

Response to published call, I submit to the County Democratic Convention as a candidate for Representative at the forthcoming election.

JOHN T. CASEY.

Response to published call, I hereby submit to the County Democratic Convention as a candidate for Representative at the forthcoming election.

R. H. CAMPBELL.

FOR SHERIFF.

I am authorized to announce W. E. T. as a candidate for re-election to the office of Sheriff, subject to the action of the County Democratic Convention.

CHANCERY CLERK.

I am authorized to announce C. M. NOLAN as a candidate for re-election to the office of Chancery Clerk, subject to the action of the County Democratic Convention.

CIRCUIT CLERK.

I am authorized to announce J. S. BISHALL as a candidate for re-election to the office of Circuit Clerk at the coming election.

FOR COUNTY TREASURER.

I am authorized to announce THOS. H. BLET as a candidate for election to the office of County Treasurer; subject to the action of the County Democratic Convention.

COUNTY ASSESSOR.

I am authorized to announce MORRIS BACHMAN as a candidate for election to the office of County Assessor; subject to the action of the County Democratic Convention.

I am authorized to announce J. S. BISHALL as a candidate for County Assessor; subject to the action of the County Democratic Convention.

THE VOTERS OF SUNFLOWER COUNTY.

I hereby announce myself as a candidate for the office of Sheriff.

SHERRIFF OF SUNFLOWER COUNTY.

G. B. WILMOT.

ART TERMS, 4TH DISTRICT CIRCUIT COURT CALENDAR, 1887.

Itman county—Begins on the 1st day (7th day) of March and October (4th), and may continue 6 judicial days.

Itman county—Begins on the 2nd day of March (14th day) and October (5th), and may continue 18 judicial days.

Itman county—Begins on the 3rd day after the 2nd Monday of March (21st day) and October (12th), and may continue 15 judicial days.

Itman county—Begins on the 4th day after the 2nd Monday of March (25th) and October (16th), and may continue 12 judicial days.

Itman county—Begins on the 5th day after the 2nd Monday of March (29th) and October (20th), and may continue 9 judicial days.

Itman county—Begins on the 12th day after the 2nd Monday of March (10th) and October (27th), and may continue 12 judicial days.

Itman county—Begins on the 13th day after the 2nd Monday of March (11th) and October (28th), and may continue 11 judicial days.

Itman county—Begins on the 14th day after the 2nd Monday of March (12th) and October (29th), and may continue 10 judicial days.

Itman county—Begins on the 15th day after the 2nd Monday of March (13th) and October (30th), and may continue 9 judicial days.

Itman county—Begins on the 16th day after the 2nd Monday of March (14th) and October (31st), and may continue 8 judicial days.

Itman county—Begins on the 17th day after the 2nd Monday of March (15th) and October (1st), and may continue 7 judicial days.

Itman county—Begins on the 18th day after the 2nd Monday of March (16th) and October (2nd), and may continue 6 judicial days.

Itman county—Begins on the 19th day after the 2nd Monday of March (17th) and October (3rd), and may continue 5 judicial days.

Itman county—Begins on the 20th day after the 2nd Monday of March (18th) and October (4th), and may continue 4 judicial days.

Itman county—Begins on the 21st day after the 2nd Monday of March (19th) and October (5th), and may continue 3 judicial days.

Itman county—Begins on the 22nd day after the 2nd Monday of March (20th) and October (6th), and may continue 2 judicial days.

Itman county—Begins on the 23rd day after the 2nd Monday of March (21st) and October (7th), and may continue 1 judicial day.

Itman county—Begins on the 24th day after the 2nd Monday of March (22nd) and October (8th), and may continue no judicial days.

Itman county—Begins on the 25th day after the 2nd Monday of March (23rd) and October (9th), and may continue no judicial days.

Itman county—Begins on the 26th day after the 2nd Monday of March (24th) and October (10th), and may continue no judicial days.

Itman county—Begins on the 27th day after the 2nd Monday of March (25th) and October (11th), and may continue no judicial days.

Itman county—Begins on the 28th day after the 2nd Monday of March (26th) and October (12th), and may continue no judicial days.

Itman county—Begins on the 29th day after the 2nd Monday of March (27th) and October (13th), and may continue no judicial days.

Itman county—Begins on the 30th day after the 2nd Monday of March (28th) and October (14th), and may continue no judicial days.

Itman county—Begins on the 31st day after the 2nd Monday of March (29th) and October (15th), and may continue no judicial days.

Itman county—Begins on the 1st day after the 2nd Monday of March (30th) and October (16th), and may continue no judicial days.

Itman county—Begins on the 2nd day after the 2nd Monday of March (31st) and October (17th), and may continue no judicial days.

Itman county—Begins on the 3rd day after the 2nd Monday of March (1st) and October (18th), and may continue no judicial days.

Itman county—Begins on the 4th day after the 2nd Monday of March (2nd) and October (19th), and may continue no judicial days.

# THE GREENVILLE TIMES.

## PROFESSOR GILLY'S ADDRESS.

The following was delivered by Prof. Gully, of the A. & M. College, before the Delta Farmers Convention, May 10th, 1887:

Mr. President, and Gentlemen of the Convention: My actual knowledge of the condition of things in the Yazoo Delta is derived from correspondence, reading, personal inquiries, and two brief visits to this portion of the State; consequently I may not be able to present much that will be of interest to the meeting.

The business of farming and planting is governed however, by certain general principles, the county over, and to those general principles I will for a short time take the liberty of calling your attention.

Glancing over the broad fields of labor at this present time, we notice that the industries are tending to specialties, and to the consolidation of capital in nearly all enterprises; 2nd, that all products, raw and manufactured, are gradually cheapening in money value; 3rd, that labor, if we except the lower class of unskilled workmen, is not cheapening in money value; 4th, in agriculture, fertility of the soil on lands that do not require large expenditures to fit them for cultivation, is being exhausted and future productiveness must be kept up by some system of fertilization.

Referring to our first heading, the tendencies to specialties is the result of having discovered that one man, or a body of men, can be more easily trained and can accomplish more work in one line than they can when spread over several lines.

Our second heading represents simply the outcome of the first. The trained special expert in any line of work, mental as well as physical, can produce more in a given time, yes very much more than the non-special and consequently less expert workman turning out, therefore, a large product at less expense and it follows that competition to make sales reduces the price. Were it not for the fact that decrease in price increases consumption in some form, we would have stagnation in all industries.

If this natural readjustment in the several industries, I refer to the increased production, increasing consumption and decreasing cost and selling value, affected all industries alike, no harm would result and the laborer whose wages, as I have remarked, are nearly stationary, would be benefited, for the reason that his wages judiciously expended would enable him to indulge to a greater extent in the necessities and luxuries of life. Unfortunately however, for the average farmer, the rule that holds good in other industries, does not apply to his work. The selling price of the planters and farmers products has followed the general law of shrinkage, the cost of labor remains the same, but the product per laborer has not generally increased.

There is a passage in Scriptures which says "that to him who hath shall be given, but to him who hath not shall be taken even that which he hath." The latter part applies to a large number of our farmers at this present time. In addition to having to sell his product at a constantly decreasing price, cost of labor remaining the same, the farmer must now resort to expensive fertilization on the old lands to grow even average crops, or he must at large cost bring in new areas that heretofore have not been considered worth the expenditure.

To recapitulate the selling price of all commodities is sinking, wages are nearly stationary, increasing rather than decreasing, and the production per workman is increasing in all lines of industry owing to better supervision, growing skill, improved machinery, and substitution of machinery for men, except in the growing of crops. We will not include all the tillers of the soil for a considerable portion of our farmers, the wheat, hay and corn growers in some sections of the country have learned how to produce more crop per man, but in the Gulf States to-day the average farm laborer produces practically no more cotton, corn, or other crop than the average laborer did ten, fifteen, twenty-five, or thirty years ago.

The above is a statement of facts as they exist, and they are due to the working out of natural laws. We must make up our minds therefore to adjust our work to conform to these laws as we can't change them; "The mill of the gods grind slow," but they grind exceedingly fine," and it behooves us to keep out from between the stones.

Some of our modern political economists have proposed reducing acreage of crop, in cotton for instance, to hold up the price. On a par with this idea is the scheme of our friends, the Knights of Labor, which proposes to make wages uniform for one class of labor regardless of individual skill and ambition to rise in the calling. The cotton crop of the United States for the present year promises to exceed 7,000,000 of bales with an average season. Should we have a more favorable season than usual we may produce 7,500,000 bales. The increase in quantity will necessitate the selling of the crop at a lower price than has been realized heretofore to increase consumption at home and abroad. Some twelve or fifteen years ago Joseph Harris, one of the editors of the American Agriculturist, stated that wheat must sell at \$1.25 per bushel to make it a profitable crop, as the cost of

production was not less than \$1.00 per bushel.

Farmers now sell wheat at 75 cents and still find it a profitable crop, notwithstanding land has risen in value and wages are higher rather than lower than they were fifteen years ago, and they can do this because they have learned how to make twice as many bushels per man. The labor question is the great question of the South to-day. It has received less attention from a purely labor standpoint than it has in any other highly civilized country or section of country, and, as a result our average farm laborer produces no more than he did twenty or thirty years ago. We sometimes hear it stated that we have in the South the best and cheapest labor to be found in the country, which I believe is true but we can hardly commend the management of this labor so long as the product per man remains at its present level. To get the most work out of a man it is essential that the work be directed by an intelligent brain, and by expert skill, either the workman's or some one else.

It would seem to me therefore that we farmers must do what they have done in other industries, learn how to produce more per man. Intelligent skill in management must play an important part in farming as it does in railroading, manufacturing and mining. The main points to consider are, I believe: 1; Labor; 2; Productive capacity of the soil; 3; Growing such crops and disposing of them in such way as to economize labor, retain and add fertility to the soil, and at the same time return a profit to the farmer.

I have placed labor first because it is the prime factor in the production of either raw or manufactured goods. Careful consideration of the labor question is even more important in farming and planting than in manufacturing, because the value of the work done is influenced so largely by outside influences, such as the rainfall and the temperature.

Again the soil, the plant, and the animal, are the things that require expert skill and judgment, in treatment to be fully utilized. The present rent and share system, that all plants must have certain materials that are drawn up through the roots to enable them to grow. If any of these materials are lacking the plant will starve.

Nearly all soils when analyzed are found to contain large amounts of these materials, but the soil containing the most may be the least productive. Further investigation has developed the fact that the plant food in the soil must be in a certain condition before the plant can get it. It must become soluble or pass into partial solution before it is available, 3rd. When unproductive soil rock, bone or any solid material is broken up and exposed to the influence of the oxygen, carbonic acid, moisture, and warmth of the atmosphere, the insoluble material becomes available and totally unproductive, soil taken from any depth, may after exposure for a time, become highly productive.

All intelligent, observing farmers know that thorough fitting of the land and continual working of the soil will increase the yield. It does this because more inert matter is changed into the available condition. If the soil is saturated with water, the action of the agencies mentioned is checked and the plant can not get food. It has been known for 1800 years that drainage and thorough cultivation are requisite to grow maximum crops, but why is a modern discoverer?

The application of manures especially strong, concentrated fertilizers, may have the same effect on inert material of the soil as the action of the atmosphere. The decaying roots of plants also help to decompose insoluble matter in the soil and fit it for plant food. In the natural process of plants growing and dropping their leaves and finally decaying on the land, the land becomes richer; first, by decomposition of inert soil matter; second, by addition made to the soil from the atmosphere by the leaves of the plants. Some fertilizing material in the form of ammonia is carried down by rain and dew; and it is held by some investigators that under certain conditions the soil may act upon atmospheric nitrogen and make it enter into available combinations. We have also in some places fertilizing material deposited by overflow.

We have referred now to the principal sources of fertility, with the exception of applying manure, which adds plant food direct to the soil and may also act as a decomposing agent to unlock soil fertility not otherwise available. We will next consider exhaustion of soil fertility. When we apply manure to the soil and it becomes fitted for plant food through decomposition it does not remain in that condition permanently. The soluble portion may be taken up by growing plants, it may form new insoluble combinations with some material already in the soil and remain in that condition for an indefinite length of time, until acted upon by some decomposing agent, or it may be washed out or carried to deep to be reached by the roots of plants. These have applied to soluble plant food derived from the sources of the supply of fertility, and knowing the channels through which plant food may be dissipated we may perhaps study to advantage how to increase the supply, convert it into products of most value and stop waste.

The Illinois Central Railway Building a bridge over the Ohio that will cost \$3,000,000. A bridge is also projected over the Mississippi at Memphis. Lines of railway are being built through and around this Delta, and it will soon have shipping facilities both out and in, equalled by those of no other body of land equally productive in the world. If now these great corporations can see future development that warrants such immense expenditure of capital on their part, what folly on the part of the owners of this land to allow its richness and value to be unnecessarily wasted. Twenty to thirty years ago the settlers on the rich prairies of the West ridiculed the man who prophesied exhaustion of fertility in these rich, black soils. The men who believed that their land could not be worn out by constant cropping in wheat alone, and who continued to farm in accordance with that belief, have mostly moved on. The foreclosure of the "iron-clad" mortgage has closed the account of many a man who worked against nature's laws instead of with them. Rich as these lands are they are being worn down until they are not profitable to cultivate, and while the wearing out process is going on the land is not producing up to its full capacity.

While many problems remain unsolved much has been learned in regard to the fertility of the soil, during the past few years, through the combined efforts of the chemist, the botanist and practical agriculturist. We have learned that the soil rocks contain material that will make plant food, and the same is true of nearly all kinds of soils from the surface down to any depth. When the surface soil is removed the subsoil is not fertile as a rule at first, but after exposure to the air for a time it is in some cases more productive than the surface. A plant cannot get food from a solid rock, but when the rock is ground up fine it may make a good fertilizer. The above are facts observed by the scientist and the farmer, and the scientist has given us the explanation by showing through carefully conducted experiments in what is termed pot culture, that all plants must have certain materials that are drawn up through the roots to enable them to grow. If any of these materials are lacking the plant will starve.

Nearly all soils when analyzed are found to contain large amounts of these materials, but the soil containing the most may be the least productive. Further investigation has developed the fact that the plant food in the soil must be in a certain condition before the plant can get it. It must become soluble or pass into partial solution before it is available, 3rd. When unproductive soil rock, bone or any solid material is broken up and exposed to the influence of the oxygen, carbonic acid, moisture, and warmth of the atmosphere, the insoluble material becomes available and totally unproductive, soil taken from any depth, may after exposure for a time, become highly productive.

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Drainage and thorough cultivation will increase yield in crop by making more inert plant food that is stored in the soil available; but it will also help to exhaust the fertility of the land more rapidly. The western wheat grower with his heavy teams of from two to six horses, deep working plows, harrows, cultivators and other implements, produces large crops, but he uses up fertility to the extent of reducing yield below the profit point in from ten to fifteen years. With no more overflows and the introduction of thorough drainage, the best deep working implements aided by light applications of concentrated fertilizer and the removal of the entire crop, the same result will in time be brought about on these so called inexhaustible lands. The first thing to guard against then is the too rapid removal of fertility. I neither advocate nor practice what is called the intensive system of farming which includes large expenditures in fertilizers and labor on a small area of land; but I would not have you understand that I am recommending poor farming to prevent exhaustion of soil fertility. We may save fertility by removing from the farm only such products as do not contain large quantities of costly plant food. Cotton lint for instance may be sold without loss, but the cotton seed contains costly fertilizing matter. But we need not discuss this particular part of the question. We should ask first, is cotton the most profitable crop to grow? Second, if it makes the largest return of any crop at present? Can we expect that the yield will not decrease without the use of fertilizers? If not, how can we most cheaply keep up fertility and continue to grow large crops of cotton?

So much is said about the inexhaustible fertility of the lands of the Delta that it may be taken for granted by some that they will last forever. Careful questioning of several large planters from different counties lying along the river brings out the following opinion in regard to this matter. On good average bottom land three years' cultivation is required to thoroughly break and subdue the new land, and two more years to reach maximum yield, and five more years to free the land from stumps. With a favorable season and thorough work 500 pounds of lint may be produced per acre the first year, and with everything favorable the yield may increase until it reaches 600 or even 700 pounds by the fifth year. During the second five years of cultivation the yield remains about stationary, varying with the uncertainties of the season; but after the tenth year of cultivation the yield gradually decreases so that after the fifteenth year it drops below 500 pounds, and after the twentieth year to 400 pounds, and then to 300 pounds, or one-half of the yield made by the land at its best.

This decrease in yield on the old land is often charged to unfavorable seasons, and not to the wearing out of the lands. If I am rightly informed the land passes the maximum production point just as the soil is freed from stumps and gotten into condition to be most economically tilled, and after twenty or twenty-five years, if we may judge by the results, the land has depreciated in value more than fifty per cent on what it was intrinsically worth at the end of ten years of cultivation.

If my information is correct, the loss of an annual yield of from 150 to 200 pounds of lint cotton represents a more rapid depreciation for the time than will be found in any other large section of the country.

Reasoning from analogy there should be some method by which this shrinkage in production can be checked, for it has been demonstrated in every one of the older States that under a careful system of cropping and fertilization, the virgin yield of new land can not only be equalled but surpassed on old land.

There is one point in farming that has been fully demonstrated the world over, and that is that no land can be kept continually in cultivation and be made to produce large crops when the entire crop is removed without large applications of manure. Another point fully settled also is that where cultivated crops alternate with grass or other crops that shades and fills the soil with roots, light application of manure will retain and even increase productive capacity. In a dozen different states wheat on virgin soils has yielded on the average somewhere in the vicinity of 25 bushels per acre in a favorable season. Continued wheat growing has in all cases brought the average yield down to something like ten bushels to the acre. The time varies with the original fertility of the soil from 5 to 15 or 20 years. It has been found in nearly all cases where it has been tried, that the alternation of wheat with corn and clover, with occasional light dressing of manure, has raised the yield again above the starting point. We have many instances of a similar kind in the growing of cotton in the Gulf States. It has been found that the longer this alternate system of cropping is delayed the greater the expense and time required to restore productiveness, and that it is much less costly to make this change while the land is still in fertile condition. Prudence would suggest therefore the adoption of the alternate system of cropping on these lands before the fertility is exhausted to the extent of seriously reducing the yield.

In the third point I mentioned as worthy of consideration, I re-

ferred to such crops as would economize labor, retain and increase fertility, and at the same time be as profitable as one special crop.

The lands of the Delta stand first in the production of cotton, but they are not surpassed in yield of other crops, such as hay, oats and corn. If the farmers of the central States, where cotton will not grow, can farm profitably, it would seem that if we can grow the same crops and get even larger yields than they can secure, and at the same or less cost, that we need not feel tied to the cotton crop alone. In suggesting a diversity of crops on these plantations I do not advocate abandoning the cotton. I believe we should increase the amount of cotton grown in this country, to the extent of discouraging its production elsewhere, and control if possible the cotton industry in all its branches, planting and manufacturing. To do this we must learn how to make cheaper cotton by making greater yield per hand, and we must learn some way of keeping up the yield per acre on these natural cotton lands through the years to come.

On some of the richest soils in the world, and with the most favorable climate, the sugar planters of this country have done what the cotton planters of the Delta are doing to-day, paid almost no attention to cheapening the cost and improving the method of growing and working cane, with the result that other countries under less favorable circumstances have outstripped them in this industry and nearly destroyed their business. The Louisiana sugar grower experience station, established to make a careful study of the sugar cane growth and manufacture, should have been started and worked out before Franco and Germany learned how to make sugar from the beet at less cost than our planters have been making it from cane. There is the same necessity for careful experimental work now in the growing of cotton on these lands. It should be the work of this Association to inaugurate a series of investigations in cotton culture similar to the work of the Louisiana station on cane. Much may be done that will be of great value by individuals.

If we may judge from the results of accidental application of manure, such as may be noticed near stables on the old lands, there seems to be no question as to the value of manure in increasing crops, and the same is true of cotton seed.

I have been unable to secure any data in regard to the effect of red clover or the cow pea on succeeding crops; having heard from no one who has tried following these two noted renovating crops with cotton and corn in the Delta.

It has been demonstrated on the old cotton plantations on the uplands of this and other States that to plant peas each year, reducing the acreage of cotton and corn one-fourth, alternating the crops to have each part of the plantation in peas every four years, letting the peas rot on the ground or saving enough for hay, may reduce the cost of cultivation by reducing the number of hands without reducing total yield. For experience has shown that this system has increased the yield per acre twenty-five per cent.

We may secure the same result temporarily by using the commercial fertilizer as soon as the soil shows partial exhaustion. Application of a fertilizer does not supply the material removed by the crop and material wasted, as has been shown by experiment. The fertilizer however will turn loose elements of plant food locked up in the soil for a few years, but the stimulating process soon calls for larger and larger doses to produce the desired effect and at increasing cost until the limit of profitable production is reached. The natural fertility of the soil will then be pretty thoroughly exhausted and restoration will be a costly process.

While on a visit to Minnesota three years ago I was told by an old settler in the southern part of the State, that not one large exclusive wheat grower in his county was solvent. When that section of the county was first settled exclusive wheat growing had paid large profits, but now only the combined wheat, corn, grass, and stock growers were making money.

It may seem ridiculous to talk of combining stock growing with cotton growing in the Delta, but bear in mind that I suggest this plan for the consideration only of those whose land begins to show partial exhaustion.

1st. Stock food, corn, hay, grass, etc., can be grown at less cost in the Delta than in any other section of this country.

2nd. The cheapest and best stock food for fattening purposes known is cotton seed, grown here in abundance and it will continue to be produced.

3rd. It has been demonstrated in the eastern and central portions of Mississippi on land not so compared with your soil that stock growing and feeding is the most profitable branch of farming that can be followed.

4th. With one half or one third of the land planted to cotton, the remainder put into meadow and crop crops with alternate cropping, the yield of cotton may be kept at the maximum point for an indefinite length of time, the consumption of the food crops supplying manure.

The diversified system of cropping would reduce the working force and allow the substitution of

machinery for men, thereby reducing the number of hands required to carry on a plantation and the alteration of cotton with forage crops that would fill the soil with roots would retain the virgin condition, and yield of the soil indefinitely, with light applications of manure or fertilizer unless these soils contain some factor not known in any other portion of the globe.

The grazing and fattening of cattle is a business that is spread over half of the country and one that is receiving more attention than any other branch of agriculture from shrewd business men.

In the development of the cattle industry it has been found that it is cheaper to move the animal to the food supply than to transfer the food to the animal. We notice therefore that the calf that is bred in Texas may be grazed in Colorado or Nebraska where the corn is grown or even to Virginia to be fattened for market. Eastern bred calves from the dairy regions of N. Y. State are grazed near the Rocky mountains, fattened in the central states, and marketed in New York.

Remembering that this Delta can make hay and corn as cheaply as any section of the county and that it also has large quantities of the rich cotton seed, and that it has but a short distance from the permanent breeding and grazing grounds of Texas, what should prevent it from becoming the great fattening ground of the country.

Right at this present time, an acre of land well set in meadow or forage crop would make a higher average return if the crop in combination with cotton seed were fed to a fattening steer, than it does planted in cotton.

In the interest of the cotton planter of the future all possible means of cheapening cost of production should be carefully and thoroughly tested, and above all things the wonderful fertility