe he is such a man. And in this connection we will say the News and Observer itself, last Wednesday, speaking of the opening of the college, said:

"This young college constantly takes on fresh life. This summer a department of biology and veterinary science has been added to the science side of the institution, and a thoroughly competent man, Dr. Cooper Curtice, of New York, will occupy it. The engineering departments have received thorough overhauling during vacation and many additions have been made to them. The mechanical laboratories, drawing rooms and shops have all been arranged for steam heat, and a bakery has been added to the kitchen outfit."

AGRICULTURE.

WATER AS A SOURCE OF DISEASE.

Correspondence of The Progressive Farmer. Bulletin No. 70 of Indiana Station, treats of the relation of the water supply to animal diseases.

By actual test it was found that horses drink from 64 to 80 pounds of water per day, or 8 to 10 gallons, water weighing 8 pounds per gallon. Of course they drink less in cold weather than when it is hot, and less when idle than when at work.

Cows in full flow of milk drank 123 to 175 pounds; dry cows 78 to 100 pounds daily. They drink nearly three times as much in the forenoon as in the afternoon.

Four lots of hogs were tested, each hog receiving 3 pounds of skimmilk per day and in addition the following: Lot 1, corn; lot 2, wheat; lot 3, mixture of corn and wheat; lot 4, soaked wheat. They were given all the water they would drink. Lot 1 drank an average of nearly 2½ pounds per day each; lot 2 a little over 5 pounds each; lot 3 nearly 4 pounds, and lot 4 5 1/3 pounds.

Owing to the close grazing habits of sheep they require but little water. The grass eaten by them is young, tender and juicy, and they get much dew. But sheep require some water every day and hundreds of lambs are lost because of the mistaken idea that sheep need no water.

The number of times an animal will drink during the day, when allowed full opportunity, is not known, but is indicated in a general way by the stomach.

The stomach of the horse is small, and, as might be supposed, does not require much water at a time, but often. The stomach in cattle is very large, and rumination (chewing the cud) is performed. This necessitates saturation of the food with water before rumination can take place, and probably explains why so much water is drunk in the morning.

The diseases which arise as a result of supplying water in insufficient quantities, or not providing water in accessible places, are sporadic in character, that is, affect only an occasional animal or a few in a herd or flock. Probably the most serious disease having such cause is mad itch in cattle. This occurs especially in the fall of the year, when the cattle are upon dry pasture, or when turned in upon a dry stalk field. It may occur at other times, and also be due to other causes, but with out doubt 90 per cent. of the cases occurring in this State are directly traceable to this cause. Sheep also suffer from impaction and constipation, and large numbers die for want of proper water supply. Hogs, especially young ones, often succumb from like treatment. Hogs probably suffer least loss, because they receive the greatest care in this respect, but no doubt many cases of colic, impaction and constipation are due to this source.

But the losses that arise from an insufficient supply of water are small as compared with the losses that arise from supplying impure water.

Water in small ponds, ditches, streams and shallow wells is apt to teem with the eggs and larvae of various animal parasites, as well as the

germs of many animal diseases. Not all surface waters are dangerous, but all are more or less exposed to infection and may become dangerous at any time. The time it becomes dangerous cannot be detected by the eye, and may not be detected by laboratory tests.

The earth acts as a filter for all germs that fall upon it, no matter what may be their character. Only a small percent. will pass through the first inch of soil, and a very small number will pass through the first ten feet. In the first few feet of soil most disease germs are destroyed by the forms that inhabit it, but should they pass further down they are restrained only by the mechanical action of the earth. If, however, a soil becomes saturated with germs, as for example in a barn yard, or if the pollution is delivered below the surface, as in a cess vault, little purification will take place, and the germs may find their way into nearby wells. In order to be certain of the water supply, wells should penetrate an impermeable layer of earth, and the sides be perfectly sealed, as with iron tubular forms, so that no water can gain entrance except from below. A tubular well twenty feet deep is a much deeper well from a sanitary standpoint than a dug well of the same depth. It is also true that a shallow well may produce pure water at one time and afterward become contaminated because of the saturation of the soil with germs, either by the barnyard or vault.

A laboratory test of waters from various sources showed the presence of bacteria in each cubic centimeter (about a half thimble full), to be as follows: Very filthy hogwallow, over two and a half millions; ordinary hogwallow, three quarters of a million; Wabash river above the city of La Fayette, 12,000; below the city, over 100,000; clean looking pond, 290,000; filthy watering trough, 248,000; common stock trough, 5,000; drain tile, 3,000; cisterns without filters, 5,000; with filters, 500; shallow wells, 420,000; deep tubular wells, 60 to 150.

A test of soils at various depths showed that each cubic centimeter of surface soil contained 518,400; one inch below the surface, 51,200; two inches deep, 28,800; three inches, 17,600; six inches, 13,200; eight inches, 8,000; thirty inches, 3,600; fifty-four inches, 2,800.

The bacteria ordinarily found in water are not injurious, but the number present may always be taken as an index of its unwholesomeness. A larger number indicates that it is easy for contamination to occur, while a smaller number may be accepted as an evidence of difficulty for extraneous germs to find entrance.

Of the different diseases of live stock in the State, none produce greater loss than hog cholera. For the year ending June 30, 1897, the loss was \$99,457 head, valued at \$5,396,742. A careful analysis of the statistics for each township and State shows that the streams play an important part in its distribution. In 1895, sixty townships bordering upon the Wabash from Cass county to its mouth, show a loss of 15 per cent. of the entire product, and forty seven townships in the second tier show a loss of 10 per cent. In 1896 the bordering townships show a loss of 29½ per cent. the second tier 20½ per cent., and the third tier 16 per cent. In 1895, four townships bordering upon the north folk of the White river lost 14 per cent. and forty two townships in the second tier, 6½ per cent. In 1896 the loss in the first tier of townships was 23 per cent., in the second tier 15½ per cent. and in the third tier 7½ per cent. In other words, the losses in the bordering tier of townships are from 83 per cent. to 112 per cent. greater than in the second tier, and from 83 per cent. to 208 per cent. greater than in the third tier.

An investigation made in 1895 and 1896 showed that the breeders of pure bred swine, who escaped hog cholera, nearly all used well water. Drs Salmon and Smith came to this conclusion in their investigation of hog cholera. "Perhaps the most potent agents in the distribution of hog cholera are streams. They may become infected with the specific germ when sick animals are permitted to go into them, or when dead animals or any part of them are thrown into the water. They may even multiply when the water is contaminated with fecal discharges or other organic matter. Experiments in the laboratory have demonstrated that hog cholera bacilli may remain alive

in water for four months. Making all due allowance for external influences and competition with the bacteria in natural water, we are forced to assume that they may live at least a month in streams. This would be time enough to infect every herd along its course."

If the larger streams have such a marked influence upon the percentage of loss along their courses, it is only reasonable to suppose that the smaller streams and ponds have a like effect. It is common practice to dig out a pond to receive the surface water from build ings and yards, to dam ravines and creeks, to catch the water from tile drains and springs for water for hogs. In such cases it follows that they receive only surface water. It is apparent, then, that the first step to be taken in the prevention of hog cholera is the securing of a wholesome water supply.

All animals are more or less subject to parasitic diseases, and the intestinal tract, owing to its relation to the food and water consumed, becomes the favorite seat of attack. Countless numbers of germs, eggs, larvae, etc., enter with the food, but only a small part are in a proper state of development when they enter or they do not find suitable conditions for continuing life and therefore perish. Water plays a more important part as a carrier of parasites than does the food.

The life cycle of the parasites that affect animals, nearly always includes a stage of development outside of the body. Some parasites are passed out of the body as eggs. These hatch and after undergoing greater or less change, they may be prepared to again inhabit another animal. Some pass out as larvae (maggots) and after a time find entrance to another stomach. A few require an intermediate host. The eggs of the liver fluke develop in the snail and most tape worms prepare in one animal for their full development in an animal of another species. The eggs and larvae of parasites perish without water. Drying kills them. But bacteria can generally stand considerable drying and can live in dust till they are washed in streams or other sources of water for animals. But even bacteria must have water in which to multiply. They cannot increase when dry.

Hence it follows that both bacterial and parasitic diseases of animals are less likely to occur on high pasture lands than on low, damp meadows. Among the most destructive parasitic diseases with which we have to contend is the twisted stomach worm of sheep. It is found especially on low lands along creek bottoms and around ponds. It affects sheep of all ages, but is particularly fatal to lambs. In 1886 it caused a loss of 50,000 lambs and sheep in Indiana. In seasons of excessive rainfall it may occur upon any pasture, but in ordinary seasons it causes little damage except upon the low pastures. The eggs and embryos are passed from the sheep and fall with the droppings upon the pasture, and may be washed into the streams or ponds from which the sheep drink. Moisture is necessary for their existence outside of the body, and the drier the pasture the less the opportunity for conveying the parasite from one sheep to another. In seasons of heavy rain fall, when the grass is kept constantly wet, the danger may be mitigated to a certain extent by changing the sheep from one pasture to another every other day.

Another disease of sheep that is conveyed in the same way is the nodular disease. It is due to a small worm, and while it does not manifest itself until winter, the time the infection is spread from one sheep to another is during the summer months. Such parasitic diseases as paper skin, liver fluke and lung worm of sheep, and the worms in hogs, horses and cattle, are all conveyed in much the same way and are largely due to surface water. Pure water from deep wells is the prevention.

J. L. LADD.
Bay City, Texas.

The tragedy in Brookfield, Mass., in which farmer Newton, his wife and daughter were brutally murdered, as is supposed, by the man employed to work on the farm, ought to serve as a warning to all farmers to be careful whom they employ. The old style of farm employe, often the son of a near neighbor, and in mind and morals with out reproach, cannot now be found except in rare instances. Many of the farm employe of the present day are veritable tramps, with the dissolute ness and vice for which this class is notorious. Yet by the usual method

of employing farm help, such men are brought into close association with the farmers' families. This, as much as anything, has hastened the exodus of farmers' sons and daughters to the cities. The remedy is, we believe, in hiring men with wives and families, and providing a house for them, with a piece of land which they can use for a garden and grow much of the food that they require. We have known this plan to be adopted by farmers who had abundant capital, and with the result of bettering the character of farm help in the neighborhood. In most cases the men who began as hired help and as tenants would buy the house and lot where they first lived, and possibly some additional land, sufficient to keep them employed all the time they cared to work. Smaller farms, each worked by independent land holders, will, we think, become the rule in American farming hereafter. All the great farms that are cropped decrease in fertility, while the small farmers and gardeners usually make money.—American Cultivator.

FARMING TEST.

A Concord Farmer Keeps an Accurate Account of His Farm and Shows His Profit at the End of the Year.

Mr. Charlie Dry, of this place, who for the last year has been tending the old Fair Grounds in wheat, has kept a strict account of all his expenses in tending the crop and has taken an inventory of all of his resources.

The land consisted of 14 acres and following in his expenses itemized as regards the different kinds of work:	
Plowing and harrowing 15 days at \$1 per day,	\$15 00
Guano,	16 00
Seventeen and a half bushels of wheat at \$1.10,	19 25
Drilling,	7 00
Harvesting,	10 00
Hauling, including wheat to mill,	7 00
Expense of threshing, including feed and board,	10 00
Nine bushels toll at 75 cents per bushel,	6 75
Total,	\$91 00
His inventory resulted as follows:	
161 bushels at 75 cts. per bushel	\$120 75
Value of straw,	15 00
	\$135 75
Less all expenses,	91 00
Am't made on investment,	59 75

The above investment averaged then a profit of about \$4 25 per acre, which is a good profit, besides the fact must be taken into consideration that hands here in Concord cost him a great deal more per day than he could get an equally as good a hand in the country. A splendid hand can be obtained in the country at a good many places for the small sum of \$7 per month and board. His hauling was also hired, and of course cost considerable, but after all of these expenses, which were necessarily high, still he netted a gain of \$4 25 per acre. Another fact is also to be considered, that is that four acres of this tract were very poor, having yielded scarcely anything.

Mr. Dry is very well pleased with his experimental farming and will very probably use the past score as a pointer to something larger.—Concord Standard.

WEEDY PASTURES.

Editor Democrat and Journal:—The great difficulty with permanent pastures is weeds. These are due to two principal causes; first, to too poor a stand of grass; and second, to overstocking. Some grasses are unable to endure close grazing and trampling and consequently die out, and in those vacant places many annuals spring up. In many pastures perennial grasses, most difficult to remove, make their appearance and continue to propagate, whereas, if checked in time the pastures might be greatly improved.

The question of weeds for different sections varies. The kind most prominent in one part of the county may be very scarce in another, and vice versa. Most pasture may be kept tolerably clean by the use of the mower two or three times a season, not forgetting the fence corners. The absence of weeds, however, depends primarily on not overstocking, and consequent trampling of more valuable grasses. The great trouble with stockmen is, that if they cut weeds at all, they do it when they have nothing else to do. Of course, some weeds, like Banquo's ghost, "won't down;" and like the poor, "we have them with us always."

Sheep will effectually clear any field of most weeds. If you have no sheep,

and are too poor to buy them, try and borrow some. But even if we do our best, weeds, like whiekey, will make their way among us, and only eternal warfare will keep them in the background. If weeds are of the kind that will not down, the only sure remedy is to plow under and put in a hoed crop for a year or two and then re seed to tame grasses.—J. P. Vissering, Melville, Ill.

HOW TO DEAL WITH THE NEGRO ON THE FARM.

The farm laborers of the North are employed by the month, usually during the growing season and crop gathering time. After that they have to rely upon odd jobs to carry them through the winter months. Taking everything into consideration, the Southern farm laborer is paid as much as one in the North for like services. The most characteristic differences between the white laborers of the North and the colored laborers of the South seem to be these: The white laborers of the North have more ambition and higher aspirations. They study possibilities and look to the future for the realization of their cherished schemes and desires. The negroes of the South make use of the present. They let the future take care of itself. They do not trouble themselves with what may never occur. They are incapable of practicing self denial, without which there can be no thrift or prosperity. They do not save their earnings. They are contented and happy, serene and joyous, though some impending calamity may threaten, but until the calamity falls upon them they give small attention to it. Under such conditions the white laborers would worry and give way to the most inappeasable irritability. As a result of this indifference concerning the future the colored laborer enjoys life more; the white laborer, studying the future, enjoys more thrift. To be independent is a secondary consideration with the negro; it is of the first importance to the white man. Liberty and progressive thought are cherished by the one; ease, peace and contentment by the other. The one builds up a great and durable prosperity at the expense of ease; the other retains his conservatism amidst all the vicissitudes of an advancing and energetic civilization.

The negroes deserve well of the people of the South. They should be fairly and generously treated. Their faults should be largely condoned and their virtues should be fully recognized. Many employers object to the shiftless habits of the negroes, to their want of thrift, economy, thoughtfulness and carefulness, but those who urge these objections should recollect that if the negroes possessed all those high traits of character they would be servants or hired hands. They would become independent and set up for themselves. The very defects in their character of which complaint is made make them servants and keep them so. Whatever they are, the teachings and example of the white people among whom they have been reared are largely responsible for. They know how to please the white people of the South, and the white people know how to appreciate their good qualities. Each race is useful to the other. There should be the most perfect harmony between the two, and there will be when malicious outside influences cease to have any weight with the negroes. Eliminate a few vicious negroes, and the remainder will constitute a body of working people that for strength, endurance and fidelity are not surpassed by any others of any nationality whatever.

A difficult problem, upon the proper solution of which the prosperity of the South in a large measure depends, is how best to treat and employ the negro labor of the South. The problem is greatly complicated by the fact that in many sections the negroes have been taught to believe that the white people are their ancient and inveterate enemies. The two races have thus been frequently placed in antagonism, to the detriment of both. This destruction of confidence in and sympathy for each other is greatly to be deplored. The South needs the hearty concurrence and concentration of every force, moral, intellectual and physical, to regain its lost ascendancy and to place it on the high road to wealth and prosperity. A few suggestions, founded partly on observation and partly on experience, are given, by which both races may be benefited.

1. The first step should be to make

[CONTINUED ON PAGE 8]