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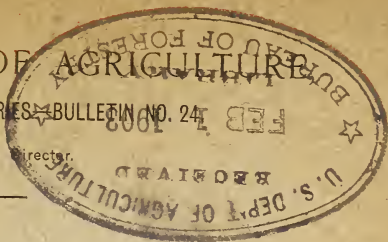
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U. S. DEPARTMENT OF AGRICULTURE

OFFICE OF PUBLIC ROAD INQUIRIES BULLETIN NO. 24

MARTIN DODGE, Director



PROCEEDINGS

OF THE

NORTH CAROLINA GOOD ROADS CONVENTION,

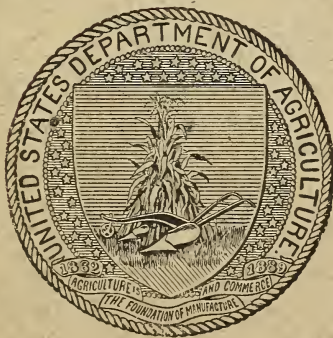
HELD AT

Raleigh, February 12 and 13, 1902.

COMPILED BY

J. A. HOLMES,

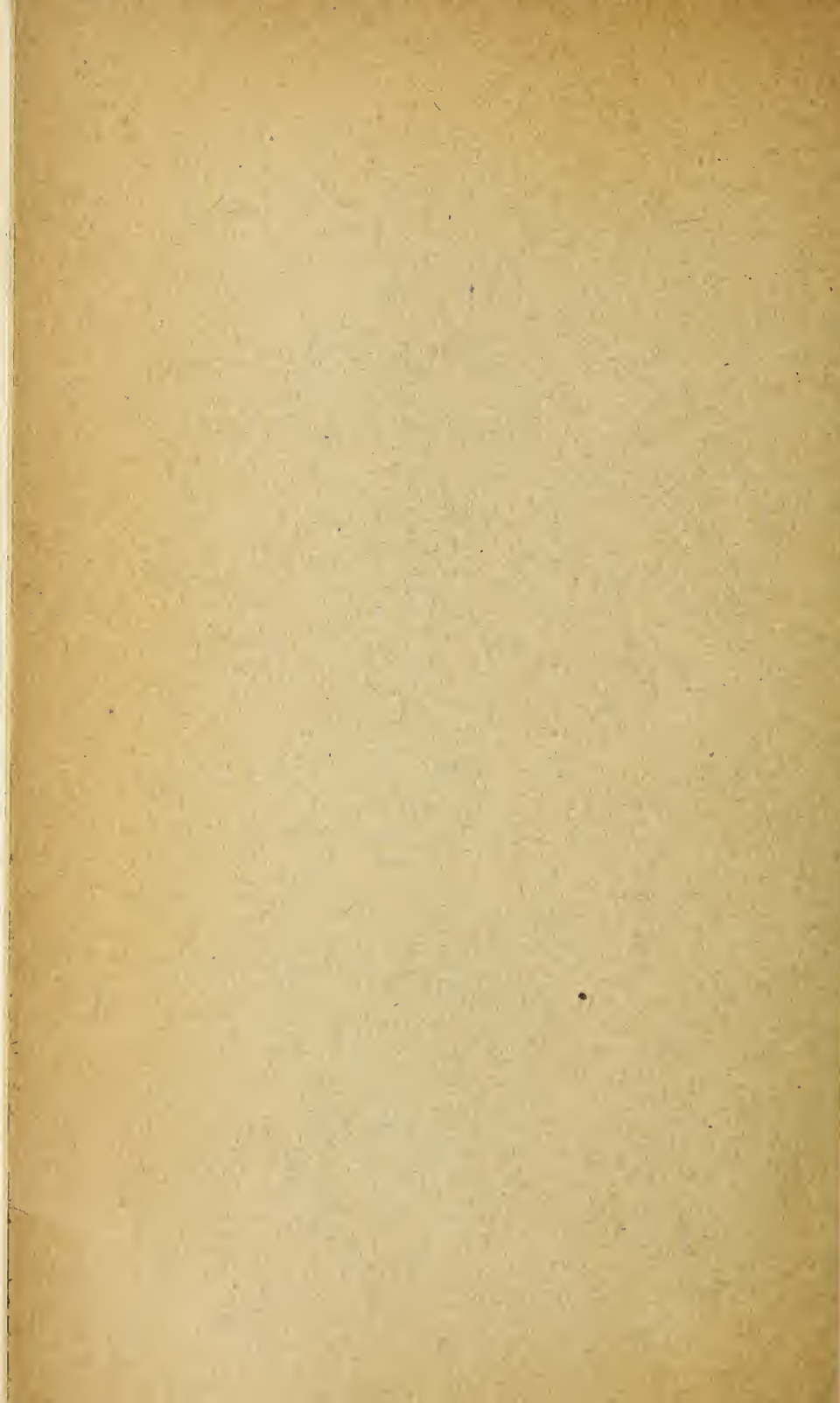
SPECIAL AGENT, SOUTHERN DIVISION.

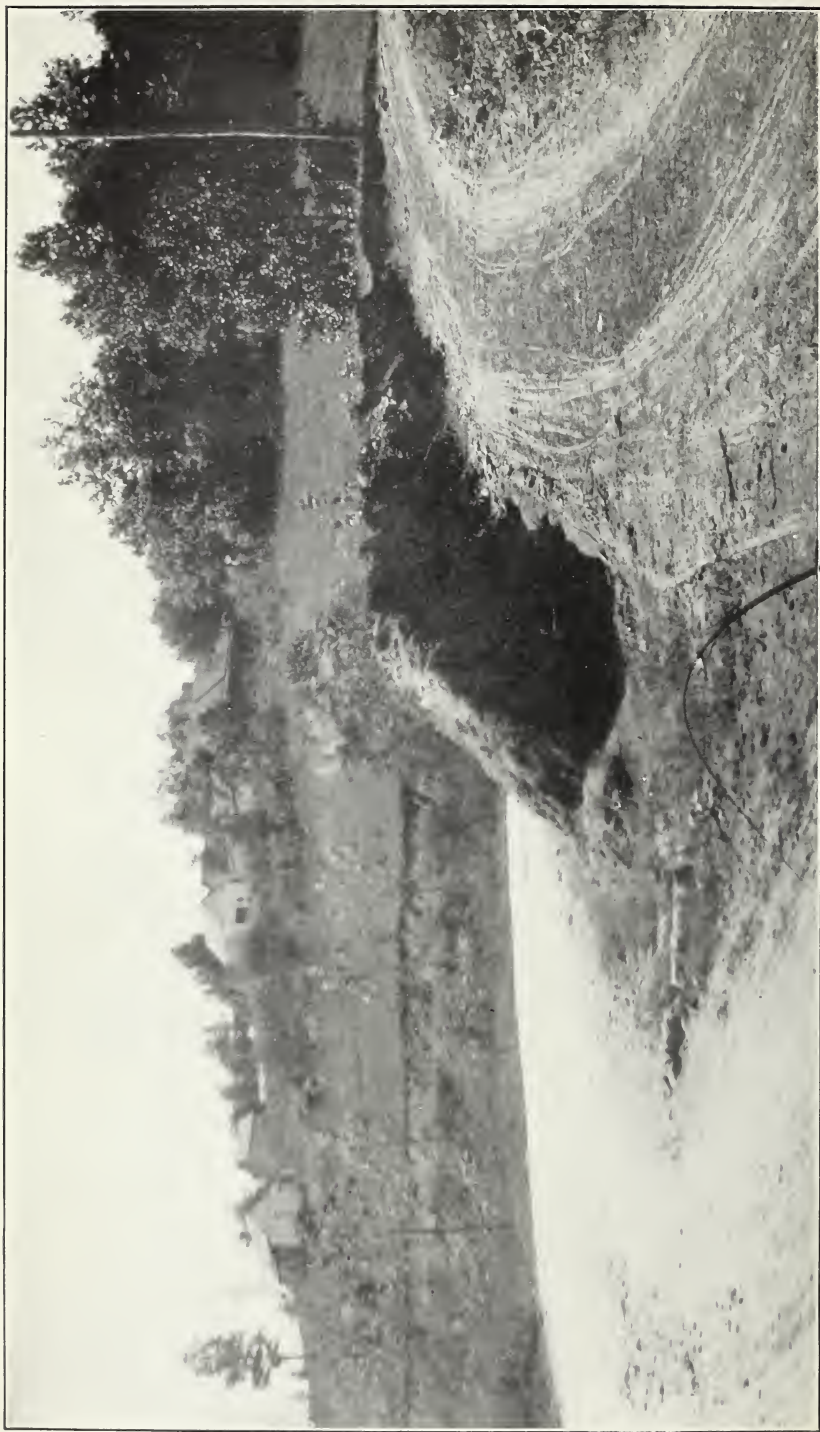


WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1903.





OLD ROAD (8 PER CENT GRADE) AND NEW ROAD (4 PER CENT GRADE) RELOCATED AND MACADAMIZED BY CONVICT LABOR, NEAR ASHEVILLE, BUNCOMBE COUNTY, N. C.

U. S. DEPARTMENT OF AGRICULTURE,
OFFICE OF PUBLIC ROAD INQUIRIES—BULLETIN NO. 24.

MARTIN DODGE, Director.

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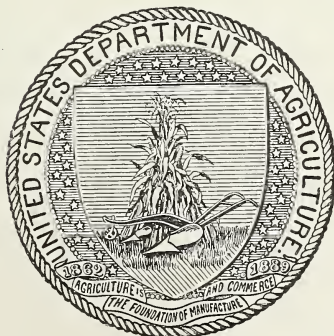
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J. A. HOLMES,
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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
OFFICE OF PUBLIC ROAD INQUIRIES,
Washington, D. C., August 20, 1902.

SIR: I have the honor to submit herewith a report of the proceedings of a good roads convention recently held at Raleigh, N. C., prepared by Prof. J. A. Holmes, special agent for the Southern Division of this Office.

This convention derives special importance from the number and representative character of those attending and from the instructive addresses delivered. The Southern Railway good roads train was present during the convention, and a section of object-lesson road, constructed on scientific principles, is described.

I recommend the publication of this report as Bulletin No. 24 of this Office.

Respectfully,

MARTIN DODGE,
Director.

Hon. JAMES WILSON,
Secretary of Agriculture.

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PROCEEDINGS OF THE NORTH CAROLINA GOOD ROADS
CONVENTION, HELD AT RALEIGH, N. C.,
FEBRUARY 12 AND 13, 1902.

INTRODUCTION.

During the winter of 1901-2 the National Good Roads Association, the Office of Public Road Inquiries, the Southern Railway Company, and the principal manufacturers of road-building machinery in the United States cooperated in holding a series of conventions in the Southern States, and building object-lesson roads in connection with these conventions. The representatives of the cooperating forces and the road-building machinery were transported from point to point by the "good-roads train" of the Southern Railway. One of the most important of these conventions was that held at Raleigh, N. C.

THE CONVENTION.

The convention was assembled by a proclamation issued by the governor of the State, and was attended by a large number of people interested in the subject of road improvement. Hon. S. L. Patterson, State commissioner of agriculture, was elected chairman, and Mr. F. T. Ward secretary, of the convention. Addresses were delivered by Governor Aycock; Mr. W. B. Snow; President W. H. Moore, of the National Association; Hon. Martin Dodge, director of the Office of Public Road Inquiries; Gen. M. C. Butler; Mr. M. A. Hays; Capt. S. B. Alexander; Mr. T. B. Parker; Prof. W. C. Riddick, of the Agricultural and Mechanical College; Gen. W. R. Cox; Mr. Paul C. Graham; Mr. E. L. Daughtridge; Capt. J. D. McNeill; Mr. J. S. McCubbins; Mr. J. Van Lindley; Maj. T. L. Emery; Mr. Duff Merrick; Judge Graham, of Oxford; Mr. S. H. Webb; Mr. W. C. McMackin; Rev. Thomas N. Ivey; President Winston, of the State Agricultural and Mechanical College; Hon. E. W. Pou, Member of Congress; Superintendent A. W. Machen, of the United States free rural mail delivery; Hon. F. M. Simmons, United States Senator; Hon. T. G. Skinner; and Mr. M. O. Eldridge, assistant director of the Office of Public Road Inquiries.

THE OBJECT-LESSON ROAD WORK.

In order to make the object-lesson road easily accessible to the large number of visitors who were expected to attend, it was decided to build it within the city limits of Raleigh. With this end in view, a city street some 50 feet in width was selected, and during the good roads week this was graded and macadamized to its full width for a length of two city blocks.

The soil, consisting of compact red clay, was graded so as to have a slope from the center toward the sides of about 1 inch in 15 or 20 inches. Upon this foundation was placed a layer, averaging some 3 inches in thickness, of granite fragments 2 inches or less in diameter. This was thoroughly rolled with a steam roller, and on it was placed a second layer of stone broken to sizes of 1 to 2 inches. This was also thoroughly rolled. A third layer was then put on, consisting of crushed stone, the fragments ranging in size from $1\frac{1}{2}$ inches down. This in turn was carefully rolled and sprinkled, and on it was spread a final layer of crushed stone and stone dust, which was rolled until it was thoroughly consolidated.

The building of the sample road was watched by a large number of delegates to the convention, who showed great interest, not only in the methods of construction, but in the handling of the road-building machinery. This object-lesson road (Plate II) had the one disadvantage of being located in the city, and being itself a city street instead of a country road; but it had the advantage of being easily accessible to all the delegates, and its educational value was enhanced by its location at the State capital, where it will serve as an object-lesson in scientific road construction to visitors from all parts of the State for several years.

WEDNESDAY, FEBRUARY 12, 1902—MORNING SESSION.**PROCLAMATION CALLING THE CONVENTION.**

The following is the proclamation issued by Governor Aycock, of North Carolina, calling the convention:

STATE OF NORTH CAROLINA,
EXECUTIVE DEPARTMENT, RALEIGH.

Whereas the people of the State of North Carolina have pledged their best endeavors to the cause of education, the upbuilding of our State, and the development and utilization of her natural resources; and

Whereas the farmers need better roads, both for their children to travel over daily on their way to the schoolhouse and for themselves and their families to use to reach their churches to worship Almighty God, as well as for the prompt and early delivery of their mail by the carriers of the United States Government and the transportation of their products and purchases; and the citizens living in towns and cities need good streets for the same purposes; and



VIEW OF CITY STREET MACADAMIZED AS AN OBJECT-LESSON ROAD DURING STATE CONVENTION, RALEIGH, N. C.



Whereas in those counties of our State where the greatest progress has been made in substantial good-road building there has been the greatest industrial advancement, as well as the largest increase in the value of farm lands, due to being thereby placed nearer to the towns and cities; and

Whereas the National Good Roads Association of America, in cooperation with the Office of Public Road Inquiries of the U. S. Department of Agriculture, and the Southern Railway Company, will, during the week of February 10 to 15, 1902, in the city of Raleigh, give an exhibition of modern road building, to which all citizens who are interested in that commendable work are invited to come:

Now, therefore, I, Charles B. Aycock, governor of the State of North Carolina, do hereby issue my proclamation calling a good roads convention to be held in the city of Raleigh on Wednesday, February 12, and Thursday, February 13, 1902, to which are appointed delegates from the various sections of the State, requesting them and all other good citizens whose convenience will permit to attend said convention.

Done at our city of Raleigh this the twenty-second day of January, in the year of our Lord one thousand nine hundred and two, and in the one hundred and twenty-sixth year of our American Independence.

CHARLES B. AYCOCK, *Governor*.

Pursuant to this proclamation a meeting of the good roads advocates of North Carolina assembled at Raleigh, in Metropolitan Hall, on February 12, 1902.

The meeting was called to order at 11 o'clock a. m. by Mayor A. M. Powell, of Raleigh, who requested the convention to join Rev. J. K. Howell, of Rockymount, in prayer. Mayor Powell then requested Hon. S. L. Patterson to act as temporary chairman. In assuming the chair Colonel Patterson thanked the convention for the honor, and announced that the first order on the programme was "an address of welcome by our peerless governor, whose wise brain and big heart are being devoted to the upbuilding of the interests of North Carolina." In welcoming the convention Governor Aycock spoke as follows:

ADDRESS OF WELCOME.

By Hon. CHARLES B. AYCOCK, *Governor of North Carolina*.

It becomes my duty and pleasure this morning, as governor of North Carolina, to extend to you all, the stranger as well as the citizen, a hearty welcome. I give this welcome to you not only on account of your personality, which would entitle you to a glad greeting anywhere, but particularly on account of the great work which you have assembled to consider and to aid in its progress and development—the work of good roads. The question of good roads touches us at every point. It measures the attendance upon schools; we can calculate from the condition of the roads the number who go to church on Sunday; it touches our agricultural life; it meets us in the industries and in commerce; there is no interest in North Carolina which is not affected by it. The great strength of North Carolina has been its love of individual liberty, its devotion to the State. Its weakness has been its isolation. When this great State of ours was settled, our forefathers settled in scattered communities, and Mr. Macon aptly expressed the feeling of our people when he said he did not want to live so close to his neighbor that he could hear his dog bark. In that way we lose the power of combination; we miss the strength which comes from unity; we lag behind in the race for wealth and commercial supremacy; and we lose ground in education. This is a rapid age, an age in which every man is on the move.

We must do something if we would keep up with it. The struggle for the good things of life is intense, and we can not keep the pace with other States and peoples unless we bring to bear the whole power of all the people. We can never educate the children of North Carolina until we shall have built such roads as bring them close together, whether they live within a few or many miles of each other. We live in an age which does not count distance by miles but by hours. If I should ask any man to-day how far it is to Washington, he would answer in the number of hours it takes to travel there. We must meet the conditions which confront us. The roads are the only thing in the State of which I am ashamed, because they are in a condition which is without excuse. Captain Galloway once said that there is a sand road in eastern North Carolina 8 miles long and 2 miles deep. The difference between the sand roads of the eastern and the clay roads of the middle and western parts of the State is that the latter are still longer and deeper. If we ever expect to get the power of combination and unity we must make better roads. We have determined to educate all the children of the State. In order to attain that desirable end we must have larger school districts; in order to have these we must put the roads in such condition in the country that the children can attend school from longer distances. There is no interest in the State which is not vitally concerned in the building of public roads; and I extend to you gentlemen from a distance, and to the citizens of North Carolina, to all who are here, the heartiest welcome, and bid you Godspeed in your great work.

The chairman requested Mr. Josephus Daniels, editor of the Daily News and Observer, Raleigh, N. C., to act as temporary secretary of the meeting, and the reporters for the papers to act as assistant secretaries.

Mr. W. B. Snow, of Raleigh, delivered an address of welcome on behalf of the county of Wake and the city of Raleigh.

ADDRESS OF WELCOME.

By W. B. SNOW, *Raleigh, N. C.*

MR. CHAIRMAN AND GENTLEMEN OF THE CONVENTION: In behalf of the city of Raleigh and the county of Wake I extend to you a cordial and hearty welcome. By your presence on this occasion we feel honored and deeply sensible of the importance of the occasion which has brought you together and the inestimable benefits that must flow from the work you will accomplish. We sincerely desire that your stay among us may be pleasant and conducive to an early and frequent return.

As the representative of the mayor of Raleigh and of the chairman of the board of county commissioners I am clothed with full authority to throw open to you the gates and bid you enjoy the manifold pleasures to be found therein. I can also grant you beforehand complete immunity from all legal punishment for reasonable infractions of the city ordinances. I am proud to say the condition of our public roads and the needs of the county do not demand the manual labor of any of the gentlemen of this body. Our chain gangs are full and we are well supplied with convicts, and I am happy to tell you they are doing good in the furtherance of the good roads movement.

The significance of the present agitation of the road question throughout this State, and, in fact, the whole South, can not be exaggerated. It marks the beginning of an era in the history of the country, the upbuilding of our State and its rescue from the mud and mire of a neglected past, the renaissance of commercial prosperity.

If anyone should ask what two things have been most neglected to the detriment of North Carolina's growth and development the answer would be immediately:

Education and roads. Of the two, unquestionably the priority in importance must be conceded to the former, and it has been. The legislature of 1901 and the present administration, whose chief official honors you to-day by his presence, have successfully met and dealt with the question of public education. That being accomplished, we now turn to the one remaining blot upon our otherwise fair record, the real obstacle in the pathway of our State's commercial progress—bad roads.

The attendance on this occasion manifests the interest taken by our people from all sections of the country in the subject of good roads, and I feel assured that the deliberations of this congress will be productive of untold blessings and benefits to the State.

As the guests of the city of Raleigh and Wake County you shall have the benefit of every possible comfort and courtesy. The board of county commissioners invite you to visit and inspect our public roads, and carriages will be furnished to any and all who may desire to take advantage of the opportunity.

RESPONSE TO ADDRESSES OF WELCOME.

By W. H. MOORE, *President of the National Good Roads Association.*

I am certainly glad to be with you to-day, and I am doubly glad to see faces here from nearly all the counties of North Carolina. I speak this with knowledge, because we have been to other cities and I know I see among those who are here faces we saw from counties as far as the Tennessee line. I am proud to be in the capital of your State on this occasion. Before this convention is ended we are assured we will have many men, several of national reputation, to address you, in addition to those who are now present in the hall. I received a telegram from Gen. M. C. Butler, of South Carolina, who is now on his way to Washington, and who is so deeply interested in good roads that he will stop off here and address you this afternoon.

If there is any man in this country who is doing good to arouse interest in the building of good roads in the rural districts it is Hon. A. W. Machen, superintendent of the rural free-delivery system of the United States Post-Office Department, who will address you during the deliberations of this convention. I desire to say also that I am proud to be on the platform with Governor Charles B. Aycock, who is attracting so much attention by reason of his stand for education and good roads. You do not realize what he is doing for this State. He is going down to the very basement of your affairs, doing it fearlessly, and the time is coming when he will be given a high monument for his services.

Yesterday when I was in Richmond talking to Governor Montague he remarked that he would send a special message to the legislature of that State. He said: "I see in North Carolina they are coupling two propositions together—education and good roads; I shall do the same and see if I can interest the people of Virginia." We find these conditions prevailing everywhere we have been. This movement is not spasmodic; it extends all over the country. In all the States this movement is taking root, and in a very short time the question of good roads will take precedence of the money question and similar political issues of the past. What you want is something that will improve your home, your children, your wife, your property, and that is good roads. The superintendent of schools at Lynchburg asked me what would develop the school interests of Virginia. The answer was: "The first thing to recommend to your people is a better road system." I will give you an illustration of how I couple the question of education with that of good roads: We will suppose that the schoolhouse is situated in the middle of the district; the child lives a mile or probably more from the schoolhouse, and the roads are so muddy it can not attend; sometimes the farmer takes his rig and carries the child; some days it remains at home. The children who attend every day advance more rapidly. One of two things must occur: Either that child must fall behind the others or the class must

be held back to accommodate the one who is absent part of the time. I lived on a farm until I was 16 years old, and I know what it is to travel through the mud to school, and I also know I missed many days when I should have been there. You can not have good schools without good roads. What we want to figure out in this convention is: How can we improve these roads? How will we raise the money to improve them?

This is the eleventh year I have been associated with this movement. It started in a Southern State—Missouri—in 1891. We next held a convention in Omaha, and then in St. Louis, and finally we got up to Chicago, and there held a national convention in 1900, with representatives from thirty-nine States, at which time this National Good Roads Association was organized, and in the meantime here was the good roads office at Washington struggling along with only \$8,000 a year; they hardly gave it enough to run the office. And yet in the last Congress the Lower House voted \$60,000,000 for rivers and harbors. We don't like that sort of treatment. Organize and go up to Congress and say you want an appropriation for the Office of Public Road Inquiries, to extend its educational work to all the States. The Government has a right to do it. Congress appropriates \$90,000 a year to test soils. Remember that we can not have successful rural free delivery unless we have roads that can be traveled over twelve months of the year.

After getting our national organization under way we then went to the railroads and asked them for trains, so that we might combine the good roads interest in making a campaign of the country. We succeeded in inaugurating this feature of the work on the Illinois Central Railway, and last year we went through five States with that train. We met many thousands of people in these conventions. The press of the land did wonders for the cause. The New Orleans Times-Democrat printed 132 columns on the road question. I want to pay a tribute to your newspapers here; they deserve as much credit for their public spirit as the papers of any place we have visited, because they have been unstinted in giving space for this convention. Well, we continued our campaign and brought the train to Buffalo last year, where we held the International Good Roads Congress, with a large attendance and representatives from abroad. Later the Southern Railway Company figured on the expense of this good roads train and concluded to put it on. It was done hurriedly. The campaign opened in your own State, at Winston-Salem, with a well attended convention. We went from Winston-Salem to Asheville, N. C.; Greenville and Chattanooga, Tenn.; Birmingham, Mobile, and Montgomery, Ala.; Greenville, S. C.; Atlanta and Columbus, Ga. Then we visited Augusta, Ga., at which place the governor was present, and many members of the South Carolina legislature came over with the governor of that State. Then we went to Columbia, S. C., where the legislature adjourned and took part in our convention. From there we proceeded to Charleston, S. C., and thence to Raleigh, N. C. We are going from here to Danville, Richmond, Lynchburg, and Charlottesville, Va. We have been leading up to a great national convention in the Southern States. I know of no more fitting place to hold such a convention than in Charlottesville, because there at Monticello lie the bones of the immortal Jefferson, the author of the Declaration of Independence. You should be a part of that national convention. We will try to build a mile of road from Charlottesville toward Monticello. We expect to have a great array of speakers, prominent men from various sections and States, to talk to the people. Through this convention we will bring together at the tomb of Jefferson representatives from every part of the country, the North and the South, the East and the West, to consider industrial questions instead of political. I suggest that you organize a State association while you are here. I want you to be in close touch with the national organization. You should map out a well-defined plan of operations that will extend into all the counties of the State. We sometimes find a great deal of fault with road officials if they do not accomplish as much as we think they

should, but I believe road officials are about as good and honest as any other officials. Whose fault is it if they have not money enough to do with?

Now how many miles of public road have you in your State? You don't know. What you need is a highway commissioner clothed with similar powers to those you have given to your railroad commissioners or your insurance commissioner. I know the feeling against creating a new office; but while you are delaying you are losing millions by the mud tax. I want to see your roads laid out upon uniform plans, and we want laws for that purpose. When you have a road commissioner the road supervisors will have a head in the capital of the State to whom they can refer for information and guidance; then you can develop system. I believe a little later the supervisors will have an engineer in each county who will direct affairs in the county and will report to the commissioner at the capital. In this way uniformity can be secured.

How should the money be raised? That is a very important question. In certain counties you have a tax valuation; you should have it in all. Any county can stand 10 to 25 cents on the \$100 valuation. I think the corporations and the railroads should help; they are willing. The cities use the roads and it is important that they should help improve them. A specific fund in each county for road purposes of 10 to 25 cents on the \$100 should be created by the next legislature of your State. If that is not sufficient, what is the next step? Issue bonds. All railroad or street-car systems in your State exist by reason of issuing bonds, and they would not exist without it. This method will build the roads now; you will enjoy them, and your children will help pay for them. The bonds, if not paid, will be refunded when they are due at a lower rate of interest.

If you will not adopt the bond system, the next plan is to call the State to your assistance. In Massachusetts, the State appropriated funds in 1892 to aid the counties in building roads; and in New Jersey this was done in 1893. The road officials said it was unconstitutional. They said the counties would not aid the State in building these roads. Some candidates were defeated on this issue. The supreme court decided it was constitutional. The money was raised, and in the State of Massachusetts, since 1892, we have seen over 600 miles of road built; millions of dollars have been added to the farm values by reason of it, and there are applications for \$2,000,000 more than the State has appropriated for that plan. In Massachusetts the plan adopted was as follows: The State pays one-third, the counties one-third, and the farmers whose lands front on the road, one-third. Under the New Jersey law, the farmers pay 15 per cent. In New York, four years ago the cities were brought in. In that State five-thirteenths of the property values are on the farms; the balance is in the cities. The plan proposed was that the State should pay one-half, the other half to be paid by the counties. That was defeated by the farmer representatives. Three years ago the bill came up again and passed, and \$50,000 was appropriated for State aid, last year Governor Odell recommended the appropriation of \$450,000, and now sixty-nine of the counties have made application for State aid. I do not believe such a system could be adopted in North Carolina now; but in a short time, if the subject is studied and agitated, public opinion will be developed in favor of State assistance.

As to the kind of roads, I believe our bones will be under the ground long before you have 25 per cent of the roads in North Carolina macadamized. You must deal with the earth road, the common dirt road. Why is it not possible to go ahead in each county and grade up your earth roads? Then, in the years to come, as the population and wealth increase, you can macadamize them. The dirt roads should be considered first. Make them not less than 24 feet wide, grade them up, put ditches on the sides, roll them properly, and you will have good roads ten months in the year.

The next question is, what shall we put on our roads—gravel, macadam, or burnt clay? I find you making brick for city streets and for houses, but not for roads.

Burnt clay on the surface will make a road for \$300 to \$400 per mile. It will cost you \$150 to \$300 per mile to put the earth road in shape to receive this material. If you are putting on macadam, Mr. Hanes, of Forsyth County, who is here, can tell you how. He is building roads by using convict labor at a cost varying from \$1,100 to \$1,700 per mile, 8 inches deep, 20 feet wide. In the North—in Illinois for instance—the roads are costing \$5,000 to \$7,000 per mile, and they are not better than these North Carolina roads. In Illinois we are using convicts in manufacturing, and thus bringing them into competition with our honest laborers. You should devise a plan in this meeting to carry to your legislature and thus secure a law to utilize the labor of all able-bodied prisoners, tramps, and vagrants on the public thoroughfares. If your legislators will not favor this plan, then put them out and elect men who will. It is a shame to deprive the people of the farms from enjoying the libraries, churches, and other advantages of cities on account of mud. I hope the women will form clubs and help the men. I think they can do better than the men. Will you organize and carry the fight into your own counties? The road question has not received support because there has been no organization. When you have organization, your public men will take an interest, and your Congressmen will fight for what you want. Good roads elevate schools and churches and the social life generally. You are putting a premium on ignorance by your neglect. Form a State organization that will carry this fight to every county. Appoint a committee of men who will draft legislation that will be carried to your legislature at its next session. These men will work between now and the time the legislature meets, finding out what other States are doing, and formulating a suitable law for this State.

INTEREST OF RAILWAYS IN ROAD IMPROVEMENT.

By M. A. HAYS, *Agent of Land and Industrial Department of the Southern Railway.*

Something like three months and a half ago this good roads train entered North Carolina for its first stop at Winston-Salem, where we met a hearty reception. Since that time we have visited nearly all the Southern States. We have had, previous to this, thirteen conventions. We have met many of the people, and we found everywhere an interest in road building and a cordial reception. This campaign of education was started because the officers of the Southern Railway Company believed that it would aid the people of the South; that it was a method by which the company could cooperate with the people in the territory which is penetrated by its lines. It would do us no good to visit a place where the people are not ready to cooperate. In selecting the stops for the train we have been careful to choose only those places where we knew the people were ready for the movement, and we are here to-day because the people of North Carolina have this subject under discussion and desire to push forward road improvements. The people of this city, of this State, and of the whole South are interested in the industrial development of the South.

The officials of the Southern Railway Company are among those railroad men who believe there is something for railroad companies to do besides handling traffic. They believe that railroads, in order to be successful, must also be the developers of traffic. I think almost all the successful railroad men of this country are to-day taking that view. Our company is, through its industrial department, working to build up the South; and when we bring this train to you it is only to help you in advancing your industry and agriculture. The South for a while lagged behind other sections of the country. The growth of our country for the most part has been along east and west lines, from the Atlantic to the Pacific. But to-day a new epoch has begun in the history of the country. People are coming from the North to take up your uncultivated farm lands; Northern capital is coming here to join Southern capital in building your factories. Ten years ago people of this section began to realize what they had in the way of great resources, and began to develop them for

themselves. When they did this it was easy to enlist outside capital. You know that outside capital only comes to those sections where the people believe in their own advantages and work to build up their own territory. The census returns for 1900, now being published, show that you have grown in manufacturing establishments as rapidly as any other section of country; that your percentages of increase in most cases have been greater than in the Middle and Western States for the census decade. The growth of the last three or four years has been greater and more rapid than for the whole decade, and now the South is having the greatest development any section of the United States has ever known. This is because of the resources, the climate, and the abundance of cheap, contented, efficient labor; because the people, recovering from the effects of war, have accumulated money to put into industrial affairs, and are developing their resources, and calling in outside capital. This development will continue. Shall it be along narrow lines, confined to a few communities, or shall it be widespread and along all lines? That depends upon the people of the South themselves. To secure immigration your section must be made attractive. You must have something besides a fine climate and hospitable people, something besides a rich soil. You must have those conveniences which will enable the immigrant to plant his home in agreeable surroundings. North Carolina has a large area of uncultivated farm lands, as has every other Southern State. Some of these lands are unoccupied. Others are in the hands of a poor class of farmers. The white farmers are being driven to the towns; the young men who once tilled the farms are not found there. North Carolina was for a time the leading State in this section in cotton manufacture; now, perhaps, Georgia and South Carolina are going ahead as fast as you are. You have built factories because you have found a cheap and desirable class of labor to go into them, drawing it from the farms. The white men from the farms have gone to the mill villages and put their children to work in the factories. Now, what is to be done with the farms that are vacated in this way? That is a great problem to solve. If you solve it, you must look to other regions of our country, perhaps to foreign lands, for a farm population, and to some extent for a mill population. Northern mill men can be induced to come South because they can live cheaper down here; you can have them if you can feed them cheaply, and you can do that with a good farming population around your mill settlements. The only way to get that is to get farmer immigrants from the North. They are ready to come here when they know that they can make money in this country, live in agreeable neighborhoods, have school privileges, and market their farm products easily throughout the year. These conditions can be secured only in one way—by building good roads all over the State. You can do this without much money. The experts here will tell you something about sand roads, dirt roads, and macadamized roads, and other speakers will discuss the different plans for securing money to build these roads. The greatest tax the people of the nation have is bad roads. Enough money has been spent in repairing bad roads to build good ones. Whatever you spend in building good roads will come back in the increased value of your farm land and the growth of your industries. If you increase the value of your farm lands in this State one dollar an acre by making improved roads, the total increased value would be \$33,000,000, and that would more than build all the good highways you need. The increased value of farm lands, however, would be much more than \$1 an acre.

Almost everywhere we go the question is asked, what is the Southern Railroad's interest in this question? It is the increasing of their traffic. They now handle the products of from 2 to 5 miles on each side of their tracks. In the winter season they can not get the products that are any farther away. If you had improved roads, they would be able to serve the country 20 to 30 miles away from their tracks. With improved country highways, the railroads have increased traffic and increased prosperity. The railroads prosper with the prosperity of the people and suffer from the

poverty of the people. If you are a shipper, you know that at some seasons of the year it is hard to get cars; that every railroad in the United States suffers from a lack of cars and locomotives, and that the industries of almost every community suffer on this account. This is because the traffic of all railroads is so greatly congested within a few months of the year. It is not divided over the twelve months as it ought to be. If there were good roads leading to every railroad station in the United States, the railroads would be able to get along with half the cars they now need. In an address at the Mobile convention, Col. E. L. Russell, formerly president of the Mobile and Ohio Railroad, gave figures from the traffic of that road at a Mississippi station to illustrate this point. In 1899 the cotton traffic from this town was very large; the next year it had fallen off 60 per cent and the next 80, simply because the highways were so bad the farmers could not at that season of the year (in February) move their cotton to market. Good roads make even trade throughout the year. If you have good roads, educational facilities, and such things in North Carolina we can fill the State with emigrants from every section of this Union. No State offers more natural advantages to the home seeker than yours. You have millions of acres of farm lands that people from other sections would be glad to settle upon if you had good transportation facilities, especially good roads.

Mr. Josephus Daniels moved that a committee of five be appointed to report at the afternoon session on a plan for the permanent organization of the convention. The chairman appointed the following gentlemen on that committee: Hon. T. G. Skinner, Hertford County; Mr. R. R. Cotton, Pitt County; Mr. J. P. McRae, Scotland County; Capt. P. C. Carlton, Iredell County, and Senator Whitaker, Wake County.

The convention then adjourned until 3 o'clock p. m.

WEDNESDAY, FEBRUARY 12, 1902—AFTERNOON SESSION.

At 3 o'clock the chairman called the meeting to order. The committee on permanent organization made the following report, which was adopted:

That the temporary chairman be made the permanent chairman; that Frank T. Ward be made permanent secretary, and that all the representatives of the press present act as assistant secretaries.

PROGRESS OF THE GOOD ROADS MOVEMENT IN THE UNITED STATES.

By HON. MARTIN DODGE,

Director Office of Public Road Inquiries, United States Department of Agriculture.

In the States which are older in experience in dealing with the improvement of the public roads, we find that there has been an evolution both in sentiment and substance, which is typical of what is to come in other States. It may therefore be useful to have your attention called to some of the important things that have been done and are being done in States that have advanced further in this movement.

It is an observable fact that, in all parts of the country, improvement of the highways has been deferred too long, much longer in fact than improvement along other lines. Our nation is reputed to be leading the world in enterprise, in progress, in increase of population and wealth; yet we are bound to admit that the improvement of the public highways has not kept pace with advancement in other respects, nor with the progress of other countries in this respect. It gives me pleasure, however,

to call attention to the fact that all over the country, East and West, and North and South, there is a sort of uprising among all the people for better and more permanent improvement of the highways. This began a little earlier in the East and Northeast than in the South and Southeast. As the newer States have copied to a great extent the constitutions of the older, so I believe will plans and laws for road improvement be copied. And for that reason it is very beneficial that the people should assemble, as they have done to-day, to exchange ideas, to form organizations, and to plan for the improvement of the highways.

It is well known to some of you that in the early history of this State and other States more attention was paid to the improvement of the highways than at the present time. I believe that one of the reasons for this may be found in the belief that the railroads would obviate the necessity for the improvement of the public roads. So far as long distances are concerned, the railroads and the water routes have superseded the common roads. Long-distance transportation has been cheapened beyond expectation, but the cost of transportation over the common roads is as expensive as ever. This being the case, it is high time we directed our attention to this great question.

It is a noteworthy fact that the agricultural lands are not so well able to bear the cost of improving the highways as they were at an earlier time. Property in the cities should be taxed as well as the land in the country for this purpose. If we depend upon local taxation alone the people who live in the cities may say: "Our land is taxed for the improvement of the streets and the farmers must take care of the roads in the country." That has been the accepted doctrine on which systems of taxation have been built up, but it has failed to bring the desired results. We find everywhere in the rural districts that there has not been the improvement there should have been.

I have already referred to the exceedingly cheap rate of transportation for the long haul, either by rail or water. It has been reduced on an average to a trifle over one-half cent per ton per mile upon the steam railroads, and upon the Great Lakes of the North it has been reduced to one-tenth of a cent. It costs you as much to transport your products 5 miles by animal power over your roads as it would cost to transport them 250 miles on the railroads or 1,000 miles on the Great Lakes.

I am requested by the chairman to say that we are glad to see the cadets from the Agricultural and Mechanical College who have just entered the hall. I am one of those who believe that the future of the State rests more upon the young than upon the old men, and let me say that I am exceedingly pleased to notice, not only in this State, but in the other States of the South, that you have elected young men for your governors. I believe it to be a very hopeful indication, and it should be encouraging to these young cadets to take notice of this fact. I shall never forget what, about two years ago, I heard Hon. Robert Davis, a distinguished Representative in Congress from Florida, say to a similar body of young men who were about to graduate at the West Florida Institute: "Any country is what the people of that country make it." I desire to emphasize that sentiment.

In dealing with this question of highway improvement the farmers should have every assistance that it is possible for the State and the General Government to give. In the Northeast, especially in New Jersey, Massachusetts, and New York, the principle of State aid has already been adopted. More than half the people in these States live in the cities. In New York two-thirds of the wealth is concentrated in the cities. Those who are most able to bear this burden now pay but a small proportion toward it; but they are willing and ready to contribute. I am an enthusiast upon this question, but I am myself astonished at the evidence that comes to me, showing the growth of sentiment in favor of State aid. A few days ago I had a communication from the State engineer of New York, in which he says that after a great

meeting of the road supervisors of New York, they have decided to request the State to issue bonds in the amount of \$20,000,000 to be spent for road improvement. They are encouraged to do that by reports from all parts of the State after several years' experience with the system. Much more than half of the money contributed by the State comes from the cities. In Massachusetts an effort is being made for an increase of the State aid fund from \$500,000 to \$3,000,000. In that State three-fourths of the expense for road improvement is paid by the State. We have in my own county in Ohio, Cuyahoga, of which Cleveland is the county seat, a population of practically 400,000. For several years we did without highways except such as were built by companies who had tollgate keepers and specific charges for every animal and every vehicle that traveled over the road. It is only within the last ten years that we have done away with the tollgates and are building our own highways, some of which cost as much as \$12,000 a mile. We were not able to do that until we provided in the law that no portion of the fund raised for roads should be spent for bridges or in the city of Cleveland, or in any of the municipalities near Cleveland, but that the entire sum should be collected and expended for the improvement of the roads in the rural districts—the roads that run by the homes of the farmers. As much as \$80,000 out of the \$100,000 contributed was paid by people living in the city of Cleveland. You would naturally think that some of them would object; but they have found that, unless the improvement is made in that way, it is impossible of attainment; so I have never known a single citizen of Cleveland to object to the payment or expenditure of that money.

In all my observation, covering most of the States of the Union, I do not find that anything is being done to make any substantial improvement in the highways except where one of three conditions obtain. The first is where they work prison laborers, as you are doing here in North Carolina and some of the other Southern States. The second condition is, a general fund of money paid into the county treasury and expended under the direction of county engineers, supervisors, etc. I find that there are a few counties—quite a number in the aggregate, but few in proportion to the whole number—that have that general fund. The third condition is that of State aid. Where the State is aiding, the people have not only made improvements, but are encouraged to go on and make additional improvements. It is thought by many, and possibly by most of you, that many counties and many States are too poor to improve their highways. The fact is the opposite. You are not rich enough to afford to neglect them, because the cost of transportation by existing means is an incubus upon your industry. It diminishes the returns of your labor and the profits of your industry. You are wearing out your lives, impoverishing your land, and decreasing the value of it by the lack of these facilities. It is a question of necessity, not of choice.

The General Government, which I represent, has in recent years contributed to the cause of road improvement but little in the way of money. It has given to the Office of Public Road Inquiries \$8,000 a year until last year, when it gave \$14,000, and for the current year \$20,000; and the Secretary of Agriculture has asked for a larger amount for the next year. This was for the purpose of investigating to see what the conditions are and what can be accomplished. The Secretary has appointed men to secure information upon the various phases of the subject. We have at Washington a laboratory, costing for the current year \$7,500, for testing the rocks and other substances in a scientific manner, and we are publishing the facts to those who desire them. I had the honor in my last report to the Secretary to recommend, through him to Congress, that they should appropriate in addition to any other sum required for this scientific work \$45,000, so that we might go into every State during the course of the year and build there an object-lesson road upon scientific methods, to show the people what substances were suitable, which were the cheapest and most desirable, and to give them all the instruction that can be given by literature and

lectures on the ground, and by the object lesson itself. Congress did not see fit to make that appropriation. But I still believe Congress ought to make it, and I have some reason to believe that it will be done. I hope that, where these object-lesson roads are built and the people see them and see the benefits of them, there will be a public sentiment that will uphold the members of Congress in making these appropriations.

The revenues of the General Government are contributed to by every citizen. People sometimes lament the burden of taxation under the laws of the State. I take no stock in the idea that the people are overburdened by this taxation, but I do not approve of extravagant taxation. You contribute many times as much to the General Government as you do to the State government.

You must understand that any scheme or proposition we put forward in this matter is based on the belief that the benefits coming from these expenditures would be many times what the expenditures would be. We are contriving to make the burden as light as possible and spread it over as great an area as possible and make all the elements of wealth in society bear their share, because they all reap their share of the benefits. If you could increase the value of your land one dollar per acre, it would make a fund of \$33,000,000. My own opinion is that the land in your State would be increased more than a dollar an acre by the permanent improvement of your public roads. In other States it has increased in value \$10 an acre, and probably more than that.

Col. W. H. Moore here took occasion to compliment the body of cadets from the Agricultural and Mechanical College who had entered the hall in uniform. He said that the conventions which had been held during the progress of the good roads train had been honored on other occasions by the presence of young men from similar institutions; but he declared that never before had he seen a better looking lot of young men than was now before him. The cadet band enlivened the occasion with several selections of music.

Director Dodge read a telegram he had just received from Secretary of Agriculture Wilson, saying that he regretted his inability to be present at the convention, and sending his compliments.

PRACTICAL SUGGESTIONS AS TO WAYS AND MEANS.

By GEN. M. C. BUTLER, *Ex-Senator from South Carolina.*

I had not expected to have the pleasure and honor of stopping at Raleigh and participating in your proceedings to-day, but my friends, Director Dodge and Colonel Moore, were so importunate, and I have found such an interest in the subject of good roads, that, at a great deal of inconvenience, I stopped over this morning, and am delighted to be with you. It was my fortune a good many years ago to be associated with what we then called the old "tar heels"—some thirty-five or forty years ago. In fact, it was my good fortune to have command of some of the crack regiments from this grand old State; and I want to say to you now—to the young gentlemen and to the old gentlemen—that if you work roads as hard as you fought in those days you will have the best roads in the world.

I have not prepared any set speech. I shall, therefore, occupy the time assigned to me with a few practical suggestions, having for many years taken a deep interest in the betterment of our public highways. It seems to me there are two leading questions, namely: (1) How are we to improve our highways and make them better? (2) What are we going to do to raise the money for their improvement?

I assume that no enlightened person in this or any other State will require argument to convince him of the value of good public highways. It is therefore unnecessary to discuss that branch of it. These gentlemen here are spending their time and money solving the first problem—to teach us how to build good roads. Various schemes and suggestions have been made as to how we shall raise the revenues in order to make the roads what they ought to be. I am frank to admit that in my State—and I have no doubt it is true in yours—with the exception of a few localities, we have not done what we might have done with the means at our hands. We could have done very much more than we have if our attention had been directed and our energies devoted to road improvement along lines within our reach. It seems to me the first thing we ought to do is to get an organization. What does a railroad company do when it proposes to lay out and build a railroad? It employs an engineer or a corps of engineers to survey routes; these prepare estimates from which the company ascertains the cost of moving the earth and stone; then the company proceeds to provide the means by which it can construct the road and equip it. And I submit to you, as I have to the people in my own State, that the first thing we ought to do is to effect a complete State organization. There should be appointed a competent civil engineer for the State whose duty it should be to survey and report upon every highway in North Carolina; and then, if I had my way, I would have appointed a competent civil engineer for every county or one for two or three of the smaller counties. I see before me now in the countenances of these bright young men the very material with which you can supply that want, and I have no doubt all of them who have studied civil engineering would be glad to get employment of that kind.

When these reports have been made, the next questions are: How much money will it take, and where are we going to get it? Where I live this winter I had to get out of my buggy and lead over a large part of the roads in that vicinity, because it was almost impossible to ride over them. We have done the best we could under the old system, and now we want a complete road organization. Those are the first things to settle. I see in the papers that in the State of New York it is proposed to enter upon a scheme to improve the public highways by issuing \$20,000,000 worth of bonds and distributing the proceeds in proportion as the counties and townships raise money themselves. But let me say what many of you already know: The people in the rural districts in the South—and I believe it is so in the North, both East and West—are not able to raise the amount of money necessary to improve the highways. During a long career in public life I have always found that the people do not object to liberal appropriations of the public funds, but they do object to having those public funds misspent or squandered or stolen. Now, gentlemen, the people in the rural districts can not stand the taxation, and they are the people who are directly interested. The people in the cities and the towns have facilities for raising money, issuing bonds, etc., that we people in the country have not; they can stand taxation better than we can. While, as I stated, we could have done very much more than we have done, it is a fact that the country people are not able to carry the whole burden of taxation. I submit that a reasonable sum should be appropriated out of the State treasuries annually. As the public roads are the property of all, and for the use of all, so should the costs be shared by all. Each State should make an appropriation and—as they do in the States of New Jersey and New York—say to any county in the State: “Here is \$100,000 in the State treasury. Now, you raise \$5,000 or \$3,000 or \$1,000 in any method you choose and we will duplicate that money from the State treasury.” Or you might carry out the same idea in connection with the townships. That would be a beginning. The next step I would take—and I state this on my own individual responsibility and as my own individual thought and no body else’s—I would go to the Federal Government, which has appropriated \$439,000,000 for the improvement of rivers and harbors, although the people do not

all get uniform benefit from those appropriations. It is a remarkable fact that of the \$439,000,000 appropriated in three-quarters of a century there are only two instances where the money has been misapplied by the United States engineers—one of recent date in Savannah, for which the poor creature is now suffering the penalty of his crime, and the other out on the Pacific coast some years ago. Possibly some of the appropriations may have been unwise. I do not suppose any enlightened man in this country will object to the appropriation for the improvement of rivers and harbors. Another appropriation is for this very school of young boys that you are educating. The Government has appropriated \$20,000,000 for experiment stations and agricultural colleges, and when the discussion was on, they wanted to know under what provision of the United States Constitution it was made. That question was asked in the olden days, and I had an ancestor in the United States Senate who refused to vote a dollar for the improvement of Charleston Harbor: but almost the first act of my official life was to get an appropriation of \$250,000 for that purpose. There is as ample constitutional warrant for the improvement of the public roads out of the United States Treasury—as large as there is for the improvement of rivers and harbors or for the support of the agricultural colleges. It is an appropriation from which we would all get benefit and to which we would all contribute a share. The Constitution of the United States confers upon Congress the right to establish post-offices and post-roads. Every highway is a post route if the Government chooses to use it. Even in the days of John C. Calhoun, he recommended the distribution of the surplus among the several States, and it was done. I think, gentlemen, the best thing for us to do is to go to our Representatives and Senators in Congress and say to them, "The great demand of modern times is the improvement of the public highways, and the Federal Government should contribute." When that proposition is made, the reply will be that when the Federal Government comes to the aid of the counties and States the counties and States will fold their arms and do nothing. But that can be obviated just as this appropriation for the agricultural colleges is; that appropriation is made with a condition that the States must help before they can get the benefit. Why could not this be done in an appropriation for public highways? I know it will be said that the moment the Government interferes the States will cease to make any effort. Now, I am an advocate of self-help; I believe that self-help is the best kind of help; yet I have seen in my experience hundreds of men and boys and enterprises stagnated and defeated because of the want of a little help from the outside. We are in that condition in regard to roads in the South to-day; and it is not confined to the South.

The road system of no civilized country has ever been made perfect without Government aid. This country did once spend many millions of dollars on the road from Cumberland, Md., to Wheeling, W. Va. I do not say the United States Government shall come and build the roads, but that they shall appropriate out of the public Treasury, to which we all contribute, a certain amount every year to be divided out among the States conditionally; and it will take all the money the United States Government can appropriate and all that we can raise by local taxation or issuing bonds, or whatever method we may choose. It is going to take a long time. The young men are coming on, and it is to the future that I am looking.

Do you know how much it costs the farmers to transport their products to market on the average of 12 miles? Nine hundred millions of dollars annually. Suppose we could save half of that, what an enormous saving it would be to the agricultural interests of the country. I know from experience that there are numbers of things that we could raise on our farms for market, but it will cost more to haul them over the average country roads than we could get for them. The railroads and steamships have in a large measure settled the question of the long haul. You can haul freight from California to New York cheaper than you can haul it from 15 miles out of Raleigh into the city. The productive capacity and energy of this country have

startled the world. The prime minister of Austria sounded the alarm among the European governments when he said that the prosperity of the United States was imperiling the industrial and commercial prosperity of Europe; and he was right. They undertook to put up a bar between us and China, but, thanks to the diplomatic ability of our present distinguished Secretary of State and the President, they could not shut the gates of China, Japan, and the Orient against our products. The great problem of distribution, so far as long distances are concerned, has been settled by the railroads and water lines. I think now we ought to go to Congress with the proposition that a part of the enormous Treasury surplus be used to improve the highways for the rapid and speedy delivery of our materials in the rural districts. The Government of the United States will be asked for \$6,000,000 to \$10,000,000 for rural free delivery of mails, and they ought to have it.

Let me say another thing: If something is not done in my section of country—I do not know how it is with you—the depopulation of the rural districts will be nearly complete; the people are not going to live where they can't get about. The young men will come to the towns and cities; the tendency is everywhere toward the concentration of population and the depopulation of the country districts; but decent roads would obviate this to a great degree.

There are many other phases of this question that could be discussed, but I have talked longer than I had expected, and I want to thank you for the interest which you are individually taking in this the greatest problem of to-day, and I trust that before you adjourn you will effect an organization in North Carolina. We have an organization in South Carolina, and we propose to be heard from on this question. The National Good Roads Association has done a great amount of good; it has put people to thinking; the leaven is working and will work until we get a movement by which the rural population of this country can derive their share of the benefits growing out of the liberal appropriations.

HISTORY OF GOOD ROAD MAKING IN MECKLENBURG COUNTY.

By Capt. S. B. ALEXANDER, of *Charlotte, N. C.*

At the request of your chairman, I appear before you to give a short history of what we have done in Mecklenburg County for good roads, but I wish first to call your attention to the conditions in our county. But in the first place, I should describe the county so that you will understand it. Suppose a man should go from Brunswick County diagonally across the State to Mitchell; he would there see everything that grows between Mobile, Ala., and Toronto, Canada; he would find all kinds of soil and topography. Mecklenburg is in the Piedmont region and has a red clay soil; and those who have had much experience with red clay roads know full well that they can be as bad as any upon the face of the earth. After the war I lived 9 miles north of Charlotte. The roads at times were so very bad that everybody was landlocked; the ladies could not go to church in winter; they hardly ever thought of going to town. The men went on horseback, and sometimes it took a good thoroughbred to carry you there. The only means provided for keeping up the roads was to call out the men and work them about ten days during the year. If you got for overseer one of those ill-natured men who does not like his neighbors, he would get some work out of the hands; but as a general thing no man likes to fuss with his neighbors, and consequently they would come late, and after a few hours stop working, so that by the end of the day very little had been done. The first thing that impressed me with the importance of good roads occurred in 1867. It rained almost every day for a month; the roads were horrible. I left home with two wagons, one with four horses and one with three, to go to Charlotte, only 9 miles away, for some fertilizer. I got a ton in one wagon and half a ton in the other, and when within a mile and a half of home on the return trip we stalled, and had to take the

horses out and leave the wagons there all night. We went back after the wagons the next day, and it took until nearly 11 o'clock to get them home. The merchant from whom I got the guano paid \$5 per ton freight on it from Baltimore to Charlotte. Considering everything, it cost me over twice as much to take the guano 9 miles from Charlotte to my home as it did to bring it from Baltimore to Charlotte on the railroad. We began to talk good roads, but the old people did not want to work them; they owned most of the property and were opposed to paying anything toward the public roads. It so happened in 1878 that there was a dearth of candidates and I was nominated for the State senate; but there was a greater dearth among the Republicans than there was among the Democrats, so we made no canvass and no promises. We came down to Raleigh free, and I proposed to the representatives that we have a road law that would make good roads; so we passed a road law and I was satisfied it was going to make good roads. When we went home and they found out we had passed a law taxing the people of the town and the county to make good roads it raised as great a fuss, as you can imagine. The newspapers took sides against us, and the friends of good roads in the county got powerfully scarce. Governor Jarvis called a special session of the legislature to sell the Western North Carolina Railroad in 1880 and we had to return to the capital; and they got up a petition from our county longer than from here to the street, signed by the people, many of whom had previously talked good roads. The representatives thought they had to carry out the wishes of their constituents, and they came down to the legislature with that great petition and passed a bill through the house repealing the road law. The newspapers were calling upon the legislature to repeal that obnoxious law, and after it was repealed in the house two pages carried the petition over to the senate. When the bill came over I made a motion to indefinitely postpone it. When it came to a vote, I voted "aye," nobody else said a word, and the president of the senate announced that the bill was indefinitely postponed. When we went back home everybody was astonished that a man would disregard such a petition from such a constituency. I knew my people were Scotch-Irish, and if you fight that kind you are going to "catch it." I found the public sentiment commencing to change before the next nominating convention, but it had not had time to change entirely; so they nominated a new delegation to repeal the law. It was done. But the law was in force long enough for the people to see that they could improve their roads, and the younger people, the preachers, and the doctors stood with me. The grand jury denounced the legislature for passing a road law which provided nothing to make roads with. The price of wood went up; nearly everything that a man had to eat had to come there by railroad; you could not have dairies and everybody had to keep cows, and you could hardly get about even on horseback. Mechanics who had moved from Richmond to Charlotte said they were going back to Richmond because they could live cheaper there. I went into the stores to find out what the prices were, and I found in our market there Irish potatoes from Scotland and Nova Scotia, cabbage from Germany, and other vegetables from distant places. As the overseers of the roads would not work, and the people had discovered that we could have improved roads only by taxation, I was renominated in 1882 to come back and reenact that road law. I passed the bill through the senate, but when it went to the house there was such hostility at that time to taxing the people for public roads that the bill was killed in the house against the protest of Mecklenburg's representatives. In 1884 I was reelected and we got that law virtually as we have it now. We have been building roads in Mecklenburg County and it is almost impossible for me to describe the change that has occurred in that county. You can see the improved condition of our farmers. Men come to town in carriages or buggies, regardless of season or weather; they come in with wagons loaded with all sorts of produce—chickens, eggs, milk, butter, peas, potatoes—and find a ready market; manufactories have sprung up there; to-day the census gives us 18,000, and we have a number of villages on the outskirts of the city that would

increase it to 30,000; and the price of land all around there has gone up at a wonderful rate. More than a year ago there was a piece of land escheated to the university. It was situated 5 miles from Charlotte and was sold at \$50 per acre and another portion of it sold at \$70 per acre. Before we got the macadam road from Charlotte out there \$10 an acre would have been an exceedingly good price for that land. The law we have now gives us a right of way of 60 feet for our public highways. In Charlotte Township our roads range from 40 to 60 feet wide, 20 to 30 feet of this being made of macadam and the balance of dirt. The dirt roads are always used in dry weather because they are so much easier on a horse. People have built farther and farther out until a great many business men now live outside the corporate limits of Charlotte.

It takes time to get good roads. We commenced in 1885. Our people were inexperienced and they commenced with the old sledge hammer, breaking rock and throwing it in and allowing it to be worn down by vehicles. We now have improved machinery and are building the roads rapidly. We have on an average 100 to 120 convicts at work. Our county is improving, I think, more than almost any county I know of. The value of land has increased; in fact on the macadam road it is very hard to buy at all. I do not know of any land there that could be bought at what people would consider a reasonable price, but off the macadam road land values are not so high. We have only about 100 miles of macadam road in the county at present, but we are still constructing and we are going to keep it up until we get the whole county macadamized so that every man will have the benefit of it. If you had been at the last election in our county you would have thought that the people did not care much about who was elected to most of the offices, but I think we had 20 candidates for the office of county commissioner, who has charge of the public highways and works the convicts. I am satisfied our good roads have had more to do with making Charlotte the great manufacturing town it is than anything else we have ever done there. Nobody in the county, whether he lives in the city or outside of it, is opposed to our road system. Everybody would be very glad to see it extended as rapidly as possible, and I do hope every county in the State will stir itself and try and catch up if it can.

The only way to get good roads is to get a law that will raise the money. While I admire General Butler's plan of having national aid and State aid, I am afraid I won't be here when that comes, and I want some good roads to go over while I am here. So I would impress it upon you to get a law now that will raise the money. Another thing is to be certain to get a law that will raise enough money. There have been one or two fairly good laws giving great dissatisfaction in the counties to which they were applied, solely because they did not raise enough money to make good roads. Our people are not penurious at all; they don't mind the expenditure of money provided they get value received for it. If you pass a law and get a little money and it doesn't make good roads, you simply set your county back. If you pass a law that will be sure to raise enough money to get good roads, you will find that it will give satisfaction.

I would be very glad to see any of you at any time in Old Mecklenburg and take you over some of the roads we have recently built there. We have improved as we have grown, and in the last few years the roads we have built are as fine as can be found in any section of the Union.

Dr. George T. Winston moved that a committee of five be appointed to report to-morrow morning a plan of organization for a State good roads association. The motion was adopted.

Mr. John W. Atwater moved that a committee of five be appointed on resolutions to report to-morrow morning. This was also adopted.

The chairman announced that the names of the members of these committees would be given out at the evening session.

Dr. Winston extended an invitation to all the delegates to the good roads convention to visit the Agricultural and Mechanical College and view the various departments of instruction that were being conducted there.

GOOD ROADS AND THEIR RELATION TO THE FARMER.

By T. B. PARKER, *secretary of State Farmers' Alliance, Hillsboro, N. C.*

You have been addressed by representatives of the Good Roads Association, by a representative of the good roads train, by our distinguished visitor, General Butler, of South Carolina, and by my good friend, Captain Alexander, who, I believe, is the only farmer who has addressed you up to the present time. I am here to represent the farmers of North Carolina, who comprise more than 75 per cent of the State's population. I am proud that I belong to that class. North Carolina is a great State and has a bright future. We are proud of her people, her history, and her traditions. She has been compared by some to Rip Van Winkle, but from such gatherings as this it is evident that she is waking up and realizes that a new century is upon us. The farmers of the State, if they wish to keep up with other classes, must wake up too. I tell you the farmers have interests that should not be forgotten and which call for as much consideration as those of the manufacturer. We are an agricultural people, and we should rise up and ask for our farmers the advantages enjoyed by people engaged in other industries. The public roads of North Carolina are to the farmers what the streets are to the residents of the cities. They are what the railroads are to the larger business community, and they should be so considered and treated. In this day of sharp competition the farmer needs to realize that he has as severe competition as the tradespeople, manufacturers, or other classes, and often more so, for some of our competitors do not count cost of production. Therefore the farmers of North Carolina must not be content with the methods of their fathers and grandfathers. To be successful we need to become progressive farmers, business farmers, having the executive ability of the manufacturer, the ingenuity of the mechanic, the business sagacity of the merchant, in addition to a practical knowledge of agriculture.

The representative of the Southern Railway has told you that that company is spending its money for the improvement of the public roads, because they will become feeders to the railroads. This company is giving us an object lesson and I thank them for it. We should learn from these people, for they are business men. They know that when the country has increased productive capacity by reason of good roads, then immigration will come in, farm lands will be opened up and cultivated, and the road will be in such condition that produce can be brought to the towns and cities, and the railroads will do more business than they have been doing. Good roads will mean much to the rural districts of the State by increasing the value of lands and building up good neighborhoods in which to live. The roads of Orange County are about as bad now as Captain Alexander says the roads of Mecklenburg County were in 1867. The same conditions will be found in other counties in the State. But I am persuaded that these conditions are not to continue. The interest here manifested in this movement speaks with no uncertain sound. I am glad that it is so. As a further illustration of our roads: I live a mile and a half from Hillsboro, and I doubt if six mules could have carried a ton of guano from there to my house during the recent bad weather. Since November the roads have been so bad that in going to Hillsboro I preferred to walk rather than to go in a buggy. To show you how very bad the roads are, it is only necessary for me to say that when I

send one of my negro servants to town, and say to him that he can ride if he wishes to, he says, "No, sir; I ruther walk."

This good roads movement means more to North Carolina than simply good roads; it means building up the country in many other ways, making our homes attractive, and bringing about possibilities that will add to our comfort and convenience. Good roads not only give evidence of thrift and prosperity, but add to the beauty and desirability of country life. They bring neighbors nearer together and obliterate to a marked degree the isolation of the average country home. They make travel a pleasure, thereby promoting neighborly visits, church going, and school attendance. We all appreciate the value of social intercourse. It cultivates and refines and molds people into broader and more useful citizens. It makes country life attractive and cultivates an air of refinement that can be obtained in no other way. It dispels many of the disagreeable features of ordinary farm life by bringing into the home rays of sunshine that drive out gloom. There is no class of people who need to have this social feature cultivated more than farmers. Social life brightens and polishes and gives a grace and ease in society that all the learning at our schools can not furnish. The schools are commendable, are doing a great work, and I wish we had more of them. I am glad to see the young men of the Agricultural and Mechanical College in attendance at this convention. The future prosperity of North Carolina largely rests with them. To the faculty I will say you are engaged in a grand work and in my opinion are doing more for the industrial advancement of North Carolina than any one factor in the State. To the young men composing the student body I would give encouragement and ask them to diligently prepare themselves so that they will be better fitted when they take the places on the stage of action now occupied by us that they may accomplish greater achievements, and add more to the history of their State than their fathers have. Especially do I ask the country boys to lend their influence to this good roads movement, so that when they return to their homes they can be instrumental in building good roads in their sections, so that the lives and homes of themselves and their neighbors will be made happier and brighter thereby. Good roads also mean that there will be a larger church attendance. We all know what that means. We believe in churches; there is not only a religious atmosphere that pervades them, but there is a social feature connected with them that is beneficial and a blessing to the people. I believe also that good roads will add materially to the public schools of North Carolina, and that if we had a good road system the public school money would do twice as much good as it now does under the present system. Children could go to school that are now deprived of that privilege; they could go a much greater distance than they now can, thus increasing the size of the school districts, and in that way make the schools larger and more effective. With good roads our people would take more pride in their schools and in their homes. I have evidence of this. With the advent of good roads in every county in the State I am sure that the people would take greater pride in their homes; make them more attractive and desirable, and in this way enhance their value.

There is also a financial side to the road question. We can no longer be content simply with the making of a crop; we must know how to sell it. Therefore we need to be posted as to what is going on at the other end of the line. We need to know how to economize in everything connected with the making and marketing of the crop. This brings us to transportation over our own public roads. There are carried over the public highways of the State by the farmers annually about 500,000 bales of cotton, 300,000 tons of fertilizers, 2,000,000 bushels of cotton seed, millions of pounds of tobacco, wheat, corn, and oats, and hundreds of carloads of truck of various kinds, together with quantities of timber, lumber, and every kind of merchandise. It has been demonstrated that it requires from two to four times the power to carry a ton over a bad road that it does over a good road. When our people fully realize what an expenditure of power and a waste of time and money this means there will be a demand for good roads all over the State.

When the manufacturer finds that his plant is no longer up to date he dismantles it and puts in the latest improved machinery. He is forced to do this to meet competition. The railroad people do likewise. They take off small cars and small engines and replace them with larger ones; they cut down grades and raise embankments, so that a train and crew can carry more freight than it formerly did. They are forced to do these things by their progressive competitors or else fail to make the dividend for which they are striving. Is there not a lesson in this for the farmer? Are not our public roads typical of the old machinery of the manufacturer? Have they not hills and low places that need attention? Can not our roads often be made straighter to lessen distance? The railroads attend to these matters so that a train can carry more and make better time. We need to attend to these things for the very same reason.

We have heard General Butler say that on account of the bad condition of our public roads and the high state of perfection to which the railroads have attained, fruit from California can be laid down in Raleigh at less cost for transportation than it can be brought over the public roads from a farm 15 miles distant. You see by this that the railroads enable the fruit growers of California to compete with the fruit growers of your own county towns. To successfully compete with the California fruit grower, we need to improve our highways so as to reduce the cost of carriage to a minimum. Nor are the fruit growers the only ones of us who have Western competition. You know, and I know, that the prices of corn, oats, hay, etc., here at home are not fixed by our own farmers, but by the Western supply. So the rich grain-growing sections of the West are competing in our own markets with us. The way to successfully compete with these people is to build good roads so as to enable us to get to market at any time and carry a full load, thereby reducing cost of transportation. The cost of transportation over bad roads is quite an item. A bad road is a relentless tax assessor and a sure collector. The expense in time, wear and tear of vehicle, and at times the "swear" and tear of the driver is no inconsiderable item. These are business considerations worthy of the attention of every farmer in the State.

A farmer living less than 6 miles from this place said to me this morning that 4 miles of the road leading to his farm were macadamized, and about 1 mile is fair dirt road, and he found that his team was pulled harder over the mile of dirt road than it was over the entire 4 miles of macadam road. He said that he could carry twice as much on the macadam as on the dirt road, and I know from experience he has not exaggerated. Testimony like this in behalf of good roads is worth considering.

It was my pleasure to spend some time in and travel pretty well over Mecklenburg County about a year ago. That was my first experience with macadam roads, and I made it a point to inquire of the people and get their opinion of them. I spent a night with a farmer who lived on a macadam road 8 miles from Charlotte. I inquired of him how much nearer to Charlotte he was in time now than before the macadam road was built. He said that he could drive from Charlotte in less than an hour, whereas formerly it required an hour and a quarter in good weather, and in bad weather he could hardly travel at all. I then asked about the carrying capacity of his team. He replied that before the era of good roads, if the roads were dry, two horses could easily carry half a cord of wood to Charlotte, and from that down to an empty wagon made a load, according to the condition of the road. Now it is not a question of how much the team will pull, but how much the wagon can carry. He also said that now he has the advantage of the rural free delivery and gets his mail every morning at 9 o'clock—gets the morning papers just as they do in the city. Do you realize what that means to the farmers of North Carolina? Wherever you find a reading public you find an intelligent people. I inquired of him the influence on the price of land on account of the macadam road. He said, "There are now no lands for sale, but if any were for sale they would be worth at least \$5 per acre more, if

situated on the macadam road now than they were before we had the road." This means an advance in price of more than \$3,000 a square mile. Suppose you reduce it to \$1 per acre; that would mean \$30,000,000 for North Carolina. I believe if we had good macadam roads all over North Carolina, the value of land would be advanced more than a dollar an acre. I find that the lands on some of the macadam roads that I have traveled over sell at from \$15 to \$20 per acre and higher, and no better land than some which can be bought at from \$4 to \$6 per acre in sections where there are no macadam roads, the difference in price being caused by good roads and better neighborhoods.

True economy and our interests from a financial standpoint demand that we should have good roads. It is not that we are so poor that we can not stand the expense of making good roads; we are too poor not to have them. Convince our people of the necessity of good roads, and, when they are once aroused, they will have them at any reasonable cost. The bravery and daring of North Carolinians in every effort in which they have participated from the days of the "Regulators" in the Piedmont section, when they routed the colonial court then in session in Hillsboro and took charge of the docket and made entries thereon suited to their ideas of the case, to the scaling of the wall at Pekin, China, last year. First at Bethel, farthest at Gettysburg, and last at Appomattox is an acknowledgment of their bravery that they have fairly won. We are truly American. As an illustration, in the county in which I live there are only nine persons of foreign birth. With such a record as we have we do not propose to be left behind in the march of progress. While it takes sacrifices to build good roads, it is not the sacrifice of lives such as our fathers laid on the altar of their country, but the sacrifice of dollars. If we now had the money spent during the four years of "misunderstanding" with our Northern friends, from 1861-1865, and the four years' service of the men engaged on both sides we could build macadam roads in every township in the United States. Yet we survived that. If we had the money that we recently spent in freeing the Cubans and that which we are annually spending in the Philippines to prevent them from becoming a free people we could macadamize every important road in the country in a short time. Strange to say that some who help to bear these war burdens without complaint would object to being taxed to build good roads at their doors. We are all interested in the Isthmian canal and hope that it will be constructed at an early date, but good roads in our immediate neighborhoods would be of far more benefit to us than that canal will ever be. General Butler spoke to you about national aid for good roads. I am neither a Senator nor lawyer, but simply one of the plain farmers, but I agree with General Butler. Since this nation has become "the" United States instead of "these" United States, as formerly, I see no impropriety in its making appropriations for public roads, as it does for other purposes.

You have heard mentioned our cotton mills and other manufacturing interests, all of which we are very proud of, but I tell you there are other interests in North Carolina than these that need to be nursed. Our agricultural interests, which constitute the foundation on which all others are built, need attention. I know of nothing that would be more helpful and would give new life to agriculture quicker than good roads.

I want to say in conclusion, that all the talking done in this convention will not build one yard of good roads. You must carry the enthusiasm of this convention into your counties. The results here will not be worth a cent unless reduced to practice. If you will carry the enthusiasm of this convention into the different counties of the State and convince the people of the necessity of good roads, I believe we will get them all over the State. We are a conservative people, but when our people are shown their duty, no people are truer or more faithful in the performance of it. And when we go to the counties and show them the necessity of good roads and get them interested, there is no power that can keep them from having

good roads. With such a leader as we have in this good roads movement in the person of our worthy governor, we will know no such word as fail. We find him in the forefront of every educational or progressive movement that promises good to the people, whether it be literary or industrial, encouraging us to greater achievements. He is determined to bring North Carolina to the front. May success crown his efforts.

Just here I am reminded of an incident of our late war, 1861-1865, when in an engagement a command to charge was given. A captain from one of our eastern counties led his company in the charge and soon found himself some little distance in advance of them. He looked back and said to his command: "Boys, why in the devil don't you come on?" It is useless to say that they immediately answered his question by quickening their pace in true Confederate style. This captain was an Aycock and a kinsman of our governor. The thrilling words of the leader in that charge seem to have been an inspiration to the governor. In this movement that means so much for North Carolina he stands in the forefront a tower of strength and an inspiration to our people, and says: "Boys, why don't you come on?" Then let us move forward with a rush that means no stopping until the enemy is routed whether that enemy be illiteracy or bad roads.

On motion, the meeting then adjourned to meet at 8 o'clock p. m.

WEDNESDAY, FEBRUARY 12, 1902—EVENING SESSION.

In calling the meeting to order, the chairman announced that on account of an unavoidable accident to the stereopticon apparatus, Professor Holmes would not be able to give his illustrated lecture on good roads, as announced on the programme, and that a rearrangement of the programme was rendered necessary.

ECONOMICAL ROADS FOR RURAL DISTRICTS.

By Prof. W. C. RIDDICK, *of the State Agricultural and Mechanical College.*

There is no longer need of argument to prove that this State must have better roads. The people are convinced of the necessity, and the only question now is, how to get them. Most people are also satisfied, I think, that the system of individual work is not only unfair, but can never be made to give even passable roads. Therefore, the necessity of some form of taxation. And let me say here that I do not consider money collected by the State, county, or township for the improvement of its roads as a tax. It is an investment which, if judiciously made, pays a handsome dividend to everyone who travels the roads and to every town into which they lead.

On the other hand, we must not underestimate the difficulties of the road problem. We must face fairly the conditions which exist. Our State is one of magnificent distances and magnificent people, too, but not many of them. With at least 40,000 miles of public roads, we have only \$260,000,000 of taxable property; while the State of New Jersey, to which reference is so frequently made, has \$900,000,000 of taxable property and only 20,000 miles of public roads. Yet Mr. J. E. Owens, a citizen of that State, says in his paper read before the International Good Roads Congress at Buffalo, that after thirty years of work and the expenditure of three and a quarter millions of dollars, only 700 miles of road have been built, and that the road problem in that State is not yet solved. From the report of the commissioner of public roads of New Jersey I find that the average cost of stone and gravel roads built in that State from 1893 to 1899 was more than \$5,000 a mile. Granting that a good stone road of sufficient width for our purposes can be built for half the above

amount (\$2,500 a mile), which I think is as little as we can reasonably expect, we find that it will take \$50,000,000, or an annual expenditure of \$1,000,000 for fifty years, to macadamize one-half of our roads, with no provision for keeping them in repair. I do not wish to be understood as opposing the macadam road. I realize fully its excellence—its preeminence in fact—and I know that in some localities in our State the traffic demands the best macadam or gravel roads that it is possible to construct. I am glad to say that in several places in this State such roads are being built.

In the thinly settled sections of our State, however (which include the most of it), road improvements must be made gradually, and these road conventions will have accomplished great good if they cause the people to make a beginning and to begin right. Then whatever money may be collected for this purpose will show its results in better roads. If the end finally to be reached is constantly kept in mind, it will usually be possible to make all work done count as permanent improvement; our roads will grow better each year; the people will become more willing and more able to spend their money for them, and eventually we will have a system of roads which will be a credit to our State. But the majority of our people will not be willing to tax themselves until some plan is worked out which promises in a reasonable time and with the expenditure of such amounts as can be collected without excessive taxes to give to every man assessed the benefits of better roads. Since the money must be raised by taxation and since our people are too conservative to tax themselves beyond a reasonable limit for any purpose, therefore the amount of money expended must be limited and the work done must cover a large territory.

I frankly confess that the idea of spending enormous sums of money in constructing great thoroughfares from New York to San Francisco, or from Murphy to Manteo, or even from the mountains to the seashore, has never appealed to me as a solution of the road problem. I would rather see a fairly good road from Rolesville or Wakefield or Garner to Raleigh than either of the above-mentioned thoroughfares, unless it should happen to pass through Raleigh. I make this statement deliberately, and do not believe I am more selfish than the average man.

What we need in this State is a plan by which we can use comparatively small amounts of money in such a way as to give in a few years at most better roads throughout the section undertaking it, and so that the work done will be of a permanent nature and lead toward a final condition of first-class roads. I believe the proper way—in fact, the only way—to begin is by building the best roads possible out of the materials immediately at hand, and for many years to come the larger part of our roads must be built in this way or not built at all.

The construction of any road consists of the following operations: (1) Location; (2) grading; (3) construction of roadbed; (4) putting on the surfacing material.

1. *Location.*—This will, in most instances, consist in making a relocation of roads already existing. The "pig track" location of the olden time and the "hedgerow" location of more recent years, which is, if possible, worse, must give place to a location made by an engineer with reference to the topography of the country instead of line fences and the value of land, so that the grades may be reduced to some reasonable limit. The relocation of roads should be made with as little change as possible from their present position, but in some places considerable change will be necessary, and this will no doubt meet with opposition on the part of individuals. Unless a community determines to let the road go where it should, regardless of property lines, etc., and has a law which makes this possible, the best results of location can not be obtained.

A road between two points should go as nearly as practicable in a straight line; but it is frequently necessary to vary from a straight line in order to escape the necessity of excessive grading, to avoid marshes and other obstructions, or to find suitable places for crossing streams. In the mountains it will generally be found necessary to

vary greatly from the straight line to avoid steep grades. In the middle section of our State the deviation need not be so great, while in the eastern portion long sections of road can generally be made perfectly straight. In every case a route should be selected which satisfies as nearly as possible the condition of directness, and which can be built at a reasonable cost without excessive grades. Therefore, the location adopted will depend somewhat upon the amount of money available for construction, and for cheap roads the location must be so chosen that the amount of grading will be small.

2. *Grading.*—However carefully the location may have been made, some grading will be necessary in the hill and mountain sections of our State. There are several things to be considered in deciding what grade shall be given at a particular point. If the road is in the main comparatively level, it is important to keep the grade as low as practicable, for one steep hill may cut in half the load which a team could otherwise pull over a long section of the road. If, on the other hand, the road runs through a hilly section and it has been necessary to use steep grades at other points, we should not go to great expense in order to make the grade small at the point under consideration. By cutting through the hills and filling in the valleys, or by curving the road so as to avoid them (see frontispiece), steep grades can always be avoided if we are not limited as to distance or cost of construction. Thus we see that no fixed rules can be given as to either location or grading. The Romans built their roads straight, at very great expense, in order to get the shortest line. At a later period it was argued that a road should be winding to make it agreeable. The modern engineer or road builder is not bound by either of the above rules, but has for his aim to get the best road possible out of the money available.

It is generally considered that 6 feet in 100 is the steepest grade allowable. But where the amount of travel is small, and with light vehicles, grades as high as 10 feet in 100 have been used. These steep grades should be avoided if it is possible to do so with reasonable expense or increase of distance, since they greatly reduce the load which a team can pull on a level road.

3. *Construction of roadbed.*—Drainage is the important object aimed at in constructing the roadbed. "The gospel of good roads is thorough drainage." The foundation and roadbed must be drained, and the surface must be drained. In all ordinary cases this may be accomplished by having ditches of sufficient size and depth on either side of the road and giving the surface a proper slope from the center toward each side. Where there is no grading to be done, and the ground is reasonably firm, the roadbed is built by simply digging a ditch on each side and throwing the dirt to the center. If nothing more than this is done, the improvement in the road will repay many times the expense incurred. The bottom of the side ditch should be not less than 2 feet below the center of the road, and in flat places which are inclined to be marshy the depth should be greater. The slope of the surface from the center toward each side should be three-fourths of an inch to the foot or more. In wet, spongy places it is frequently necessary to make provision for underdrainage, in addition to the side ditches. This may be done with cross drains running from the center to the side ditches, and placed not less than 2 feet below the surface, or by a longitudinal drain placed under the center of the road, from 2 to 4 feet below the surface, and emptying to one side at the first opportunity for doing so. The best material for these underdrains is 2 or 3 inch tile, but they may be made of brick or even rough stone.

A road should not be made any wider than is necessary, since the narrow road is not only cheaper, but it is also better and more quickly drained, and lack of drainage more than anything else will destroy an earth road. For the ordinary country road, where the travel is small, a width of 16 feet, exclusive of side ditches, is sufficient, since this allows teams to pass.

Where the road crosses a marsh or swamp and the soil is a soft mud which will

not, in its natural state, support an embankment, and is too low to be successfully drained, there is no better method of constructing a roadway than by putting in one or more courses of logs at right angles to the road, their length being equal to the width of the road, thus building up to the level of the water. The earth road is then built on these logs. The logs should not rise above the water, as they would soon rot, whereas they will last indefinitely under water.

Wherever water must pass from one side of the road to the other, it should be carried underneath with a culvert, and never allowed to flow across the road surface. For these culverts there is nothing better than terra-cotta pipe, which can be had in any size up to 3 feet in diameter. These culverts must be made large enough to carry the water during the heaviest rains, and if it is impossible or inconvenient to use a single pipe large enough, two or more may be placed side by side. Under no circumstances should wooden culverts be used.

All streams should be crossed by bridges—never by fording. This is true for two reasons: (1) Because it is next to impossible to construct a ford which will not become a bad place and give continual trouble; (2) because there is no way in which we can save more grade with as little trouble than by crossing the streams as high as possible. Especially is this true for the smaller streams which flow in narrow valleys, and where by building short embankments at either end of the bridge, we may escape a large part of the hill on each side. Then there is the danger and inconvenience of the ford in times of high water.

4. *Surfacing material.*—The work of locating, grading, and constructing the roadbed will be about the same whatever kind of road is to be built. The object of the road covering is to keep the water out of the roadbed and out of itself, and to furnish a firm unyielding surface for travel in all sorts of weather. It is generally conceded that the broken-stone or macadam road covering is the best, and I shall not attempt to disprove this; but I do believe that throughout the larger portion of our State more good will be accomplished by building the best roads possible out of the material at hand than by attempting to build the very expensive kinds.

In fact, there are few, if any, places in the State where a fairly good road can not be built by a proper use of the materials alongside of it.

In those places where the soil is a sandy or gravelly loam, and the country is comparatively level so that little grading is necessary, a very good road may be built by simply cutting the side ditches, raising the center, and then packing thoroughly with the best roller that can be used. These conditions exist in a large number of our eastern counties, and roads can be built here at small cost. Where the natural soil has an excess of sand it loosens in dry weather and makes a bad road. This can be remedied by adding a layer of clay 4 or 5 inches thick, cutting it with a disk harrow and rolling thoroughly, being careful to have the surface well rounded when the rolling is completed. This mixture of clay and sand packs under traffic and is well nigh impervious to water. It makes the best sort of dry-weather road, and is not likely to become very bad even during long rainy periods. Such roads have been built in South Carolina at a cost of from \$100 to \$200 a mile, and have proven very satisfactory.

Where the soil is a fine adhesive clay, such as we find at many places in this county and in the whole central portion of our State, it is impossible to make a good road surface without the aid of some other material, though by putting the roadbed in proper shape to secure good drainage and rolling we get a splendid dry-weather road, and one that remains fairly good except during long wet spells. Fortunately, however, there is no part of our State in which we can not find close at hand suitable materials for improving the surface of our clay roads. I have been told by the road supervisor of this county that he has never failed to find suitable gravel for surfacing his roads within a mile of where it was needed, and I think this county may be taken as a fair sample of the middle section of the State. A 6 or 8-inch layer

of this gravel, used without screening, has been found to make an excellent road surface if it is given a good transverse slope and well packed and rolled. In fact, it seems to be as satisfactory as the macadam roads constructed at a very much greater cost. Even where no suitable gravel is convenient, if a clay road is properly ditched and underdrained, it may be put in fairly good condition by covering with a 4 or 5-inch layer of the best gravelly or sandy soil obtainable, giving the surface the greatest allowable transverse slope and thoroughly rolling. Such a road, however, will require frequent repairs to keep it in good condition. Whatever material is used for surfacing, the roadbed should be first well packed either by rolling or by being opened to travel for some time, and should be given about the same transverse slope that the surface is to have. The surfacing material should then be put on in layers 3 or 4 inches thick, each layer being rolled.

In some places where the underdrainage is necessarily imperfect it will not be possible to secure a firm road by placing gravelly soil or even gravel on the clay. In such places it may be necessary to put in for short distances a Telford subpavement of such stones as may be found in the adjacent fields, or perhaps taken out of the road at some point near by.

In the mountain section of the State the construction of roads is largely a question of location and grading. To prove what may be done here at a comparatively small cost, it is only necessary to mention the famous Yohahlossee road from Blowing Rock to Linville, or the road from Blowing Rock to Boone, which were built at a cost of about \$500 a mile. On neither of these was any surfacing material used except what was found immediately along its line.

By the use of improved machinery such roads as I have described can be built in the eastern portion of our State at a cost of from \$100 to \$250 a mile. In the central and western portions the average cost need not exceed \$500 a mile, and will be less where little or no grading is needed.

I do not claim that these roads will be perfect in all respects, but they will be a great improvement on the present roads. Besides, all the work done will be in the right direction, and better surfacing material can be put on as fast as we are able and in those places where it is most needed. If, in connection with this road improvement, some plan can be devised to make the people use wide tires, the value and durability of the roads will be greatly increased. In fact, I know of no way in which the same amount of money can be spent with more advantage to our roads than by paying a small extra price for wide-tired wheels. But we can not use wide tires until some improvement is made in the roads.

I do not think we should wait for the State or the United States to build our roads. The Federal Government should collect and give out information on the subject of road building. The State should disseminate information of a practical nature and furnish general supervision so as to secure uniformity of method; and, if the State and United States can be made to contribute a part of the expense, it is all the better; but we must not wait for them to begin.

No county should plead poverty as an excuse for not improving its roads. The poor counties can not afford to be without better roads. The richer ones must have them. I believe the county is the proper unit to undertake the work. Let the people of each county meet and consider the matter as a business proposition, and decide to make a liberal investment in roads—15, 20, 30, or even 50 cents on the \$100. Then employ somebody, regardless of politics or religion, who knows or will learn something about making roads, so that the money collected will be used effectively. Buy such machinery as you can afford and can use to advantage, but do not be too fast about buying intricate machinery. Picks, shovels, plows, wheelbarrows, dump carts, mules, and convicts are good road machines anywhere and at all times. A good heavy roller is also a necessity, and I think a steam roller of 8 or 10

tons weight is by far the best, though a heavy horse roller does very good work. Expensive machines should not be bought until you are sure you need them and can use them in your locality.

I must confess that for the poorer counties, with only a million dollars or less of taxable property (and about half the counties of our State come under this head), it seems rather a hopeless task to undertake the improvement of perhaps 200 miles of road by taxation alone. It seems to me that if the people of such a county are thoroughly in earnest and determined to have better roads, they might adopt with success some such plan as follows:

Sell \$2,000 worth of bonds and with the proceeds buy equipment about as follows:

Six wide-tired dump wagons	\$500
Fifteen steel wheelbarrows.....	100
Harness	100
One-horse roller.....	600
Picks, shovels, plows, harrows, etc	150
Portable steel cage for housing convicts	500
Sundries.....	50

Levy a tax of 20 cents on the \$100. This will give you about \$2,500 a year, to be expended as follows:

Taking care of 15 convicts.....	\$1,000
Guard for same	150
Road supervisor.....	600
Leaving for equipment, repairs, and the purchase of materials, such as culvert pipe, bridge timber, etc	750

When the county has made this preparation I believe the people living along the various roads will be glad to furnish the necessary teams in order to get their roads worked. Of course the success of this plan depends upon the man employed as supervisor. He should be a man of good sense and judgment, who has some correct ideas about road building and is anxious to learn more. Don't make the mistake of employing a man who knows it all, and thinks that every man who makes a speech or writes a book on road building is a wild theorist and knows nothing practical about the subject.

The above plan is suggested as a beginning, and if it proves successful additional equipment of machinery may be purchased as needed, and the plan can be enlarged in other ways as fast as the county can afford it.

GOOD ROADS AND THEIR RELATION TO COUNTRY LIFE.

By Gen. Wm. R. Cox, *ex-president State Fair Association.*

I have attended many important conventions in this State, but never one so representative of the industrial enterprise of our people, nor one that gave promise of greater usefulness to the State than this good roads convention. We have met to consider one of the most practical and important questions that can interest our people, the improvement of our highways. If the country roads were only auxiliary feeders to the railroads, that alone would be sufficiently important to demand their improvement. And for this reason the railroads themselves are heartily cooperating in this work. The General Government, fully alive to this important matter, has an office which is continually distributing good roads literature; and I am gratified to know that one of the ablest and most comprehensive treatises on the subject was prepared for the General Government by a citizen of North Carolina. No State has had a more competent representative in this movement than Prof. J. A. Holmes, of this State. In the State of Massachusetts—a State of great progress and intelligence—the public roads are built by public taxation. The people took it into their own

hands and formed an organization in behalf of good roads and forced their representatives to carry out their wishes. They made it a political question, not in a party sense, but they resolved that they would vote only for such candidates for the legislature as favored taxation for the upbuilding of the public roads. But that State has different conditions from ours. It is a State of manufactures, and the lands are comparatively poor, and hence it was necessary for the State to build the roads. In New Jersey they have the cooperative plan. The county, the township, and the State are all cooperating to build the roads, and they probably have a more perfect system of road building than any other State. The cooperative system as practiced in New York, Virginia, California, and other States has been more generally approved than any other. Some of these States have a roads commission whose duty it is to look to the supervision and construction of roads in the different counties. The way the State cooperates with the counties is as follows: When the county builds a certain amount of road, then the State contributes a certain proportion to the aid of that county. When one county secures this aid, others are stimulated to move in the matter. I heard General Butler to-day advocate that we apply to the General Government for aid. That is a little too far off. If you want a thing done you must make a start yourself. The General Government is now distributing good roads literature. If it finally sees fit to aid us, as it does the owners of the arid lands of the West by irrigation, very well; but we must rely on ourselves in the first instance if we hope to see our roads improved in this day and generation.

The legislation in this State, and we have legislation, is founded on what is known as the Mecklenburg system. In Edgecombe County we have a poll tax of $37\frac{1}{2}$ cents, and a tax of $12\frac{1}{2}$ cents on \$100 worth of property from which we realize \$8,000 per annum, and we use part convict and part day labor. This system, where you have energetic men, capable men, progressive men, to take the work in hand, will give very general satisfaction. Unfortunately there is great backwardness on the part of the people to change their old habits, to abandon the old ruts of their ancestors; but when a movement of this kind commences and good roads are introduced, it is not going to stop. I have not known the people in any portion of this country who have once commenced the intelligent construction of public roads who will ever be satisfied with bad roads. Unfortunately the eastern part of this State has not been progressive in the improvement of its highways, and yet we have fewer difficulties to contend with there than in any other section. Our roads, while easily improved, are shamefully slighted, while there is the greatest necessity for their construction. The counties of Lenoir, New Hanover, Edgecombe, and Wayne have taken the matter in hand, and likewise some eight or ten of our western counties are to be congratulated for their enterprise. We find that the centers of intelligence are most active in the construction of good roads. Wilmington, Charlotte, Raleigh, Asheville, and Winston are moving to the front and we bid them godspeed. The great desideratum in this work is a good, progressive board of county commissioners. Here is where the work commences. You may think you can secure them easily, but, my word for it, you get an undesirable set more easily than you can get one good commissioner. If the taxes are justly imposed, and the money intelligently expended, the most satisfactory results will follow, and the kickers will be few in number.

We are indeed very far behind the times in this enterprise. We know that Rome so constructed her roads that they exist to the present day. In traveling over the small and mountainous country of Switzerland one is impressed with the magnificence of the roads built regardless of labor and expense; thus they have made their country the pleasure ground of the world. That country, on account of her superb roads and magnificent scenery, has millions of dollars poured into her coffers by tourists year after year; and I do not hesitate to say that if we had in western North Carolina, which is recognized as the Switzerland of America, roads approaching such as they have in Switzerland, thousands upon thousands of dollars would be brought by tourists

into our State every year. The scenery of our mountains is magnificent, the climate is all that heart could desire, and the people of this continent who are a traveling, intelligent, and restless people spend their money only where they can have facilities for transportation.

I favor good roads for the benefit of the laboring man. I sympathize with him when seeing him with a poor horse carrying through the mud his little load of wood to town to sell it to people poorer than himself. I am in favor of good roads to benefit the wealthy man, to enhance the value of his property. Poor people and wealthy people are alike benefited by good roads. On starting this matter here in North Carolina, I am delighted to see the interest which has been so generally aroused. We have present representatives from many different States, who are generously lending us a helping hand. I am gratified also to see the ladies taking an interest in the matter. We must have good roads, and there is nothing which so stimulates a man to good deeds as a good woman. As the ladies attend church more than we do, I call their attention to the facilities good roads afford country people for attending church, and the tendency of bad roads toward bad words. How could one expect a good sermon from any minister who has come to church through mud and arrives with his coat all bespattered. It is enough to make anyone forget his duty. Every class of our citizens is interested in this movement. The proposition is so clear that it does not admit of argument. The only question, therefore, is not whether we can afford to be taxed to build good roads, but whether we can afford the expense of traveling over such roads as we already have. Some years ago I was traveling on a stagecoach in western North Carolina, and was favored with a seat by the driver. I asked him whether he always traveled that same road. He said: "Not in winter; then I travel the lower road." Upon my inquiring of him where that road was, he answered: "About 2 feet under where we are traveling now." In eastern North Carolina we have naturally a good road for about eight months of the year, when the farmer does not especially need it, for he is then cultivating his crop. After the crops are gathered, then they must be hauled to market, and from that time forward we are traveling on the "lower" road for about four months in the year.

The antebellum style of "working" the public highways, which generally prevails, is about as well suited to the purpose as were the old militia "musters" to the development of actual soldiers. The improved method consists in raising money by property and personal taxation and the employment of our own and hired labor. The first thing is to build an object-lesson road; start at your county town and build a mile or two on the principal roads leading out, as Raleigh is doing now. No one can visit Raleigh and examine her roads without being impressed by the manifest improvement. This is a day of progress. If you want to improve your country and educate your people, give them good roads. I think a railroad of itself passing through a country is a great educational institution. It exhibits will power, order, and promptness, and it shows those who reside near it the different classes of people as they move about the world. We are too backward in taking advantage of our blessings, and consequently are often left out of the procession. I know you are paying an enormous tax when you have only bad roads. Then why not do better? We have climate, soil, and everything else except good roads; and it is our own fault if we don't get them. We have legislation on this subject in our State which already enables us to use convict labor, and I think it should be more widely used than it is at the present time. What we need, and it is a great need, is cooperation, education, intelligence, and organization. I am delighted to feel that the interest you are taking in this matter will not stop here; there is too much determination, too much intelligence, too much necessity, behind it. Additional legislation may be necessary; if so, it will be enacted. I think we might have a road commission to methodize and keep this movement to the forefront. We may not accomplish all we desire to-day, but we want to begin to-day. We may not accomplish it all to-morrow, but as sure

as I am here the people of this country intend that this matter shall go on until the public roads are improved; and with the public roads improved, its property will be enhanced in value, education be more generally diffused, skilled labor in greater demand, and a brighter to-morrow vouchsafed to our State and her people.

The chairman announced the following committees:

On resolutions: Capt. S. B. Alexander, T. B. Parker, S. H. Webb, Duff Merrick, E. L. Daughtridge, Gen. W. R. Cox.

On organization: J. A. Holmes, Paul Garret, Senator Cheek, H. W. Plummer, P. H. Hanes, J. D. McNeill.

SHORT SPEECHES BY DELEGATES REPRESENTING DIFFERENT COUNTIES.

The chairman then announced that the meeting was open for short discussions, not to exceed five minutes each, of general topics of interest to the delegates. He first called on Mr. E. L. Daughtridge, of Edgecombe County, who spoke as follows:

It gives me pleasure to come before you this evening as a delegate from Edgecombe County. I am glad to say that the sentiment in our county is growing in favor of good roads, as is evidenced by the fact that Edgecombe has the largest delegation at this convention.

We have done some road work in Edgecombe; we are working the roads there by convict labor; we have not built any permanent roads, nor have we built any permanent bridges, but it is our object in coming to this convention to get the benefit of all the suggestions and information that we may from these gentlemen, some of whom have made a life study of the subject. I think it very encouraging indeed, and this convention will have an effect for good in our county. Our people are progressive. We have seen the progress that has been made in Mecklenburg, Guilford, and Forsyth counties, and we do not propose to lag behind. The people of Edgecombe consider the good roads question one of the most important before the people. Good roads and education go hand in hand; the children can not get the full benefit of the liberal school appropriation unless we can give them better public roads over which to travel to school. In Edgecombe we levy a tax of 15 cents on the \$100 valuation, which gives us from \$8,000 to \$10,000 for a road fund, an average of about \$20 per mile, as we have in our county about 500 miles of public roads. A large part of the roads in our county is good. Our object is to permanently fix the bad places in our roads and to build permanent bridges across our small waterways; it is our plan to build stone abutments and on them to lay steel bridges. When this is done we will not have to be continually expending money on these bridges. I do not think we are yet ready for any heavy expenditure on improvements, but I think any reasonable demand made on our people will be favorably received.

Mr. Paul C. Graham, of Durham County, said:

I did not know until a few minutes ago that I was to be called upon to speak in behalf of my county on this subject. We are now building good roads; we have, I believe, about 15 miles of good macadam road (Pl. III, fig. 2) that we are using every day. The convict force of Durham is at work building macadam road daily when the weather will permit, and when they are not able to construct they are busy getting the materials ready. A few years ago the proposition came up to build good roads in Durham County. At that time the matter was controlled by the justice of the peace. The proposition to undertake this improvement was carried by a majority of one vote. In Durham we have what you might call a combination system; we levy a tax on

property at so much per \$100 valuation, and also a poll tax; we also require so many days labor from each citizen, or the payment in lieu thereof of a certain amount of money; and we have also the convict system. Every person convicted in Durham, except those sentenced for the long terms, is put to work on the public roads. In addition we get the convicts from adjoining counties. We have on the roads of Durham convicts from Alamance and Person counties. The law permits this to be done. Our method of building is first to grade the road and construct the roadbed, and then to build a macadam track in the middle, leaving a dirt track on each side, so we really have three tracks. From the county seat we have improved a road to the north, one to the west, and one southwest, for about 4 miles in each case, and we are now building toward the Wake County line. It is then the intention, I believe, to build a road from the city of Durham to the Chatham County line. Durham is now awake on this question. There is some opposition yet, but we are moving along, and we desire to add our indorsement to what is here done, and to say God speed the good roads movement in North Carolina.

Capt. J. D. McNeill, of Cumberland County, said:

I can not report from Cumberland as much progress as has been shown from some of the other counties; but our people are awaking to the necessity of improving the highways, and we will soon take rank with Durham, Mecklenburg, and other progressive counties in this respect. We have all kinds of conditions in our county. We have every class of soil named here to-day. Our county authorities, however, commenced two or three years ago to improve the public roads, and are succeeding admirably. But they are hampered by not having modern road machinery. They have been ditching the county roads and mixing sand with clay for surfacing. They have built several miles at a cost of about \$350 per mile. I am glad to report that our people are determined to come before the next legislature and ask for an opportunity to issue road bonds; and when the bonds are issued and the money received and judiciously expended, I invite you to get into your automobiles and come down and take a spin over the Cumberland County roads at a rate of 25 or 30 miles an hour.

Mr. J. C. McCubbins, of Rowan County, said:

Rowan commenced building roads about ten years ago and macadamizing about four or five years ago. We now have 15 miles of macadamized road (Pl. IV, fig. 1). We work the convict, levy a tax of 15 cents on \$100 and a poll tax of 45 cents. The average number of convicts is about thirty. We have not all the improved road machinery, but are buying it as rapidly as we can, and are making all the progress we can under existing circumstances.

Mr. J. Van Lindley, of Guilford County, said:

About thirteen years ago the townships of Guilford were given the privilege of levying a road tax. None of them accepted the privilege except the two in which Greensboro is located. They bought machinery, and went ahead and graded the roads. At the end of three years the other townships wanted to come in, and they did so. Then we worked our convicts on the roads and the convicts from adjoining counties. For a few years we went ahead with a large force of convicts and graded all the leading roads of the county—about 170 miles. That was continued until about two years ago. The road to Pomona was built by subscription, so as to give an object lesson to the county. On another road they subscribed the rock, already crushed, and the farmers did the hauling, and thus 4 miles were built. Another mile has been built in the southwest. There are 7 or 8 miles of macadam road in the county (Pl. IV, fig. 2), and we are still at work. A great many people in Guilford are in favor of a bond issue to put the work through at once, so as to give the present generation the benefit of it, believing that, for all parties concerned, that is the cheapest way to get the roads. The property tax of 12½ cents in our county is



FIG. 1.—MACADAM ROAD 4 MILES WEST OF DURHAM, DURHAM COUNTY, N. C.



FIG. 2.—SAND-AND-CLAY ROAD NEAR NEWBERN, CRAVEN COUNTY, N. C., CONSTRUCTED AS AN OBJECT LESSON UNDER SUPERVISION OF AN EXPERT OF THE DEPARTMENT OF AGRICULTURE.

sufficient to raise about \$12,000 or \$15,000. I believe the county is about ready now, after deciding the matter for a dozen years, to accept the bond issue when presented.

Maj. T. L. Emery, of Halifax County, said:

I must say we have done very little toward road improvement in our county. We have done something in Weldon township by private subscription, and it has paid so well that we are interested, and I indorse the plan of my friend from Durham County—the cooperative plan. I do not think we are yet ready for the machinery they are using here. We should get big plows and wheeled scrapers to tear down the hills; we can do it cheaper than by these machines. I am glad to see so much interest manifested here. I hope it will stimulate the people of Wake County, the people of Raleigh especially, to build a hall sufficiently large to accommodate us next time we come here. If they don't, we are not coming here. I do hope we will have good roads in North Carolina. The State is improving rapidly.

Duff Merrick, esq., of Buncombe County, said:

I had hoped Professor Venable was in the hall and would respond to your invitation to speak for Buncombe, but if not, I will say a few words as to what we are doing. Buncombe prides itself on being one of the few counties of the State that has paid any attention to road improvement, and I think that what has been done here is very largely due to the organization we have, the Good Roads Association of Buncombe County, formed by the citizens and having a membership of about 160. Each member pays 50 cents per month to the association, and the funds thus collected are used to stimulate the road improvement throughout the county. We think, with the exception of Mecklenburg, we can say we have more macadamized roads than any other county in the State. Buncombe is now ready to vote a bond issue of \$150,000 to \$200,000 to build good roads, provided we get the legislation at the next session; and we intend to apply for it. I have been interested in all the remarks in regard to building roads; but one thing has been lost sight of, that is, keeping them in repair. So far we have built our roads by using the convicts from the county, probably 50 on an average. We have built a number of miles of macadamized roads, and have graded a great many miles in addition; but these improved roads have been neglected, and it is money thrown away to build macadamized roads without keeping them in repair. We are going to keep our convicts busy keeping in repair the roads already built. But my idea is that the county should issue bonds, to the extent of, say, \$200,000, and that the roads should be built according to plans under an engineer, and not paid for unless they are properly built and according to contract. In that way we can get better results. In the mountainous counties it costs more to build macadamized roads, because of the grading; macadam will not lie well on a grade of more than 4 per cent; it will wash away. To reduce all grades to a maximum of 4 per cent throughout the mountains requires engineering skill of a high order; it means hard work and money. We do not know what our roads are costing us under the present convict-labor system. We believe we can build them cheaper by contract.

Mr. R. W. Hobgood, of Granville County, said:

I am from the rural districts of Granville County, and I am sorry to say we have some mighty bad roads there. We feel the need of good roads. As has been said here, we often travel under the road; but since the freeze we have been traveling the upper road, and a rough one it is. You would like to know what they are doing in Granville on the road question? I am sorry to say we are doing nothing. I see some ladies in attendance and I am glad they are interested enough to come out. Get the ladies interested and you can get the men to go to work. Four or five years ago Granville had a workhouse and we had fifteen or twenty convicts. The county commissioners employed an engineer to take those convicts in hand and go to work on the

roads. They graded some road and it stands yet. But our roads are being worked under the old system, and they are suffering. I am in favor of taxation for better roads. Let each man bear his share of the burden. It costs the farmers more to go through the mud than it would cost to build good roads. I think we ought to have a State commissioner and an engineer to superintend the building of the roads—people that know their business. In that way much good may be done with a small amount of money; but you can't make good roads without some money. Let us start at home and let the State see that we want to help ourselves; then, if we need a little help, let the legislature appropriate for us.

Judge A. W. Graham, of Granville County, said:

I regret to have to confess that all that has been said by my friend, Mr. Hobgood, about the condition of the roads in Granville County is true. We are in a deplorable condition in regard to the public highways. I suppose that Granville is about an average county of the State; but I am afraid it is below the average in the condition of its public roads. The question is, What is to be done? If we levy a tax of 10 or 15 cents on the \$100 it will raise a fund of about \$4,000 in our county. What will that do for more than 500 miles of public roads in a year? We who are in middle of life will never see the benefit of expending that small amount of money annually. I introduced and had passed in the last legislature a bill authorizing the commissioners of Granville County to issue bonds to the amount of \$80,000, not more than \$20,000 to be expended in any one year. With the expenditure of \$20,000 in the employment of convict labor—that is, paying for guarding, feeding, and clothing them—we could manage to sustain 100 to 125 convicts in addition to buying the necessary road machinery and paying for the rock. If we expend that money within the four years the enhancement of the values of property in the county will be so great that the tax necessary to pay the interest on those bonds would not be appreciable. The bonds of a county like Granville can be floated at 4 to 5 per cent. Five per cent interest on \$20,000 for one year will be \$1,000. When the entire \$80,000 has been expended the annual interest charge will be \$4,000, and by the payment of that sum we can enjoy the benefits of having \$80,000 spent on the roads of the county. That is the only plan I can see by which the average county is to be benefited during the present generation. I do not believe I will live long enough to see the improved roads unless we take some such step as that. I admit if we had a wealthy county like Wake, Mecklenburg, or Durham, it might be a better plan to levy a tax of 10 to 20 cents on the \$100 valuation, because that would yield enough to produce good results over the county each year. Our commissioners have not yet seen fit to have the bonds issued, but they intend to do so. The interest in this subject is growing in our county. I think Granville County is a little in the lead in the number of delegates to this convention, and not Edgecombe, as Mr. Daughtridgè claims.

Mr. S. H. Webb, of Alamance County, said:

We may not have the largest delegation from Alamance, but we have got the best-looking delegation to this convention. Alamance is doing something in the improving its roads. About thirteen years ago we put our convicts to work the public roads. Our convict force numbers about thirty. We levy 16 $\frac{2}{3}$ cents per \$100 property tax and 50 cents on the poll. We work all able-bodied men from 21 to 45 years old three days in the year, or require them to pay \$1.25 before the 1st of April. That is used to keep our roads repaired. About every 4 miles we have a road supervisor. At first we didn't have any poll, but levied a special tax. We bought a road scraper and other tools, and took our convicts and worked up our roads. Then we started out macadamizing from the county seat, and we have completed about 6 miles of good road.

In Alamance our property is valued at about \$5,000,000. We have issued no bonds.



FIG. 1.—MACADAM ROAD NEAR SALISBURY, ROWAN COUNTY, N. C.



FIG. 2.—MACADAM ROAD 2 MILES SOUTH OF GREENSBORO, GUILFORD COUNTY, N. C.

They won't issue bonds in our county, but will pay the tax. We are putting in some steel bridges across Haw River. It takes a lot of bridges. Alamance is progressive not only in cotton manufacturing, but in this good roads question as well.

Upon motion, the meeting was adjourned until Thursday morning at 10.30 o'clock.

THURSDAY, FEBRUARY 13, 1902—MORNING SESSION.

The meeting was called to order at 10.30 o'clock by the chairman, who called upon Rev. Eugene Daniels to lead in prayer.

ROADS AND ROAD LAWS OF WAKE COUNTY.

By W. C. McMACKIN, *superintendent of roads for Wake County.*

It is with a degree of timidity that I attempt an utterance before this distinguished assemblage of public-spirited people from our own and other States. I will promise you in the beginning not to tax your patience with a theoretically built macadam or gravel or corduroy road. Enough of these have already been built in our conventions and through our newspapers.

It has been with some difficulty that I obtained any information about our old State road law. I finally secured the desired information from Judge Walter Clark. The law we now have in our State is a duplicate of an old English law, established in North Carolina in 1773 and not changed materially since. I want to present to you a few ideas with reference to legislation by our legislature at its next meeting.

A law ought to be enacted at our next legislature providing for a road committee in each township to devise a system, suited to that particular section, for the improvement and maintenance of its roads. The farmers should be relieved of a portion of the burden of maintaining the roads and have the whole people and the whole property, real and personal, to bear it.

In Wake County there are 3,560 miles of public roads and 54,626 people; about one-tenth of this population belongs to the farming class, and they have been doing the best they could to build and improve the roads, but they can not do it all themselves. Before the civil war something was accomplished for the reason that every farmer was required to work his slaves to keep up the roads; and he was glad to do it so that his family coach could go to town once or twice a month in safety and his wagons now and then. In that day the roads were little traveled, but now upon the same farms there are twenty-five or fifty tenants and each one has a wagon and many have buggies and, of course, must come to town every Saturday and every rainy day. And so you see the roads are used a great deal more than they were years ago, and therefore require more work. And then there are many more roads, for every man wants a public road to run to or by his house.

The only original law on our statute books, to my knowledge, that has not been repealed or amended in some way is the old State road law. It still stands monarch of all it surveys, and I have yet to see a senator or member of the house with backbone enough to tackle it, although it applies alike to every county in the State regardless of topography or varying necessities. Under this moss-covered law an overseer takes a notion to work his section of road just before court, so as to have the sympathy of the grand jury, and summons his hands to meet at a certain place on a certain day, each with a tool and his lunch, to work without compensation regardless of his business or his ability. Repeal the old law; it is a back number; retire the overseer; enact new laws in keeping with the times and the circumstances, and make the whole people and the whole property build the roads and keep them in repair, using convict labor and tramp and vagrant labor.

Good roads and education should go hand in hand. They are the foundation of civilization. Good roads have a money value and pay a good annual dividend. Bad roads are a curse and the devil reaps the benefit. It is often thought that in building good roads we are spending vast sums of money, but we are not doing anything of the kind. It is a question of economy, and I believe I utter the sentiments of 99 per cent of the voters in North Carolina when I say they are willing to support a feasible and equitable plan of taxation.

Different sections demand different kinds of road; some demand macadam, others telford-macadam, others gravel, others corduroy—all of which can be made good, hard roads. In Wake County we are employing gravel, which we think is the cheapest, simplest, and most effective method of improving our roads. Our labor is that of convicts; the mileage in my road district is 119; our road tax is 10 cents on \$100; per capita tax, 30 cents; amount raised this year, \$9,383.42; in 1891, \$5,448—an increase in ten years of \$3,935.42. And why? The roads we are building have raised the value of property enough to make that difference. Our convicts cost us at the present prices of provisions 17½ cents per capita per day to feed, clothe, and guard them, and give them medical attention. I have handled over 1,100 convicts since I have been in this business and have yet to find one that did not give me all the work required of him. Convicts are very different beings from what a great many people suppose. Most of them are soft-hearted, sympathetic fellows, willing to do whatever we require of them, from the fact that we treat them humanely, look after their health, and protect them in every way. Then, when I call for work, I get it, and they give it cheerfully and willingly. Give me convicts, 6-inch-tired dump wagons, and good mules to build roads. Every convict in the State penitentiary should be building roads or preparing material for their construction. Put them at work doing something which will benefit the whole people. Such State aid will be popular in all parts of the State, and it will eventually come.

To show you the advantage of improved roads, our county taxes in 1891 amounted to \$99,000; in 1901 they amounted to \$137,908.41, the increase being mainly on account of good roads; and of this amount Raleigh township pays in \$99,499.94, and the road district pays \$103,431.

We think in this county we have the best road law, outside of Mecklenburg, of any in the State. With the wisdom of our lawyers and practical men in the county, they have not found a flaw sufficient to require an amendment to our law since its enactment, excepting to extend the distance of its operation. When we began working the roads under this law only seven or eight people in Wake County were in favor of good roads. Dr. R. H. Lewis is the father of this road law, and it was gotten through the legislature with difficulty. At that time everybody was opposed to working the roads with convicts; now I can not find a person here but what is enthusiastic over good roads. We first began near town by building our roads about 45 feet wide and macadamizing a width of 25 feet. We have 19 miles of macadam road around the city and 29 miles of gravel road. The gravel road is lasting about as well as the macadam, and can be built at one-tenth the cost and repaired with less money. We have banks of gravel alongside the roads in this county, for which we pay not over \$25 per acre. Many good people give us the gravel on account of their wish to have the roads improved. Sometime later we may be able to build considerable more of the macadam road. Most of our people have been discouraged in starting the road business, as they thought the first thing to do was to get machinery. That is a mistake; you must first prepare your roads to use this machinery, and then the machinery is the thing to get. A man asked me how to invest \$5,000 in road implements, and I told him to buy steel picks, shovels, and wheelbarrows, and prepare his roads for the use of machinery. He is now getting ready to macadamize some roads which will require the machinery. I think the best way for our people in North Carolina to do is to get laws passed that will fit

their localities, and then to build such roads as they can afford to begin with, and make savings in taxes to buy machinery when they need it. Some counties buy too much machinery at first and it discourages them. The machinery which is being used here is exactly what you all need after you get ready for it. We have called convention after convention, but never before have we been able to get so large a body of representative men together at one time.

It may be worth while for me to say something about the cost of our convicts. They cost various sums per day, according to the price of provisions and the distance of the work from the camps. It is much cheaper to put the convicts on the road, where they will benefit the whole people, than to keep them in jail at a dead loss of 30 cents per day for keeping them. If it cost that much to keep a convict on the road, we get his work at any rate, which is valuable to the county. I think the convict system is the only one by which we can improve the public roads. It is impossible for farmers to keep them up. We shall be glad to take any of you gentlemen out over our roads and explain the details to you, showing the macadam and the gravel roads and their relative merits. In answer to a question just asked by one of the gentlemen, I would suggest that for sand-and-clay roads a light horse roller should be used first, and then it can be made heavier as you desire by loading it with old railroad iron. A 10-ton steam roller would cost about \$3,200, or possibly less. I have always found these manufacturers of road machinery willing to favor the counties with long-time payments and let them have the machinery on easy terms.

GOOD ROADS AND THEIR RELATION TO CHURCHES.

By Rev. T. N. IVEY, D. D., *Editor Christian Advocate, Raleigh, N. C.*

In the good old days of the camp meeting, when there was an alarming absence of straw at the altar, a zealous brother made a ways and means speech in which he called for straw. He said, "Straw is needed; souls are perishing for want of straw." We must admit that there was a great deal of hard common sense in this brother's statement. There is a very close relation between the physical and the spiritual. If there is anything that more materially influences the prosperity of a country than the church, I do not know what it is. On the other hand, there is nothing which so readily responds to the direct influence of material prosperity as the church of God. It has within it a soul which responds as readily to the stimuli around it as the soul within us responds to the material around us. And there are two kinds of capital needed by the church which are represented here to-day, and I desire to express my appreciation of the courtesy extended to the church in North Carolina in selecting me to speak upon this occasion.

There are two kinds of capital—spiritual and material—which must be at hand to carry out the purposes of the church. The material capital is needed for the erection of comfortable and attractive buildings, for the employment of the highest talent in the pulpit, for extending the largest charity and possessing the power to carry on the struggle of the church of God in that great campaign whose strategic object is the extension of the kingdom of God. In order to do this there must be a common use of the spiritual and the physical capital, and this, of course, inures to the material prosperity of the State. If the country is prosperous, the church has the fullest quantum of power. The material prosperity of the country is influenced by the kind and condition of the roads. Therefore, I am here to-day to emphasize the fact that the church in North Carolina is suffering, not from the want of straw, but for the want of good roads, and that is equivalent to the statement that "souls are perishing" for the want of good roads.

In the matter of congregations alone good roads are very necessary. There are, I suppose, nearly 400,000 members of the white churches in North Carolina; the

majority of these people worship in country churches. There are hundreds, perhaps thousands, of people living out in the country—hardened by toil—who arise on the Sabbath morning with a hunger in their hearts for that which they would like to receive at the old country church. They have been engaged in the arduous duties of the week, and their souls need some spiritual strengthening. They long to get out to meeting and see the neighbors and develop the social instinct. The church is the foundation of the social life to a large extent. Before and after the sermon the people meet and do a great deal in a social way. But the country people must think of the horses and mules which have worked hard all the week, and the condition of the roads is such that they decide not to go. In this way the number of worshippers every Sabbath in the year is diminished in some counties, and in the winter months in all the counties of the State. I remember several years ago I was in Mecklenburg County, when it was my fortune to attend a country Presbyterian Church. It was a fine brick church in the country, which would hold 1,200 people, and every seat was occupied; there were 800 in the Sabbath school. I went away deeply impressed. I said, "This church is in the county which has been benefited by the labors of Senator Alexander and others; it is under the auspices of the Presbyterian Church, which has done so much for God and humanity, not only in the towns and cities, but in rural neighborhoods." As I rode over those lovely roads, drained and free from mud holes and ruts, I came upon the secret of that church's prosperity; and there is no country church to-day in North Carolina that can not have its spiritual pulse quickened, that can not increase its influence for good, by getting down upon its knees every Sabbath day in the house of God and praying that God will stimulate the people of North Carolina to see the value of good highways. It is their religious duty to come to the help of the State in this great enterprise.

But good roads will not only increase the size of the congregations; it will undoubtedly help also the quality of the preaching, and that needs helping, I suppose. How is it possible for a preacher to leave his home on a Sabbath morning and jolt for 10 or 15 miles over ruts and rocks and arrive at the house of God with any spirit in him to preach the gospel? It is no wonder that we have such long sermons in our country churches sometimes. The more tired the body, the longer the sermon, usually. And there is that fatigue of the congregation; they are not capable of listening as they should. I have not been able to find a single interest of the church that is not touched by this good roads question. Whether you consider the annual conference or the quarterly conference, the man in the pulpit or the man in the pew, the foundation or the superstructure, there is not a single interest that would not receive a stimulus from the development of good roads.

One of the difficulties in the way of a Sabbath school is the fact that in some sections you can not run one in the winter time on account of bad weather, and it is well known that a Sunday school that runs only a few months in the year does very little good. In order to do its quota of good it must meet every week in the year. If you run level avenues, free from obstructions and mud, from the church of God to the homes of the people, you will then be able to run your Sabbath schools in the winter time.

Take the interest I represent, the editorial work: I see how good roads will increase our subscription list several thousand, and they will increase the subscription list of every newspaper in the State. They mean the development of the rural free-delivery system, which I am glad to see is making such progress in the State. We are not aware yet of the significance of rural free delivery. It is going to act upon the journalistic interests of the State. Have good roads and you will have rural free delivery over all the State, and that means a help to the newspaper business and to the financial interests of the church. I feel that this matter of good roads should weigh upon our hearts. I believe it would be well for our synods, conventions, and conferences to adopt resolutions on the subject. It would teach the

people that the church of God is standing for all that is beneficial to the human soul.

I have seen the wonderful road machinery at work, and the enthusiasm of the convention here assembled; I have listened to the speeches; and I see in it all a harbinger of a better day for North Carolina. I see the sunshine of prosperity falling like a mantle over our State; I see increased numbers of school children wending their way toward schoolhouses; I see the church filled with warmer and more enthusiastic congregations; I can hear the sound of trade as it sings and laughs on our highways, and to-day, as an humble representative of the church in North Carolina, as an official representative of the paper with which I am connected, I here pledge the efforts of all our good people to do with their might what their hands find to do in getting for North Carolina benefits which mean so much. May the blessings of God rest upon this convention and upon the cause which it represents.

THE GOOD ROADS MOVEMENT IN THE WEST.

By J. W. ABBOTT, *special agent of Office of Public Road Inquiries for Western Division of United States.*

In this great road work I talk to the people, the boards of trade, the county commissioners, the railroad men, in a quiet way; wherever I find a man who has influence in a community and a man who has influence for good, I try to secure his cooperation, and sometimes I am successful, and his efforts supplement ours and the cause is carried forward. The country I represent, beyond the Missouri, an empire so diversified in its products and in its possibilities that it covers almost everything desirable under the sun, is if possible more primitive in its roads than any portion of even your South, but they have begun to wake up to the question. Last Monday morning there was placed in my hands in the Office of Public Road Inquiries at Washington a copy of the Sunday edition of your Raleigh News and Observer, and I was astonished. I saw that you people in the South had waked up on this question; that your education had proceeded very much further than ours and I was glad of it, and I thank you for the assistance it gives me in my work. I am going to return to the Pacific coast, and I shall tell them out there that they can look toward the South, from whence their help and inspiration in this matter is to come. I was talking two or three weeks ago with the general passenger agent of the Oregon Railroad and Navigation Company, which is occupying that wonderful field in the Northwest that is raising the wheat to send to China. He told me that with their road facilities they have about reached the limits of their wheat production; I asked him how far those limits extended; he said 12 to 15 miles, the distance the farmers can afford to haul the wheat to our railroad. I said to him: "It is the purpose of our road movement to show you how to double the distance, so that, instead of 12 to 15 miles those farmers can haul the wheat in their wagons with ease twice that distance to your railroad line." He replied that if we did that we would double the traffic of the railroad. I asked him how much the farmers could now haul in their wagons. He said, "Under good conditions I do not think a four-horse team can take to market over 3,000 pounds." I told him that in France, where they have set the example to all the world in this road movement, the duty of four horses is, day in and day out, 5 tons, and from that to 8 tons. I have the reports made to me by the consuls in the various parts of Europe and that statement is vouched for by them. I sometimes feel that we are undertaking a hopeless task without the means to accomplish the settlement of this road question; but I look back over other things in my life I have fought with, and, although the prospect now looks discouraging, we are bound finally to succeed. When we realize by reading statistics that the cost of transporting the products of this country to market every year is \$1,000,000,000, it is easy to demonstrate that if we can put the road system of America where the

road system of France is to-day, the annual saving to the people of the United States won't be much less than enough to pay the national debt.

When I get back to the Pacific coast I shall expect to use the cheering evidence of your zeal and enthusiasm. For months I have striven to get representative papers to take up this question in earnest; to see themselves and then try to make their constituents see the importance of this question, but it has been hard work. However, I have succeeded in Spokane, Wash., in getting one great paper to take hold of this matter in earnest. They have promised that every Sunday for the next six months at least, if I will furnish them the matter, they will publish it and will publish an editorial on the road question; and they will keep hammering on this thing until they can get the sentiment in that region aroused. I don't believe any such work as that would be necessary here in the South; it seems to have been done.

ECONOMY OF GOOD ROADS.

By Dr. GEORGE T. WINSTON, *President State College of Agriculture and Mechanic Arts, Raleigh, N. C.*

The subject that has been assigned me is "The economy of good roads." I shall speak rather on the cost of bad roads. It has been calculated that the people of North Carolina suffer annually from bad roads to the extent of about \$10,000,000. In other words, they pay, as Professor Holmes so vigorously expresses it, an annual "mud tax, sand tax, and hill tax" amounting to \$10,000,000. It is difficult for us to understand how we are paying so large a tax, when we see none of the money going out of our pockets. It is always difficult for people to realize that they are paying a tax unless it is paid to the tax collector. The average amount of tax paid by citizens for the support of the General Government is nearly \$10 per capita. The citizens of North Carolina are therefore paying annually in taxes to support the Federal Government about \$19,000,000. Yet the State of North Carolina, for its own government, collects annually less than \$1 per capita. The tax collected for county purposes is less than 60 cents per capita. This total of less than \$1.60 per capita for State and county purposes is usually considered a grievous burden, while we pay the \$10 per capita to the Federal Government, not only without a murmur, but usually without even knowing that we pay it. The same thing is true of the tax that we pay for bad roads—"the mud tax, the sand tax, and the hill tax." The tax for the Federal Government is paid, without our knowing it, on every article that is used in the kitchen—ironware, tinware, earthenware; on every article that is used in the dining room—linen, china, silver, cutlery; on all our clothing, from hats to shoes; on household furniture, carpets, curtains, wallpaper; on farm implements; and, in short, on manufactured goods of all kinds. In the same way everything we produce on the farm and carry to town; every trip we make to church, to school, to market, to post-office, or to a neighbor's house; almost every act we perform is taxed a portion of our \$10,000,000 tax to sand, mud, and hills—our annual tribute to bad roads.

How careful we are to raise a fine horse, to give him the greatest strength or speed we are capable of producing by proper breeding, feeding, and training; but having produced this splendid product, we place him on a wretched road that reduces by at least half the powers that we have so carefully cultivated. Similarly we construct with great trouble and with great expense a vehicle capable of attaining a maximum speed and carrying a maximum load; and then, as if to undo all our work, we put it on a road that does not permit it to carry half the load or to attain half the speed of which it is capable. Not a basket of eggs is brought to market, not a box of chickens, a pound of meat, a bale of cotton, a barrel of apples, nor a bushel of grain but pays a tax to bad roads, invisible and imperceptible, but constant, steady, and in the aggregate destructive of progress and prosperity.

The bad-road tax is paid every minute of every hour of every day in the year. It collects itself. I do not wonder the doctors and preachers and young men came to the help of Captain Alexander in Mecklenburg County. They know the cost of bad roads. The young men had to ride around to see the pretty girls; the preachers had to tie the knot and christen the babies; the doctors had to usher in the new generation and usher out the old. Necessarily, in his campaign in Mecklenburg County for good roads, Captain Alexander found his most ardent supporters to be young men, preachers, and doctors. I think it might be demonstrated beyond a reasonable doubt that bad roads are unfavorable to matrimony and increase of population.

Ten millions of dollars annually, as tribute to clay, mud, sand, rocks, and hills, not to mention tired beasts, galled shoulders, sore backs, and profane drivers. During the last twenty-five years this bad-road tax has consumed an amount of money equal to the taxable values of the whole State of North Carolina. One-tenth of what we waste annually on bad roads would give a seven months' term to every school in North Carolina; \$10,000,000 thrown away on bad roads. It is the same as if every horse and mule in North Carolina were killed annually.

The farmer must not merely produce; he must put his produce where it can be sold. In antebellum days, and even in more recent years, before the Western North Carolina Railroad was built, connecting our mountain country with the rest of the world, how low were property values beyond the mountains. They have been quadrupled in twenty years by railroad connections. To-day steamships have linked together continents, and rivers of iron are spread across the country. As was said yesterday, railroads are carrying freight at half a cent a mile per ton, while steamships on the Great Lakes, from Chicago, Milwaukee, Cleveland, and Buffalo, are carrying it at less than one-tenth of a cent. These great sections with their great cities that are favored by nature's waterways are not paying the "sand tax, the hill tax, and the mud tax." The money which would have gone from their pockets to pay for bad roads has stayed in their pockets and made them wealthy. Cheap transportation is the greatest factor that has built up the great cities of America. When De Witt Clinton conceived the idea of a canal connecting New York City with the Great Lakes, he understood the value of good roads. He had not time to make them of stone; so he made them of water and put on them an endless train of canal boats. The produce of the West was carried to New York City at the cheapest rates then known and that made it the metropolis of the Western Hemisphere. There is a proposition now to spend millions of dollars more, deepening that great canal and widening it, so that boats of 1,000 tons burden can go from the Great Lakes to New York City. It is even proposed to make the canal so wide and so deep that ocean steamships may pass from Liverpool to Chicago. It is no wonder that all great cities of the world have been built on the water. Water is nature's good road, and on water (river, lake, or ocean) spring up naturally centers of transportation and trade. When man, with skill and labor, builds his rivers of iron, he makes new highways for new cities. But there can be no great city, no great prosperity, without cheap transportation.

During this generation we have made many improvements in agriculture. I have heard people say that we are stationary in agricultural methods in North Carolina; but there could not be a ton of agricultural produce raised profitably in the State if we followed the methods that prevailed fifty years ago. Improved methods of cultivation, reduction in rates of transportation, new lines of water communication, new lines of railroad, new processes of handling crops, and greater economy and skill in marketing crops make agriculture possible to-day in North Carolina. It is largely the lack of good roads that keeps agriculture in our State from larger development and prosperity. What the ocean does for Europe and America, what the railroad

does for the East and West, what the canal does for New York and the Great Lakes, good roads should do for every rural district in America.

A hundred years ago probably four-fifths of the people of the United States lived in the country and owned the larger part of the wealth. To-day about one-half of the people live in the country and they own much the smaller part of the wealth. One reason for this remarkable change is to be found in the burdens which bad roads impose on the rural population.

There is another feature of this question to which I will allude. The payment of money is not the only tribute nor the chief tribute that the country is making to the destructive demon of bad roads. You will remember an ancient legend that the city of Thebes annually sent twelve of its choicest youths and maidens as a sacrifice to the island of Crete. Each year the vessel with white sails was manned in the harbor and the choicest girls and lads of the city were put in the vessel and carried as an offering to appease the wrath of the Minotaur. A similar sacrifice—far greater than millions of money—is made annually to our cities and towns by our rural districts, the sacrifice of their choicest youth.

I do not claim that there should be no emigration from the country to the city. I know that if there were none, if country boys ceased to go to cities, in a few generations there would be no cities. The cities would lose the power and strength, the vigor and manhood, the push and energy that they get annually from country boys. The life of the city is ever renewed with country blood. This is not merely in business but in the professions, in literature, art, and science; in every trade, occupation, or position demanding intellectual, nervous, moral, or physical power; in medicine or law, in machine shop, or in halls of legislation. Nine-tenths of this power will come in each generation from God's green fields and forests. There is no accident, no sentiment, no mystery about it. The boy that rises with the sun, eats his early meal, goes out and breathes the fresh morning air, runs through the woods, hunts the birds and squirrels, plays with the young animals, and plows the furrow is the boy with strong arms and healthy stomach, with brawny nerves and muscle, with physical, mental, and moral power needed for the great work that the world demands. In this fashion was developed Washington, the Father of his Country; Daniel Webster, our greatest orator; Patrick Henry, Abraham Lincoln, Stonewall Jackson, Zebulon Vance.

The loss of its best manhood is the greatest tax that the country is paying to towns and cities. This loss must be controlled and diminished. We must have cities and towns; we are willing to give some of the country boys to carry on the work of cities and towns, but we must not give up too many. We need them in the country to build up country homes. The country home is the unit of power, character, and civilization for America. We can not control the nervous and vicious life of the city. City people do not desire the kind of lives they seem forced to live—nervous, restless, unhealthy lives; lives in which they retire late, rise late, and find it impossible to control their children. They can not help it. A large city is a maelstrom. A great, strong man comes from country to city; he does a great work; he finds great opportunities for the development of his powers and talents; he leads a brilliant life and leaves an honored name; but it is a sad fact, and seemingly a law of nature, that he sacrifices the calm health and strength of rural life for the nervous activities of the city. His descendants do not inherit his power. Let us preserve and build up country life. Let us keep the boys and girls on the farms. Let us carry the town to the country and the country to the town, preserving the blessings of both, by constructing good roads as permanent instrumentalities of travel, of trade, of social intercourse, and education.

GOOD ROADS AND THEIR RELATION TO THE POSTAL SERVICE.

By E. W. Pou, *Representative in Congress from the Fourth District, Smithfield, N. C.*

I am here quite unexpectedly this morning. Yesterday at the breakfast table in Washington I picked up a Raleigh paper and saw on the programme that I was expected to deliver a speech here to-day about 10 o'clock. It was the first intimation I had had that I was expected to make any remarks before this convention, so it is not necessary to say I come unprepared.

No man can produce any good argument why we should not have good roads. Rural free mail delivery is going to do as much for North Carolina as any reform ever inaugurated by our Government. I have taken a very deep interest in it, and I have an ambition to see a daily mail carried over every important thoroughfare in my district. In order to do this we must have good roads, because the United States Government is not going to spend money to send the mail over a bad road. Did you ever stop to think what rural free delivery means? It means an itinerant postmaster, who carries your mail to your door every day in the year, unless the streams are so high or the roads so impassable as to endanger his life. It is a task put upon him by the Government of the United States, and I have been informed upon what I believe to be perfectly good authority that in the near future, in the evolution of this rural free delivery system, an arrangement will be made by which money orders can be paid at your own door every day in the year, barring Sunday. No man in the world can calculate the benefits of a system like this, and we are going to have it. The Department at Washington has been exceedingly kind to my district. Fourteen routes have been put in during the last six months; four routes were already in operation, making a total of eighteen. We have about fifty applications on file now, and I believe a majority of these will be favorably considered, and that we will run the number up to thirty or forty during the coming year. The extension of this system into the remote parts of our State where there are bad roads depends upon these roads' being made passable.

The time has come in North Carolina when any political party must represent something of vital interest to the people. The time has come in North Carolina when a public man must stand for something. It is not necessary to allude to anything that has taken place in the past. The man who desires to represent our people must show that he is interested in the welfare and material development of the State. For reasons which will soon become apparent, I shall not attempt to discuss this subject further; you will hear it elaborated when I sit down by one of the most distinguished gentlemen in the country.

One other suggestion in reference to this good roads movement—its influence on the public schools of our State. When I was a young man I used to teach a free school and learned a few things about the system. I found the greatest trouble was that the children would not attend. It was not in the length of the school term, and I do not believe that is the trouble now. If the little children have a smooth, dry road to walk over in the morning, they will attend school, and 40 per cent of them will not remain at home as is now the case. I believe only about 60 per cent of our children are now attending the schools. The trouble is not that there is not a school to attend, but the roads are so bad that it endangers the life of the child to wade through the mud and water to get to the school. Let us therefore address ourselves to this task.

Some of the roads in North Carolina need only to be drained. In the eastern part of our State there are miles of roads that are nothing but ditches; it would be a small matter to raise the roadbed and let the water run off. We have an advantage in the east in this respect.

Now, in concluding, I thank you for your kind attention. I wanted to attest my interest in this great work by being here to-day, and we have been very fortunate in securing the presence here to-day of a gentleman who has done more to develop the rural free delivery system in the United States than any other one man. He feels a deep interest in the development of this system, and he will speak to you from large study and large experience. I now have the honor to introduce to you Hon. A. W. Machen, general superintendent of the free delivery system in the United States.

RURAL FREE DELIVERY OF MAILS.

By Hon. A. W. MACHEN, *General Superintendent of the Free-Delivery System of the Post-Office Department, Washington, D. C.*

The great popularity of the rural free delivery causes such an incessant demand for the service that I am kept busy at my desk almost day and night. I could not, however, resist the kind invitation extended me by your convention, by your governor, and by your United States Senators, to appear here to-day and say something to you in regard to the service which I have the honor to represent, and to point out to you in what way it affects the good roads movement.

The school, the postal service, and good roads are to my mind among the most, if not the most, effective means through which the people may be given or may attain the full enjoyment of material blessings here below. I mention the school first, because upon the common school of to-day rests the stability of our institutions. I place the mail service between the school and good roads, because it is a great aid to each and at the same time dependent upon both. Without education the mail service would be useless, and without good roads a modern universal mail service can not be brought to the degree of efficiency and perfection which an up-to-date public requires. That sturdy old American, General Jackson, who I believe is claimed by both your State and by Tennessee, was one of the greatest reformers of the postal service this country has ever had. More than any other President, he gave to the subject of the postal service deep study and thought. It was due to his efforts that the auditing system of the postal service was separated from the Post-Office Department. This was in 1836. In one of his annual messages he likened the postal service to the natural body, comparing it with the arteries and veins leading out to the remotest parts of the system, carrying to the people information about the operations of Government at Washington, and returning to the seat of government valuable information about the people and public opinion. In closing the paragraph he said: "By its introduction and extension we have brought to ourselves the full enjoyment of the blessings of a free press." This was said in 1832.

A few years ago our late lamented President McKinley, while discussing with Gen. Fitzhugh Lee matters pertaining to our new possessions, asked the General: "What is the best thing to be done in Cuba and Porto Rico to improve the conditions and to raise the standard of education?" Lee, in his usual ready way, said: "Give them a good postal service."

The late postmaster-general of Germany, the founder of the Universal Postal Union, Dr. Stephan, said: "Show me the postal service of a country and its condition, and I will be able to rate the intelligence of its people." While it is easy now to understand how our postal service becomes a great disseminator of knowledge and useful information, and in that way a great aid to education, it may be fairly asked how or in what manner can the postal service, or the newest branch of that service, possibly affect the roads of this country. This brings me right up to the meat of my subject to-day.

Before I reach the point of showing the necessity of having good roads for the successful operation of rural free delivery, let me give you a brief history of this service and detail the great benefits derived from it by the farmers of this country.

A universal delivery of mail, or what might be called a country delivery of mail, has been in existence in some of the old countries for some time past. In Holland, I believe since 1829. It is not, however, a rural free delivery as we understand it, for it is not strictly a free delivery. Either certain conditions are exacted by the government or an additional fee is charged for delivery outside of cities and villages.

At the sexennial convention of the Universal Postal Union held in Vienna in 1891 a proposition was made that every postal administration belonging to the union should undertake to establish a universal delivery of mail as soon as possible. Out of compliment to the United States, that agreement was signed on our national birthday—July 4, 1891. The American representatives on their return from Vienna made a report to the Postmaster-General. Mr. Wanamaker, the merchant prince of Philadelphia, was Postmaster-General at that time. He at once looked at the subject from the standpoint of a business man, saw the impracticability of attempting a universal free delivery immediately, and realized that the only thing to do to carry out our part of the agreement was to make an experiment to determine what could be done toward establishing a feasible system of rural delivery. He asked Congress for an appropriation of \$10,000 for that purpose, which was promptly granted, effective July 1, 1893. I had the honor of being superintendent of free delivery at that time. The item appeared in the regular appropriation bill. I promptly made inquiries of friends, postal experts, and asked for suggestions as to the best method to be pursued in an experiment. The Postmaster-General of that day, confronted with decreasing revenues and increasing deficits, was loath to take a step which might involve the future revenues of the service, so the money was not expended.

The same may be said of the next two years, although Congress reinserted the item for two years without effect. Finally, in 1896, although the former appropriation had not been spent, Congress quadrupled the amount, making it \$40,000. The late William L. Wilson was then Postmaster-General. While the phraseology of the appropriation did not make its disbursement mandatory on the Postmaster-General, Mr. Wilson considered the fact that Congress had quadrupled the appropriation in the absence of a recommendation or suggestion on his part to mean that the legislative branch of the Government had determined that an experiment should be made. On October 1, 1896, five and a half years ago, the first route was established in Charlestown, W. Va. July 1, 1897, 44 routes were in operation. Congress appropriated \$50,000 for the succeeding year—1898. The administration just taking hold at that time profited by the results produced by the routes already established, and foreseeing to a degree the great benefits to accrue from the establishment of rural free delivery, decided that every dollar of the \$50,000 should be spent. At the end of the year we had 148 routes. Congress at its next session trebled the appropriation, making it \$150,000 for the fiscal year 1899. This gave us 391 routes. The next appropriation, \$300,000, with a subsequent urgent deficiency of \$150,000, making \$450,000 in all, maintained 1,276 routes July 1, 1900. About this time the demands for service began to pile up and were simply irresistible. In view of this fact the Postmaster-General preferred not to make an estimate, but to let Congress determine what amount of money should be provided. Congress generously gave the Department \$1,750,000 for the year ended June 30, 1901, so that July, 1901, found 4,301 routes in operation, serving about 2,700,000 rural inhabitants.

This year \$3,500,000 is at the disposal of the Department; \$5,000,000 would have been appropriated if the Postmaster-General and myself had not stated that we could not spend so great an amount judiciously at the present time. The Department got \$3,500,000 in the face of an offer of \$5,000,000. To-day there are 7,700 routes, covering 160,000 miles every day over country roads. By the 1st of next July fully 8,600 carriers will reach from 4,500,000 to 5,000,000 people in the country and travel 200,000 miles of road every day. The appropriation for the next fiscal year was made yesterday—that is, the committee was ready to report. The Post-Office

Department asked for \$6,250,000; I see by the papers \$7,519,000 has been fixed upon, and many of our enthusiastic members of Congress, some from the South, insist they will make it \$10,000,000 when it is considered in the Committee of the Whole.

These figures are interesting and full of meaning. The great annual increases in the appropriation for rural free delivery have not been equaled in any other department of our Government and never in the history of the postal service. It took the city service twenty-five years to grow as much as rural free delivery has grown in five and a half years.

Now let us see what rural free delivery really is. It is not a mere delivery and collection of ordinary mail; it means the extension of postal facilities to the premises of the farmer. The carrier becomes a traveling postmaster. He not only delivers and collects mail, but he registers letters and delivers registered letters and special-delivery letters; he accepts money for a money order, giving an official receipt for it, and within a few months he will pay money orders at the farm; he answers all the purposes of a postmaster; he carries stamps and a special kind of stamped envelopes specially suited for rural districts. The manner in which the orders are coming in to-day for this class of stationery indicates how quickly the people take advantage of the facilities extended to them. I have often wondered why this great country of ours has discriminated against the farmer so long and so persistently.

Did you ever stop to think of the difference between the facilities you have to-day and the facilities they have in New York or Raleigh? I will illustrate by following a letter from the farm to one of the larger cities North. After putting off writing for several days, the farmer finally settles down and writes the letter, hitches up the old mare and drives 5 or 6 miles to the post-office. There it is taken by the star-route driver to the railroad office, where it catches the local mail train, or possibly the fast mail, and is hustled on to New York. On arriving at Philadelphia a corps of mail distributors board the train and make a distribution of the mail for New York City by stations. On arrival at New York it is hurried to the stations. If our letter has an address for lower New York it has nine chances of delivery each day; if it belongs in a residence section there are six chances of delivery each day. The recipient of the letter answers it. The office boy carries it to the letter box, probably directly in front of the establishment; or if he is located in one of the large office buildings, he simply drops it into the mail chute, through which it is conveyed into the mail box, where it has thirty-two chances of collection that day between 8 o'clock in the morning and 6 o'clock in the evening. The answer is rushed back to the fast mail, carried to Washington, thence to Raleigh, and out, may be by star route, to the post-office at which the farmer deposited the original letter. There is no letter carrier there to take it to the farmer, it has to wait for the farmer to come after it. If harvesting, the busy season of the farmer, is on, it may stay there two weeks. Napoleon used to say that if a letter was allowed to lie long enough it would answer itself, and many a farmer's letter without doubt has answered itself in this way.

Rural free delivery changes all this. The farmer is quick to take advantage of the mail facilities extended to him. The letter box in front of his farm door is a standing invitation to him to write letters. One day I was explaining this feature to a rural resident in Maryland, arguing that the Government would eventually make money out of the rural system. He stated that if all others had the same experience he had had my statement was not extravagant. He said: "Before we had the rural free delivery in this county my postage bill amounted to about \$2 or \$3 a year. But to-day my boys and girls think they ought to have a letter ready every time the rural delivery wagon comes around; my postage bill is now \$2 or \$3 every month, and besides they are subscribing for daily papers and every 'darned' magazine and picture paper there is."

Let us understand that the rural free delivery is an extension of the post-office, and not a mere delivery of the mail. This service to be satisfactory, therefore, must be

efficient; it must be regular and punctual; it must be a daily service; it must be prompt, because the farmer should know just what time every day to expect the carrier. Such a service can only be maintained with good roads; with bad roads it is impossible. Good roads are indispensable to rural free delivery if we hope to have an ideal service. I had called most forcibly to my mind a year ago the necessity of good roads for the rural free-delivery service. Telegrams from Iowa, from Illinois, and some parts of Ohio, reading like this, "Rural carrier can not leave office on account of poor condition of roads," indicated that good roads would have considerable to do with good delivery in the future.

The Department began to think it had been lax in its requirements for the establishment of the service. Realizing that something had to be done to bring about a general improvement of roads, the Department undertook last summer to call to the attention of those in charge of the construction and maintenance of public roads the necessity of improving them at once if a continuance of rural free delivery was desired. I will refer to two or three passages from the annual report I submitted to the Postmaster-General in October last to show how rural free delivery can be made a great lever in this all-important movement for good roads:

The reports of the special agents in charge of divisions enumerate a great number of important road improvements which have directly resulted from the establishment of rural free delivery. Some of these were referred to in last year's report, as, for example, it was stated that eighteen new bridges had been built and \$32,750 spent in road repairs to obtain rural free delivery in the States of Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania. This good work has progressed in nearly every State where rural free delivery has obtained a foothold. * * *

In the western division perhaps the most striking developments in connection with road improvement and rural free delivery have occurred in the State of Texas, where one hundred fords have been bridged and ten substantial stone bridges have been erected over streams which had previously been impassable at certain seasons of the year. Numerous old roads have been repaired and at least three new lines of roads specially constructed to facilitate the service. In Iowa over one hundred agreements have been entered into between the county commissioners and special agents of rural free delivery to open, repair, and maintain roads. Similar agreements have been executed in the States of Washington, Minnesota, and California. Twenty-five per cent of the routes favorably reported on in the western division have been accompanied by road improvements.

The States comprising the southern division have hitherto been backward in responding to the demand for improved roads in connection with rural free delivery. It has been found necessary to reject a number of applications for the service in Georgia, South Carolina, Virginia, and other Southern States, because of unbridged creeks and impassable roads. Some improvements have been effected in Alabama and Tennessee and others have been promised, but at present there is no very alert public sentiment calling for road improvements in this division outside of those sections where a county service has been established.

In the southern division there are some counties thoroughly covered by rural free delivery. In these counties the people have taken hold of the road question; they have already felt the beneficial effects of rural free delivery and propose to leave nothing undone to insure the continuance of that service.

I will briefly tell you what the Department is doing toward bringing about an improvement of the roads where the service has been established. Last August my office sent out a circular letter to the postmasters asking for information about condition of the roads traversed by rural carriers, and the names of road supervisors. A letter was then sent to road superintendents requesting that repairs be made to roads traveled by rural carriers. A letter to the postmasters directed them to notify patrons that service would be discontinued if roads were not improved. These letters had the desired effect. I recall one case where the road supervisor ignored the letter entirely, saying that it was none of the Department's business to look after the condition of the roads in his charge. But the people of the community whom the postmaster had also advised of the purpose of the Department, the patrons who were being benefited by the rural free-delivery service, took the matter in their own hands

and the pressure upon this particular road supervisor became so great that he was compelled to repair the roads. I will read you two or three typical answers to the Department's letters:

BONNER SPRINGS, KANS., *October 25, 1901.*

DEAR SIR: Referring to yours of October 22, would like to say that the work which was delayed on route on account of inability to secure enough teams and men to do the work is being pushed now with all possible speed; good arched culverts are being put in and the surface leveled down and the roads put in good shape. They have never been in so good shape before.

The postmaster, Mr. Maxwell, told me to say that he had been over the road and that it was in better shape than he had expected to find it. The work will be done as fast as possible.

Yours, truly,

W. G. MAUPIN, *Trustee.*

MEDIAPOLIS, IOWA, *September 24, 1902.*

DEAR SIR: The roads have been recently repaired and are now in good condition.

Very respectfully,

J. K. MATHEWS, *P. M.*

TOWER HILL, SHELBY COUNTY, ILL., *November 9, 1901.*

DEAR SIR: We, the highway road commissioners of Cold Spring Township, Shelby County, Ill., beg to state and report to your honor that we, the said commissioners in body, have this day gone over that part of the roads over which the rural free-delivery route No. 1 from Tower Hill post-office is operated, and find the roads in as good repair as we can put them this year, and that we appreciate the rural service and will in the future continue to repair the roads and put them in better condition from year to year.

Very respectfully,

C. E. CORBY.
G. W. BECHTEL.
D. LOCKWOOD.

My friends, I have given you a brief history of the growth of rural free delivery; have shown what it does for the good roads movement and what it is bound to accomplish in the future wherever the people want the service. If they are as insistent everywhere else as they are in North Carolina through their Senators and Representatives, nothing will stop good roads. The people are bound to have rural free delivery, and in order to have it as it should be, efficient and satisfactory, they must provide good roads.

I will not touch upon the other social and economic conditions that are affected by rural free delivery; they were fully covered by Dr. Winston, who preceded me. My experience with the farmers and stock raisers in all sections of the country convinces me that rural free delivery is not only the greatest step ever taken by this Government in the interests of the people generally, but it is the greatest boon ever vouchsafed to the farmers as a class. This service brings them in touch with the outside world and keeps them posted on current events through the daily press. I could enumerate case after case where farmers who never before saw a daily paper are now among the most ardent supporters of our dailies. This means that the farmer who enjoys rural free delivery knows what is going on all over the world. He is in touch with the markets of the world, and you have no idea what that means. A Representative told me the other day he believed, after consulting with the stock raisers of his district, that the steadying of the live-stock market is due to rural free delivery. The farmers now study the market reports in the morning papers as eagerly as the stock broker does in the cities; when the market is low the farmers and stock raisers hold their stock; when the market rises they ship. He also stated that he believed the farmers in his district gained a thousand dollars a day by the better prices they could now obtain for their products on account of the information brought them daily through the medium of rural mail delivery.

A farmer near Baltimore was visited last fall by a buyer of wool. The farmer had 1,000 pounds to sell. The buyer offered him 18 cents a pound, but the farmer refused to accept it because he had already received from the rural carrier the morning paper

which showed that washed wool brought 22 cents a pound in the Baltimore market the day before. They compromised on 21 cents a pound, so the farmer saved 3 cents a pound by reason of the valuable information he had.

This ability to receive the news of the day robs farm life of that isolation and monotony which I believe is largely responsible for the desertion of the farms by the young men. Rural free delivery means nothing more nor less than the city reaching out and clasping hands with the country, bringing our country cousins into a closer and more satisfactory relationship. This perfect public convenience, this ideal service for which we are now striving, can not be established or maintained without good roads. Therefore, good roads mean good rural free delivery.

The chairman then announced that the next part of the programme was the address of Hon. F. M. Simmons. Senator Simmons said that before he attempted to make a speech he wanted to make a motion. He thought the address of Mr. Machen was worthy of more than passing notice, and he moved a rising vote of thanks. It was given unanimously and with applause.

METHODS OF RAISING AND EXPENDING ROAD FUNDS.

By Hon. F. M. SIMMONS, *U. S. Senator, Raleigh, N. C.*

I am glad, my friends, to be with you to-day and to participate in the deliberations of this convention. When I was invited to come here, I was told I would be expected to make a speech, and of course I came with that understanding; but I wish to say in the outset (what you will discover before I get through) that I have no regularly prepared speech, but I am always willing to talk upon any question of as vital importance to the people of the Commonwealth as that of good roads. I have the old notion that a United States Senator's duty is in the Senate Chamber when that body is in session; but when I got to thinking about the good roads movement down here, that means probably more for North Carolina than Washington matters mean for the whole country, I decided to come and be with you. Now, I did not come here for the purpose of attempting to instruct anybody in the methods of building good roads, because that is in a measure a technical question, and I do not profess to know anything about it. Certainly, I am not in the habit of discussing war in the presence of Hannibal; and in the presence of these expert road builders I shall not be so presumptuous as to discuss methods of road building. I came here to learn something about this subject for my own benefit, for I think it is my duty to know something about it; and also for the purpose of having my interest in the subject stimulated, because a man is not apt to interest others in a subject unless he is himself interested. While I have been interested in this subject for a long time, I have recently waked up to the fact that I am not sufficiently interested in it. I hope and expect to learn a great deal about road building before I leave here, and to have my interest in that vital subject very greatly stimulated. I want to enlist in the cause of good road building in North Carolina, and I propose to stay in the war until the cause of good roads is won in North Carolina.

Now, as I understand it, it is contended by the advocates of good roads that bad roads cost more than good roads—that is to say, the constant loss to the farmers and to the community by reason of bad roads is greater than the cost of constructing good roads. I understand that statement to rest upon three general propositions: First, that the cost to the farmers of this country annually on account of bad roads is about \$600,000,000. This calculation is vouched for by the different good roads organizations and by the Office of Public Road Inquiries in the Department of Agriculture, as well as by many private authorities upon this subject. I do not

mean, and I do not suppose they mean, that the farmers themselves actually pay that much out of their pockets annually on account of bad roads, because that is about one-fourth of the total home value of the entire farm products of this country, and the farmers could not stand any such burden as that. The farmer in this instance imitates the foreigner, who, in the first instance, pays the tariff duty upon imports to this country. The foreigner pays the tariff duty, but charges it up in the price of his article against the consumer. So the farmer pays, in the first instance, the cost of bad roads, but, as far as he can, he shifts it from himself to the community. So it will be seen that in this way not only the farmer is taxed on account of bad roads, but likewise the city man, the banker and his clerk, the merchant, and the laborer upon the streets. They all have to contribute along with the farmer to this annual loss of \$600,000,000.

In the second place, the good roads people claim that there are about 1,000,000 square miles of farm lands (650,000,000 acres) actually cultivated by the farmers of this country, and that the actual cost to the farmers and the community on account of bad roads is on an average about 78 cents for each cultivated acre of land.

The third general proposition is that it costs about three times as much to haul products per ton per mile upon a bad road as upon a good road, the cost being about 25 cents per ton per mile upon bad road and about 8 cents on good road. In New Jersey and in the old country, especially in England and France, the estimate is about 7 cents per ton-mile.

These are the three general propositions or statements or conclusions, whatever you may call them, upon which the case of good roads rests. You will observe that each of these propositions is based upon statements of facts, and any proposition that rests upon a statement of facts is worthless unless the facts be true. Are these facts true? I confess to you that when I first met these statements they so startled me that I was disposed to regard them more in the nature of guesses or as exaggerations of good roads fanatics and enthusiasts, and I continued so to regard them until I had studied and investigated. But the investigations I have recently made have brought me to the point of accepting them as true, because I have found they are not based upon mere conjecture, but upon reliable statistics carefully gathered by competent persons. I find that the gentleman in charge of the Office of Public Road Inquiries in the Department of Agriculture at Washington sent out 10,000 letters to farmers in different parts of the country to obtain their estimate of the difference between the cost of hauling on good and bad roads, and, when he got their answers, averaged them. He then quoted from the census report and ascertained the amount of farm products, and applying the average of these answers to the facts ascertained from the census, he reached the conclusions contained in these general propositions. Upon this authority I accept the statement of these propositions. Why should you not accept them? Can you conceive of any enterprise, financial, commercial, or manufacturing, in this country to-day that has not its foundation in calculations and conclusions based upon statistics? If you want to convince anybody of the feasibility of any new enterprise or project, you can not do so by mere statement; you must sustain your position with facts—reliable, verified, statistical facts. Even in political matters, the argument that carries more weight, that exerts more influence, that convinces, is the argument based upon reliable statistics. Our whole industrial and financial structure is based upon conclusions drawn from statistics. Why, then, should we not accept the conclusions of the good roads advocates drawn from statistics?

But you farmers say (and I am glad to see that there is in this audience such a large percentage of farmers) that in estimating the annual cost of bad roads the cost of the farmer's time and the service of his team in hauling his products is included, and that these do not count, because there are many days when the farmer and his team can find nothing to do, and that, therefore, it is a matter of no significance that, on account of bad roads, it requires three days to haul what ought to be hauled

in one. That is the trouble with the farmer. He has too many idle days, days when he can do nothing. There ought not to be any idle days on the farm, and good roads will greatly help to abolish these idle days by making it possible for the farmer to utilize these days in marketing his crop and in hauling his supplies, his fertilizers, and manures from distant points. Find a farmer that has no idle days, and you will find a successful farmer, with a model farm. The manufacturer, the banker, the man of commerce, has no idle days. There is always something which he can do with profit. When the time comes that the farmer and the farmer's team will have no idle days, as the business man has none, the farmer will share more equally with those of other occupations in whatever prosperity the country may enjoy.

My friends, it is customary among intelligent good road builders to say that the period for agitation of good roads has passed, and that we have now entered the period of actual construction. While this is true to a certain extent, while we are doing some good road building in North Carolina, and while we are encouraged by the prospect for more, yet the amount already built and being built is insignificant compared with the total road mileage of the State. If we do not progress any faster in good road building than we have during the last five years, it will be fifty years before we will have anything like a system of good roads in this State. No, my friends, the time for agitation for good roads has not passed. The time for agitation is not going to end until we have convinced a majority of the electorate that money invested in good roads is money well invested. Everything in the way of material development moves along lines of profit. If you have an enterprise or a scheme and you want to launch it, and must have money, before you can get it you must convince the judgment of those who must furnish it that the enterprise will pay. Let me illustrate: We are probably the greatest railroad builders upon the face of the earth. In fifty years we have built about 200,000 miles of railroad. During that era of railroad building all you had to do to interest capital was to lay your project before a few individual capitalists and convince their judgment that your scheme was a good investment—a dividend-yielding investment—and the money to build the road was forthcoming. Now, this is not true with reference to good roads. It is an easy matter to convince a part of the community; it is an easy matter to convince a few leading men; but good roads are not built like railroads, by a few individuals. They are built by taxation imposed upon the community at large. It is not sufficient, therefore, to convince a few leading individuals. You must convince those who are to furnish the money, and they are the community; and hence you must convince a majority of the electorate of the community. Therefore, I say the period of agitation for good roads will not pass until a majority of the people who are to furnish the money are convinced that money invested in good roads is well invested.

But there are some who say: "What is the necessity of that? Why not let the legislature settle this question and pass laws to tax the people to build the roads, whether they are willing to be taxed for that purpose or not?" You may talk as much as you please about the cowardice of legislators and Congressmen and all that sort of thing. There is a fact that you can not wipe out, and that is this: When you send a man to the legislature, he is not likely to support any measure he thinks will be obnoxious to a majority of his constituents. I am trying to talk to you upon practical lines, because I want to accomplish something for good roads, and I don't think I can do this by generalization.

There is one problem of vital importance in connection with this subject that we good roads people (and I wish to put myself in that category) must take into serious consideration and solve in some reasonably satisfactory way. That problem is how good roads can be built within a limit of cost that the people will be willing to submit to. As I said before, good roads must be built by taxation in one form or another. It does not take a minute's consideration to see that we can not succeed in

building good roads in North Carolina under the present system of road building, by which every able-bodied man of a certain age is required to work upon the roads for a few days each year. We have been trying that method for about fifty years, and our roads, generally speaking, are but little, if any, better than they were fifty years ago. Upon the subject of taxation, the people of North Carolina are just a little bit freakish. If you come to them and ask money by taxation for purposes of charity or humanity, you will find they will make a ready response. If you say to them: "Here is an old soldier, a brave old Confederate soldier, maimed or crippled, impoverished and decrepit; he needs help," they will say: "Give him what he needs and we will not complain of the tax." If you come to them and say: "Here is a poor unfortunate upon whom the hand of God has been laid, who is bereft of reason or sight or hearing or speech, and is helpless," they will say at once: "Give him what is necessary and we will pay the tax without complaint." But if you come to them and say: "Here is a splendid scheme of development, a great project looking to the uplifting of the material interest of the State," they will shake their heads and say: "We don't know so much about that; we will think about it. Will it pay? We will study over it and tell you later." And they do tell you when they come to vote.

The good roads that are being built and graded in North Carolina to-day are being built by taxation. Roads built by chain gangs are built by taxation. Under that system taxes are imposed upon the community instead of the State for the maintenance of the convicts, to pay superintendents, teams, machinery, etc. If we are to have any general systematic construction of good roads in North Carolina, we must devise some system of taxation which will not be necessarily burdensome, and which the people at large will accept and submit to. I have no particular method to propose. Several methods have worked satisfactorily elsewhere. The two methods which are most advocated by the good road builders are those known as the New Jersey and California methods. Under the New Jersey scheme, the State pays a part of the expense, the county a part, and the locality in which the road is located the rest. This, it is contended, equitably distributes the burden, upon the theory (and it is a correct theory) that the whole people are benefited by good roads. The California method is based upon the same principle, but is differently applied. I like it better. It is good as far as it goes. With some improvements it may be made what we want in North Carolina. In California they have something over one thousand convicts. The State employs these convicts in crushing rock for macadam roads, and sells the rock to communities that want to build these roads, at actual cost (which means the cost of maintaining the convicts), 25 cents per ton, that being, as I understand it, about one-third the usual cost of this material. The railroads there are also interested in good-road building, just as the railroads are here and everywhere else. Indeed, the railroads have as much interest as the people in good roads, because anything that increases the productive capacity of the farm increases the business of these roads. For these reasons the railroads in California haul and deliver this material for the actual cost of transportation, charging nothing for wear and tear, administration, etc., and deliver it, I think, within a radius of 100 miles at 25 cents a ton; that being, as I understand it, about one-third the usual charges. Thus, through the aid of the State and the railroads, this material is delivered at the point of consumption for 50 cents per ton, about one-third of the usual cost.

I do not mean to give my unqualified approval to either of these plans. They merely furnish a basis. I think they can be improved upon. They are at least in the right direction. What I mean to say is, that we must take up this subject; we must study it; we must discuss it; and before the next legislature meets in North Carolina, evolve some satisfactory scheme. I don't want to see another legislature in North Carolina adjourn until it has passed some feasible and practical scheme for the building of good roads in North Carolina.

Good roads do not necessarily mean macadam roads, although I have been talking more especially about this kind. There must be a beginning to everything, and it should be a good beginning. The first thing to be done in building a good road is to get a good grade and a good foundation. It does seem to me that there are many counties in North Carolina—counties like Forsyth—which might at once undertake the work of grading their roads; if not all of them, at least their main thoroughfares. It does not cost much to get a good foundation and to grade a road. Two weeks ago I had the pleasure of making a mountain trip with Prof. J. A. Holmes, of our State geological department. And right here I want to say, for it is due him that I should say it, Professor Holmes is one of the most valuable citizens we have in North Carolina to-day, and is doing as much for the material and industrial uplifting of the State as any man in it. I got a great deal of inspiration from him on that trip. I was notified I would have to ride 100 miles through the mountains by private conveyance, partly on horseback. I had not been on horseback in twenty years, but I decided to go. We went across these rugged mountains 100 miles right through the woods, over the Cullowhee, across the valleys and hills and ridges. In that distance, I think we traveled over about 20 miles of graded road—road that had a regular grade of so many feet to the 100 and a level surface. Now, my friend, when we were going over the other 80 miles we had a pretty tough time of it. I don't think we made more than 3 miles per hour. We could seldom trot, and sometimes had to get out of the carriage and help the horses, and then we did not go much over a mile an hour, and yet we were traveling over the main county thoroughfare. Whenever we struck a portion of this 20 miles of graded road (it was not all in one body) over the same kind of hills and mountain sides, over the same kind of rocky steeps and gorges, through the same character of country, our horses struck a trot and we leaned back and smoked our cigars in ease and comfort, and rode at a rate of 6 or 7 miles an hour. I asked Mr. Ravenel, a gentleman who lives at Highlands, and is one of the builders of about 6 miles of this road, what it cost per mile, and he said from \$200 to \$500 per mile. Remember this road was through mountains, not over foothills such as you have here, not level plains like we have down in the dear old country where I came from.

Another fact about these mountain roads over which we passed is very significant. This rough, ungraded road was built by the people, but who built the graded road? Not a dollar was contributed by the people, but it was built by smart, shrewd, cunning investors, gentlemen I will say, for they are gentlemen, enterprising, public-spirited gentlemen, who had large properties, either along the road or at its terminus, which they wished to develop, and they had discovered that it would pay them to build this sort of road to develop it. It probably costs them between 5 and 10 per cent of their investment to grade these roads. They had so much money to invest, and they put a part of it in land and a part of it in roads, the roads being to develop the land and to make it profitable. That was voluntary taxation. It amounted to a tax of 5 to 10 cents on the dollar invested, yet these men, these capitalists, had studied the subject of good roads as an instrumentality in the profitable development of property, and their judgment was convinced that they might profitably tax their investment at that rate in order to secure these roads.

Now, suppose I were to say here to-day that I was in favor of a tax in North Carolina of 5 or 10 cents on the \$100 valuation of property for the purpose of building good roads, what would the people say? Would they not say I was in advance of the people? Yet I don't know about that. Upon these subjects the people are very much more advanced than the politician thinks. At any rate, I hope the time has come in North Carolina when we can discuss these material questions freely and frankly, without any fear of the effect upon one's personal, political, or business fortunes.

There is just one other phase of this question that needs attention, and it must

and will have larger attention in North Carolina. I understand that North Carolina's governor is to discuss this phase of the question to-morrow—I mean the educational and social phase of it—and therefore I do not want to discuss it in advance, but I want to make one general observation upon this line. We hear it said in North Carolina that the two questions which are most pressing for solution in the State to-day are the questions of education and good roads. They are properly linked together, and should be considered as one question. The solution of one of these questions will inevitably be the solution of the other. Educate the people of North Carolina, and no power in the world can keep them from building good roads. Build good roads in North Carolina, and universal education will inevitably follow. We have made a good beginning in road building in North Carolina, but much remains yet to be done. We must build, and we must agitate until the people are aroused to the full realization of the deep importance of the subject. We are agitating, and we will continue to agitate; the press will agitate for good roads; all these good roads advocates will agitate; the railroads will agitate; the politicians will agitate—I am going to do some of it myself—and this convention will agitate long after it has adjourned. What it says and does is not going to be heard alone within the confines of this little hall, but from one end of North Carolina to the other. There are a great many agencies that are going to agitate powerfully and effectually for good roads in North Carolina during the next few years. But there is one agency that is agitating, and will continue to agitate, with more force and effect than all the others combined, and that is the good roads that have been built and are being built in North Carolina. They are the best agitators. This mile of good road that these railroad people are building here to-day is an agitator of more potency than any speech that is going to be made in this convention or any resolution that it may pass. It is an agitator that will speak every day in the week, that will speak with a thousand tongues, and each tongue with trumpet tone. If this railroad company would go into every county in North Carolina and build a mile of good road, it would advance the cause of good roads twenty-five years in less than one. If you Forsyth people would make every mile of road in your county a good road in the next five years, you would settle the problem of good road building in North Carolina, for the people living in the bad road counties around you would flock here to such an extent that your neighboring counties would have to build good roads in self-defense.

The last twenty-five years in this country have been distinctively and preeminently an era of railroad building. I have sometimes thought, when reading the history of railroad development in the United States during the past twenty-five years, that we had gone railroad mad, but our splendid system of railroad construction is about completed. During this era of railroad building there has been no trouble to get all the money needed for the purpose, because it was easy to convince the capitalists that money invested in railroads would pay. Activity in railroad building, however, has greatly retarded the growth of road building and canal building in the United States. It has diverted the capital to that line of development to the exclusion of the others. I believe we are now about to enter a new era, not only in North Carolina, but throughout the whole United States, an era of good road building and canal cutting. And in the movement for good roads the railroads are going to take the lead, just as we see the Southern Railroad doing here to-day, because they want to make the avenues and approaches to their railroads as easy and cheap as possible, so as to increase the producing power of the farm and the community; and they see that the best way to do that is through the medium of good roads. You will find from now on the railroads are going to be the most aggressive and effective agitators and agents for good roads. We are going to dig some long and deep canals in this country, too, during the next decade. The railroads are not going to help in digging these as much as they will help us in building the roads. They will help us build

the good roads because it is to their interest to do so, but the people must build the canals, not only for the purpose of increasing their transportation facilities, but as competitors of the railroads, so that transportation rates may be kept within reasonable limits. When we get the Great Lakes united with the Atlantic and the Gulf by deep ship canals, and when we get the great Isthmian canal, by which our produce will be brought so many miles nearer the markets of the Orient, and when the whole country is brought closer together in the bonds of financial and commercial interest, what a great country we will have! But these dreams of increased greatness and power will not be realized without effort, without watchfulness, without the employment of means commensurate to the achievement.

The question, to my mind, is now almost entirely an agricultural one. The city people have solved the question in their own way, providing themselves with the very things that are needed in the country. Many of us can look back to the time when none of the towns of North Carolina had all these improvements. It is within the memory of man when Raleigh's streets were not paved. How have these improvements been obtained? By paying for them. The city people have accomplished this by issuing bonds to be paid by the next generation.

The suggestion that you build these roads by taxing yourselves may shock you. It shocked the city people at first. I tell you, you can't have good roads without paying for them. I am in favor of Governor Aycock's taking the convicts away from the farms and the railroads, where they are in conflict with honest labor, and putting them upon the public roads. Impose upon yourselves a tax such as you think you can stand. Issue bonds, and say to every township that when you will tax yourself a certain amount to build roads in your township you shall have a certain portion of this county tax. The convicts must supplement that. The time has come in North Carolina when we have got to solve this problem; we are right "up against it." We have six or seven candidates for the senate now, and I want to say that the one of them who solves this problem will be the one the people will choose. The next quarter of a century will be an era of canal building and public road building. My friends, let us then gird up our loins for the mighty race that is before us and continue in this work of building up the material interests of our State and nation as the basis of higher intellectual and social manhood and womanhood.

Colonel Moore stated that a telegram had been received from Secretary Wilson, of the Department of Agriculture, saying that he could not be present.

Colonel Patterson announced that Senator J. C. Pritchard had telegraphed his regrets at his inability to attend the convention.

Adjournment was then had until 3.30 o'clock.

THURSDAY, FEBRUARY 13, 1902—AFTERNOON SESSION.

At the afternoon session of the convention, Dr. Charles D. McIver, president of the State Normal and Industrial College, was introduced and spoke on the educational feature of the good roads movement. He said:

I must soon go to another meeting of 50 educators, who will meet in another room.

I have seen among Professor Holmes's illustrations pictures of wagons carrying large numbers of children to a central school. Every man wants a schoolhouse near his door, and the number of schoolhouses has been too largely increased. We should have fewer and better schoolhouses, better paid teachers, longer terms, and consequently better results.

No people have ever been impoverished by any tax on their property that was locally applied. We love liberty. When we wanted to free Cuba, the money was raised. It is always raised for any purpose for which it is wanted. And now, when we want money, a small tax of 10 or 15 cents on the \$100, to free your little ignorant children, they say: "You school-teachers don't know what you are talking about; you have no idea of business."

Like the man who killed the snake in the circus, most people strike at a tax wherever they see it. I believe this meeting means more for North Carolina than any that has ever assembled. I believe if there is anything in the world that makes wealth it is good roads and good schools. I believe it is a good move to issue bonds and let the tax pay the interest. I wish we had a Cicero or a Demosthenes to persuade the people to do the thing so much needed. What is issuing bonds but borrowing money from our richer selves in the future? North Carolina never paid a cent of taxes for improvements in the State that made her any poorer.

REPORT OF COMMITTEE ON RESOLUTIONS.

The committee on resolutions made the following report, through the chairman of the committee, Capt. S. B. Alexander:

To the North Carolina Good Roads Association:

Your committee on resolutions respectfully report the following resolutions, and recommend their adoption:

Resolved, First. That we indorse the work of the Office of Public Road Inquiries of the United States Department of Agriculture for the betterment of the public highways of the country, and that we believe that this Office should be enlarged into a bureau of the Department of Agriculture, with sufficient appropriation at its disposal to extend its work; and that we especially urge the Senators and Representatives of North Carolina in Congress to vote for the appropriation for this Office asked for this year by the Secretary of Agriculture.

Second. That we believe it is just as important that the National Government assist in the improvement of the common highways and post roads of the country as it is for it to care for the rivers and harbors, and we therefore favor Federal appropriations for highway construction, such appropriations to be distributed among the States and to be expended only where there is a State appropriation equal to the amount apportioned by the General Government.

Third. That this convention hereby heartily indorses the work of the National Good Roads Association, and commends its plan of organization of branch associations in each State and county for thorough cooperative action under a systematized plan.

Fourth. That we favor and advocate the enactment of legislation providing for the office of highway commissioner of North Carolina, and the annual appropriation of sufficient funds to enable that office to give proper supervision to road improvements in the State.

Fifth. That this convention recommends that the general assembly of North Carolina make provision for giving instruction in road building at both the State University and the Agricultural and Mechanical College.

Sixth. That this convention urges a more extended use of convict labor in road building in North Carolina, and respectfully asks the general assembly of this State to adopt a system which will provide for the employment of all its able-bodied male convicts either in actual work on the public roads or in the preparation of materials therefor.

Seventh. That this convention expresses its appreciation of the efforts of the Southern Railway Company in behalf of the good roads movement in furnishing its splendidly equipped good roads train, and our thanks to all the railroads of this State for

the favors extended to this convention; also that we extend our thanks to the director and assistant director of the Office of Public Road Inquiries, the president and secretary of the National Good Roads Association, and the various machinery manufacturers who have contributed to the equipment of said good roads train.

Eighth. That we especially extend our thanks to the press of this city and the State for its splendid work done in the cause of good roads, and that we express our appreciation of the courtesies extended and assistance given by the officers of the city of Raleigh and of the county of Wake.

Respectfully submitted.

S. B. ALEXANDER, *Chairman.*

S. B. WEBB.

W. R. COX.

T. B. PARKER.

DUFF MERRICK.

E. L. DAUGHTRIDGE.

On motion the resolutions were adopted.

REPORT OF COMMITTEE ON PERMANENT ORGANIZATION.

Your committee appointed to formulate a plan for the organization of a State good roads association beg leave to report as follows:

Recognizing the importance of the improvement of the highways of the State, and desiring to cooperate with the Office of Public Road Inquiries of the Federal Government, the National Good Roads Association, and other organizations of like nature; to promote proper legislation which shall lead to the improvement of the highways of the State, and to do all things necessary to promote the betterment of the common roads in the several counties of the State, we hereby associate ourselves together for the purpose of forming a permanent association.

Name.—The name of this association shall be the North Carolina Good Roads Association.

Office.—Its principal office shall be maintained in the city of Raleigh, unless, in the opinion of the executive committee, some other point may prove more practicable.

Membership.—The membership of this association shall be composed of all those who have registered in this convention, and all other citizens of the State who may desire to become members hereof by signing said register or making application to the secretary.

Officers.—The officers of this association shall consist of president, vice-presidents, secretary, and treasurer, who shall hold their respective offices for one year, or until their successors shall be duly elected and qualified. In the absence of the president or his inability to perform the duties of his office, the executive committee shall select one of the vice-presidents to act in his stead.

Executive committee.—The executive committee shall consist of the president, secretary, and treasurer, together with four members of the association to be named by the president. A majority of said committee shall constitute a quorum for the transaction of business.

Duties of officers.—The president shall preside at all meetings of the association and of the executive committee, sign all orders on the treasurer, and perform all other necessary duties in furtherance of the purposes of this association.

The secretary shall keep the records, books, and accounts, sign orders on the treasurer for money, and perform the usual duties incumbent upon such officer.

The treasurer shall be the custodian of the funds of the association, and disburse the same upon the order of the secretary, countersigned by the president.

The executive committee shall have charge of the business affairs of the association, provide ways and means, and perform all things necessary for the promotion of its interests.

Meetings.—The annual meetings of the association shall be held at such time and place as may be agreed upon by the executive committee. Notice of such meetings shall be mailed to each member of the association at least two weeks prior to the date of such meeting.

Special meetings may be called by the president and the executive committee. The executive committee shall hold its regular meetings at such times as it may select, and may adopt rules and regulations for the government of itself and the business of the association.

Notice of special meetings as above provided for shall be mailed to each member of the association at last known post-office address at least ten days before the date of such meeting. Such notices shall set forth the object for which such meeting is called.

Your committee further recommends the following as officers to serve until the next regular annual meeting or until their successors are elected:

President, P. H. Hanes, Winston-Salem.

Secretary, J. A. Holmes, Chapel Hill.

Treasurer, Joseph G. Brown, Raleigh.

It will also be advisable, in the opinion of your committee, that several vice-presidents be appointed to serve the interests of the association in their respective districts.

That such interests may be best subserved, it is a condition precedent that the proper parties receive such appointments, men with the interests of the organization at heart, and with the time and ability to attend to the duties of the office. Realizing how essential is the selection of the proper persons, your committee advises that the appointment of such be left with the executive committee.

These rules may be amended at any regular meeting of the association by a majority of the votes thereof.

Respectfully submitted.

H. W. PLUMMER,
For the Committee.

On motion the report of the committee was accepted.

EX-Congressman T. G. Skinner, of Hertford County, being called on for a speech, said:

I am not prepared to tell how to improve bad roads. But I have lived all my life on good roads and can tell you of their benefits.

I can tell you how to make good roads in the sandy country. All you have to do is to get a scraper and roll up the dirt in the center and then compel the people to use broad tires. The more the road is used the better it becomes. The broad tire is used in Dare County, and they can haul as much as you can on macadam roads. I am in favor of taxing the land to build roads.

If the work is to be done by direct taxation, it ought to be on the land. The poll ought not to be taxed. But I am in favor of bonding to raise money. A man is a fool to pay cash for anything when he can get it on tick. If I could draw a draft on my grandchildren to pay my grocer, baker, and candlestick maker, I would never pay for anything, and I'd live like a lord.

North Carolina has settled up the whole country. Boys from this State have charge of New York. Everybody in Norfolk is from North Carolina. Take all the Western States, and all the men of influence and prominence are from North Carolina.

“GOOD ROADS”—OUR WATCHWORD.

By R. W. RICHARDSON, *Secretary of the National Good Roads Association.*

The pleasant association of the past few days with the members of this convention and the pleasant ties of friendship formed will prevent me at this closing session of the convention to inflict you with a set speech.

With your indulgence, however, I will take this occasion to express, in behalf of the officers of the National Good Roads Association, the representatives of the Government, and of the Southern Railway system, and the entire company of our train, our appreciation of the splendid reception and many courtesies extended us during our stay and work in the State of North Carolina and its splendid capital city, Raleigh.

We sincerely hope that our campaign in the State may inspire a strong movement which shall have for its result the improvement of the common highways of the State. No other interest is so common to all. It is at the foundation of industrial development. It is the controlling factor in the solution of social and economic questions. Good roads mean better farms, better homes, better churches, better schools, better mail service, better literary advantages, better markets, better men and women, a higher citizenship, ease and rapidity of transit, comfort, and prosperity. We ask you not to judge the purposes of the National Good Roads Association, the office of public roads inquiries, the Southern Railway Company, and the road machinery manufacturers in equipping and operating the good roads train by the length or perfection of the object-lesson road constructed; and I hope you will not charge that these allied interests are promoting a scheme to sell road machinery. The movement means vastly more than this. We desire by a herculean effort to arouse the attention of the people of the States to the importance of constructing good and durable roads and properly maintaining the same, believing that from agitation and education on the subject we can bring about the desired result—improved highways throughout the United States. This is the third great train directed by the National Roads Association, and the movement has met with marvelous success. From the center to the circumference of this great continent come encouraging reports of the progress of the work. In conclusion, allow me to borrow the words of Senator Daniel, of Virginia, in the great convention at Chicago which nominated William J. Bryan, substituting good roads for free coinage of silver: "I hear it now whispering in the pine tops of Maine, stirring the Empire State and the Old Dominion, sticking down like a tar-heel in the Old North State, sweeping the Western Reserve and the prairies of Iowa and Nebraska, touching the peaks of the Rockies, standing like a star over the Golden Gate, then sweeping like a cyclone across the Llano Estacado of Texas, and writing 'Good Roads' on the saddlebags of the Arkansas traveler."

The convention then adjourned until 8 o'clock p. m.

THURSDAY, FEBRUARY 13, 1902—EVENING SESSION.

The meeting was called to order at 8 o'clock by President Hanes.

ROAD BUILDING IN NORTH CAROLINA.

By Prof. J. A. HOLMES, *State Geologist, Chapel Hill, N. C.*

HISTORICAL SKETCH.

The present state of road improvement in any community can only be correctly understood when interpreted in the light of past experience. Hence I will preface my statement concerning the road building of the present day in North Carolina with a brief historical sketch of the State's policy in the past.

Early in the last century Archibald D. Murphy, Joseph Caldwell, and other far-seeing North Carolina statesmen devoted a large share of attention to the subject of public improvements, including mainly better facilities for transportation on the rivers of the State and the opening of the public roads.

As early as 1819, and at intervals for nearly half a century thereafter, the general assembly of the State, through its board of internal improvements, cooperated with the local authorities in having public roads surveyed and constructed in many portions of the State. In 1822 the engineer of this board of internal improvements, Hamilton Fulton, who was really a great man, recommended the adoption by the State of a regular system of public roads to be divided into three classes: (1) The principal thoroughfares, to be called "State roads;" (2) those of secondary importance, to be called "county roads;" and (3) those of least importance, to be called "private roads."

In 1849 the people of the Cape Fear section became interested in a system of plank roads, and a number of such roads were constructed radiating out from Fayetteville as a center. The construction of these plank roads was under the management of stock companies, three-fifths of the stock being subscribed by the State and two-fifths by the citizens of the community. The average cost of these roads was about \$1,300 per mile; and for a time they were eminently satisfactory, but as an investment they were not profitable, consequently they were not repaired and in a decade or so were entirely abandoned.

Unfortunately the plans and recommendations of this board of internal improvements were carried out only in part. Toward the middle of the century, the people of the State became more especially interested in railway construction, and many of the prominent citizens came to believe that the construction of railroads would, in a large measure, do away with the need of wagon roads. Then came the civil war, and following that the period of reconstruction, and it was not until twenty years after the outbreak of the civil war that the attention of the people, in even our better counties, was again seriously given to the improvement of public highways.

During the past two decades we have been passing through a transition stage in public road building in this and in other Southern States. Nothing indicates the nature of this transition so clearly as a statement of the legislation relative to our public road building in the several counties of this State during this period. The movement has oscillated forward and backward like the pendulum of a clock, except that the forward movements have been greater than the backward, and the aggregate result has been a decided advance. This has been increasingly so during the past few years.

The modern movement for better roads in North Carolina may be said to have begun in 1879, when the general assembly passed what is known as the Mecklenburg road law. This was intended as a general State law, but at the time it was applied to only three counties—Mecklenburg, Forsyth, and Stokes. It provided for the working of public roads partly by taxation and partly by the old labor system, but even in this moderate form it was ahead of its time and in 1881 was repealed. It was reenacted by the legislature of 1885, and since that time, though applied in full to but few counties, it has served as a basis for much of the best road legislation and road work in the State.

The deep-rooted opposition to all forms of taxation by the people of North Carolina has been the great barrier to anything like general or uniform road legislation in the State. Consequently, in all attempts at general road laws by the legislature so many counties having been withdrawn from the tax provision of the bill that when these laws were finally entered upon the statute books they have applied to a few counties only and sometimes to but a single county. This is a too common occurrence in North Carolina's legislative history.

We have now upon the statute books two fairly satisfactory general road laws. One of these, which has been designated as the new Mecklenburg law, adopted by the last legislature, applies at the present time, I believe, to only two counties, but it can be adopted as the road law for a number of additional counties by vote of the county commissioners in each of these counties; and the other, known as the general



FIG. 1.—IMPROVED EARTH ROAD IN HYDE COUNTY, N. C.



FIG. 2.—IMPROVED ROAD BUILT OF PARTIALLY DECAYED SHELL LIMESTONE, WILMINGTON, N. C.

road law, 1899-1901, applies to about fifteen counties, and it can be adopted by a number of additional counties by a vote of the county commissioners on petition signed by a number of freeholders in each of these counties.

ROAD BUILDING IN NORTH CAROLINA DURING 1901.

The following statement will indicate in a general way the present status of the good roads movement in North Carolina:

During the year 1901, out of a total of 97 counties, 25 were working their public roads under laws which provided for both taxation and labor, as follows:

Alamance.	Guilford.	Polk.
Ashe.	Haywood.	Randolph.
Buncombe.	Iredell.	Rowan.
Cabarrus.	Jackson.	Union.
Craven.	Lenoir.	Vance.
Cumberland.	Lincoln.	Wake.
Davidson (Lexington town- ship).	McDowell.	Warren.
Durham.	Mecklenburg.	Wilson.
Gaston.	New Hanover.	
	Person.	

Two counties, Edgecombe and Forsyth, have abandoned the labor system entirely and are working their roads by taxation alone. The total amount of money raised in these counties by taxation for road-building purposes during the past year is about \$300,000. The largest amount raised in any one county was \$56,000 in Mecklenburg; and this county also has the highest rate of taxation for road-building purposes, namely, 35 cents on \$100 worth of property, and \$1.05 on the poll. And yet nowhere in the State is there so little opposition to the road tax as in Mecklenburg County, for the reason that the people of that county have come to see the benefits of good roads. They regard this road tax as an investment; as one of the best investments the county can possibly make.

About twenty-five counties have used convict labor in their public road work during the past year. The number of convicts used in these counties has averaged about 675. The greatest number used in any one county has been 100, in Mecklenburg, where the cost has ranged from 25 to 26 cents per day per convict, for board, clothes, guarding, etc. The cost of maintaining these convicts has varied considerably in different counties. Thus, in Cabarrus, it was reported to be 41 cents per day, in Forsyth 25 cents, in Edgecombe 30 cents, in Lincoln 25 cents, in New Hanover 25 cents, and in Person and Union 20 cents per day. In a few counties the cost has been excessively high, owing to the lack of proper facilities for housing convicts along the road, and other local conditions which should be avoided or remedied.

The condition of the good roads movement in North Carolina, as indicated by the above statement is, on the whole, quite encouraging. The more so, when it is remembered that nearly all of this progress has been made during the past decade. Evidently the reform has come to stay, and there will be very little turning backward in the future.

But there is still an enormous amount of educational work to be done. Out of the total of 97 counties there are 50 in the State that do not levy any tax for road purposes, and which confine themselves entirely to the old labor system—that unjust relic of the Middle Ages.

SUGGESTIONS AS TO FUTURE ROAD BUILDING.

There are four features which must be considered in all plans for future road improvement in this State. These are: Money, labor, intelligent supervision, and road-building materials.

TAXATION.

Money is certainly one of the essential factors in all public improvements. Much has been accomplished in an irregular spasmodic sort of way in the past by voluntary and compulsory contributions in the form of labor, teams, implements, materials, etc. No intelligent man now doubts, or denies in theory, the fact that every practical system of road building or making other public improvements must be based upon money raised by taxation; but in practice we deny it every day. The average North Carolinian has a traditional, inborn hatred of taxation, which well-nigh blinds him to its advantages; and this fact has been a great barrier to public road improvement in the State during all its past history. This is more or less true of every Southern State. Unfortunately, many of our people still too generally regard a tax simply as a burden, to be borne only because it is necessary, and to be kept down to the lowest possible figure consistent with the necessary protection of life, liberty, and property.

A man will spend \$10 for a modern plow instead of \$1.50 for an old-time plow of his fathers, because it pays him to do so. He will spend \$150 for a horse instead of \$25 for an ox, because the horse can travel faster and easier, and hence is worth more. He will spend \$50 for a modern wagon or buggy instead of \$20 for the crude cart of his ancestors, because in this, as in other cases, he follows the dictates of his wisdom in making the one or the other of these voluntary investments. But when the question of a tax is raised he loses his capacity for reasoning. He was born against it; he has been educated against it; he has lived against it, and voted against it, and he is just naturally against it. Furthermore, the politicians have told him that he could not stand such an increase in his tax; that taxes were too high anyhow; and that the people were not ready for it yet. He may waste half his winter time on the roads because they are so intolerably bad. He may damage a horse and spend \$25 a year repairing wagons and buggies, because of these terrible roads. If forced to do so he may count it up that these bad roads cost him \$25 or \$50, or even \$75 a year. He may admit that they necessitate his hauling half loads all winter and spring; that they keep his children from school and his family from church; and make the boys and girls all want to leave the country and move to town. He may realize that in swearing over the mudholes and broken vehicles he is losing even the religion which he inherited. He may admit all of this and more, but when there is raised before him the question of increasing his tax, he is seized with a nightmare which blinds him to all the compensating benefits. Like the bull and the red rag, he is opposed to it on principle and he is going to fight it.

But some day our people will come to consider a tax in its true light as an investment, and as the best and only satisfactory means of accomplishing certain necessary and beneficent results. They will see that such an investment pays; and that it pays in proportion to the wisdom and intelligence with which it is expended.

Fortunately too, we are coming to understand that our bad roads impose upon us a tax which is just as real and as burdensome as any or all of our other taxes combined; and, furthermore, that this is a tax which bears heavily upon every citizen and benefits no one.

THE "PAY AS YOU GO" PLAN.

Admitting the necessity of a considerable and a regular supply of money in road building, and admitting the fact that this money can only be raised by taxation, let us now consider for a moment whether we should adopt the "pay as you go" policy—which means that the quantity of road building during any year must be limited to the amount of taxes raised for that purpose during that year—or should we issue bonds and thus borrow a considerable supply to be used for road building purposes during a short period of time, and use the money raised by the annual road tax to pay the interest on the money thus borrowed and provide a sinking fund for the final payment of the same.

The majority of our counties have adopted the former system, levying a tax of from 10 to 20 cents on \$100 worth of property, which has made an annual income for road-building purposes of from \$2,000 to \$30,000. Each year this money has been expended for road-building purposes, and as a result from 1 to 10 miles of permanent stone roads have been built annually in each of these counties. The disadvantage of this system is the great length of time required for improving even the main thoroughfares in any county, during all of which time the people in many portions of the county continue to pay their road tax without receiving any adequate benefit in return for the same.

Under the bond system the county borrows a considerable sum of money, by the use of which the work of road improvement is pushed more rapidly; so that in three to five years all the main thoroughfares of the county are reconstructed. The farmers in all portions of the county at once realize the benefits of these good roads; and the funds raised by the annual tax pay the interest and provide a sinking fund. Thus at the end of twenty years, more or less, the debt may be canceled. The final payment, in fact, is made easy by the prosperity which the good roads have brought.

Under the "pay as you go" system, a strong county may build in twenty years 100 miles of improved roads; but the work is not finished, and many taxpayers of the county have not realized the full benefit which they had a right to expect from this work until near the end of the twenty years. Under the bond system the same amount of work may be accomplished in five years, and during the remaining fifteen years the citizens of the county get the full benefit of all this work. At the end of twenty years the account may be settled in full. And while the total expense for the construction of the 100 miles of road may be greater by the interest on the money borrowed than the sum total of the annual expenditures under the "pay as you go" policy, nevertheless by the bonding plan the people of the county have had the use of the good roads for nearly twenty years, and have used them to excellent advantage. They have made money on the investment.

ISSUING BONDS.

I know there is a great cry of objections raised every time one mentions the subject of issuing bonds for road-building purposes; and few accusations can be brought against a man with more telling effect than that he is "trying to get the county in debt," whether it be a debt for road building or for any other public purpose. But the trouble is we are already in debt; we are in debt to our forefathers for the civilization and liberty which they have left us; we are in debt to our fathers for the comforts and education they have bestowed upon us; we are in debt to our children in the responsibilities which we assume for them; but perhaps the two greatest debts which burden the people of North Carolina to-day are those which result from the lack of education and the lack of good roads. These bad roads impose upon us a debt or tax of from \$5,000,000 to \$10,000,000 per annum. They hold our people in bondage; and when we borrow money to build good roads, and spend this money judiciously, we are freeing ourselves from this bondage.

Let us not forget that more than 90 per cent of the business of this country is on a credit basis. Let us not forget that the more intelligent a community or a nation is the more freely does it do its business on a credit basis. Let us not forget that a hundred years ago nearly all of the business and the public improvements in this country were based on capital borrowed from Europe. But through this business and these public improvements this country has become wealthy enough so that to-day we are lending money to the countries of Europe. Let us not forget that every town and city in this country, when it undertakes to improve its streets, borrows the money for this purpose, pushes the work through to completion, and thus immediately enjoys the benefits resulting therefrom—paying back the money borrowed as the wealth of the community increases as a result of this public improvement.

In different parts of the Southern States many counties are now coming to adopt this same policy of "going in debt for good roads," and as a result they are increasing in wealth and prosperity. I believe that this system will become more generally adopted in North Carolina as it becomes more thoroughly understood.

But whether it be by bond issue or by ordinary tax methods, the one thing needful is that we raise the money and improve the roads.

CONVICT LABOR.

In the Northern and Western States the old system of compulsory labor has already been largely abandoned. In the Southern States it has continued in force longer because of the character of much of the labor; but even here it is being gradually abandoned in all of the wealthier and more progressive communities. Everywhere it is generally admitted that we will never have a satisfactory system of public roads until we substitute for this compulsory labor a road system which has a cash basis, and until we place in charge of this work men who are trained and experienced road builders.

The point of discussion, then, is between the use of hired labor and convict labor in road building. The use of convict labor has been the beginning and the basis of much of the modern road building in the Southern States. It is growing in extent and popularity.

During the year 1900 the following number of convicts were employed at road building in different Southern States:

Georgia	946	Mississippi	113
Tennessee	722	Florida	106
Texas	672	Louisiana	67
North Carolina	643	Arkansas	62
South Carolina	579	Alabama	25
Kentucky	419	Virginia	23

This makes a total of 4,377 convicts engaged in road building in these States during the year, and this labor, if paid the prices of ordinary labor, would have a value of nearly \$1,000,000; but the value of 1,000 miles of improved public roads is far greater than this. During this same year, furthermore, there were in these Southern States more than 7,000 convicts lying in the county jails whose labor would have had a value of \$175,000,000 if they also had been employed on public road work; but, instead of this, these 7,000 prisoners lived in idleness in the jails, at a cost of \$1,000,000 a year, paid by the same people who have already been injured by the crimes committed, and who have already paid the cost of capturing and convicting these prisoners. Some day our people will awake to this real situation, and will see to it that every able-bodied convict helps in some way to build up our public road system.

Statistics collected from all these different States show that convict labor used on public roads cost on the average about 33 cents per convict per day, this including the cost of feeding, clothing, guarding, etc.; but in the counties where this system is well managed this cost averages from 20 to 25 cents per day per convict, while the convicts in these different States who remained in jail cost the public, for their feeding, clothing, and guarding, on the average about 35 cents per convict per day. Thus, it will be seen that the convicts who during that year (1900) worked on the public roads have rendered an important service in these different States at a cost less than that of keeping them in the county jails, and at a cost of less than one-half of what would have been paid to hired labor to do the same work. Furthermore, it is generally conceded that these convicts are more efficient laborers than those which can be hired to do this work, for the reason that there is more regularity and system in the control of their labor, and the majority of the prisoners continue in the service long enough to derive considerable benefit from their experience and training. It is

also generally conceded that the conditions for developing good health and good character are better in the case of convicts employed on the public roads than of those who are confined in the county jails.

If a man has a case in court, he employs a lawyer to see it through; if he wishes to build a house, he employs an architect or a professional contractor and builder; if he is sick, he sends for a doctor; for work on his teeth he employs a dentist; but we have always had the notion that almost everybody was a good road builder, and as a result of this mistaken notion we have never had until recently any good roads in the Southern States. We must now recognize road building as a business or a profession, and we must place in charge of this work only men who have had some training and experience and who have demonstrated their capacity as road builders. To place an incompetent man in charge of this work—as is often done—is a waste of time and money. It is an injustice to the people who pay the road tax, and it is a still greater injustice to the people and to the animals that have to travel over the road.

CONCLUSIONS.

In conclusion, let me impress upon every person present at this convention the fact that each and every one of us has a share of responsibility and a duty to perform in connection with this great movement for better public roads.

The Federal Government should have its agents out studying the road systems of all countries, and give the people of all States the benefit of the experience and the information which these experts can gather. The State government should have its experts study out the application of this information and experience to the road-building problems within its own territory. These experts should examine carefully the road materials within the State, and the ways in which these materials can be used by the people to the best advantage and at the least cost. The county authorities must levy taxes for road-building purposes, and must see to it that they place in charge of this work and the expenditure of this money men of character and good judgment, who have had training and experience in locating and building public roads. Our citizens and newspapers must put forth every possible effort toward the proper education of public opinion favorable to an intelligent good roads system. The press is a great power that I am sure will continue its invaluable aid, and the best single contribution ever made along this line by any paper of my acquaintance is the special good roads edition just issued by one of the papers of this city.

Let no county lag behind in this great movement because it is not large enough nor wealthy enough to undertake the improvement of these roads on the same scale that is adopted by the larger and wealthier counties. It would be just as wise for a small farmer to say, "I will not farm because I can not do so on the same large scale as does my wealthier neighbor;" or for a merchant to say, "I will not sell goods because I can not do so on the same large scale as does one of my fellow merchants," as it is for a small county to say, "I will not undertake to improve my public roads because I can not do this on the same large scale as do Mecklenburg, Durham, Wake, or other wealthy counties." Such a policy will show an utter lack of ambition and common sense, and will result disastrously.

In this great movement each individual, each community, each county, each State, and the Federal Government must do its full duty, and the result will be one of increasing intelligence and prosperity in all this good land of ours.

Mr. H. W. Plummer offered an amendment to the plan of organization reported at the afternoon session, providing that the original report of the committee on permanent organization of a State good roads association be adopted as submitted, and be followed by the organization and prosecution of the work. This was adopted.

The chairman announced the following as members of the executive committee:

President, P. H. Hanes, Winston-Salem; secretary, Prof. J. A. Holmes, Chapel Hill; treasurer, Joseph G. Brown, Raleigh; S. L. Patterson, Raleigh; A. W. Graham, Oxford; W. C. Riddick, Raleigh; Paul Garrett, Weldon.

The following were selected to act as district vice-presidents for the ten Congressional districts of the State:

First, R. R. Cotton, Bruce; second, E. L. Daughtridge, Rockymount; third, William Dunn, Newbern; fourth, Dr. R. H. Lewis, Raleigh; fifth, A. W. Graham, Oxford; sixth, Capt. A. B. Williams, Fayetteville; seventh, Robert N. Page, Biscoe; eighth, Theo. F. Kluttz, Salisbury; ninth, Capt. S. B. Alexander, Charlotte; tenth, H. W. Plummer, Asheville.

The lecture of Mr. M. O. Eldridge, of the Office of Public Road Inquiries, illustrated by stereopticon views was enjoyed by a large audience. Mr. Eldridge spent several months in Europe collecting the photographs and information for this lecture. Views were given of the famous Appian Way in Italy and other highways constructed by the Romans. These great roads, built at enormous cost, have stood for twenty centuries, surviving the magnificent stone buildings that lined them. Mr. Eldridge also gave views of sections of Swiss roads which make that country the play ground of Europe. Other views were presented of improved roads in France, Spain, Germany, Russia, Norway, Scotland, England, and Egypt, and the methods used in their construction. Mr. Eldridge gave by way of contrast views of some of the finest roads and some of the bad roads in different parts of the United States. He also presented illustrations of some of the work done by this good roads train. The lecture was highly instructive and entertaining throughout, and the audience frequently expressed appreciation by applause.

At the close of Mr. Eldridge's lecture, the convention adjourned.

