

"Forty Years After"

A Speech by H.B. Battle

History Series No. 3



School of Agriculture and Life Sciences
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An Address Delivered Before the Semi-Centennial of the North Carolina Agricultural Experiment Station, April 19, 1928

By H. B. Battle, Director, 1887-1897

When I received the cordial invitation of your worthy Director, I feared I could not be present. And, too, owing to the many years which had elapsed, I doubted whether I could bring any words of interest for you to hear. But there persisted an urge within me that could not be set aside, and so I am here, and I am glad that such is the case.

The text of my address may be a little unusual, "Forty Years After." I have chosen it in preference to any detailed account of what happened during the time I was at the Station, because the latter would tire you. Commencing in January, 1881, I served a seven-year apprenticeship under Dr. Dabney, and then was so fortunate as to be chosen to succeed him in the late spring of 1887. I remained here for the ten years following, to the middle of 1897. Although my predecessor on today's program has already paid tribute to the work of those who founded the Experiment Station, I feel that no doubt my own personal contact with them enables me to bring some personal corroboration of what has been said, and present it from another viewpoint, and this comes forty years after.

The origin of the Experiment Station which we are honoring today, in rounding out its half-century of growth, is wrapped up in the life of the University, and its subsequent revival after the Civil War. In the endeavor to devise and create funds for the reopening of the University its friends decided that the best plan was to persuade the legislature to consider the Morrill Fund a debt of honor. This had already been given to each State and accepted by the legislature for the use of the University for the purpose of agricultural education. The money had been received and lost, and should be a debt of honor, and the interest on it be paid to the University, and this would amount to \$7,500 annually. It was upon this foundation that the friends of the University labored and finally won

after a very hard and bitter fight. With funds from this source, the doors of the University were opened in 1875.

The President of the University was continually studying conditions elsewhere in the hope of finding suggestions that might be followed to advantage. At an early date he was attracted by the Agricultural Experiment Station of Connecticut, and soon decided to recommend a similar plan for North Carolina. This institution in Connecticut was the first in America, and was located at Middletown under the direction of the eminent scientist, Dr. W. O. Atwater, and there the new President went in person to study what was being done. He was very cordially received by Dr. Atwater, and early perceived that it would be very wise to found a similar institution in North Carolina. The object of such work was the application of scientific knowledge to agriculture in the broadest sense. The Experiment Station, too, was not only to make intensive studies of the problems of practical agriculture, but also to supervise in the proper scientific way an industry that was just commencing in America - the fertilizer industry - one that was destined to make tremendous advances. The work of the Germans and the English had already proven its farreaching importance. The growing of crops was found to be vastly aided by the application of artificial plant food in the form of chemical fertilizers, and the kind of plant food, and quantities and combinations were things to call for the closest attention. The industry of commercial fertilizers would prove of immense advantage not only to the manufacturers, but to the farmers who would be benefited by their use. Both parties would be aided, instructed and helped. Also the soils which were to be used must be studied to show what kind of plant food would be needed, also the composition of the crops themselves. All this would be in the direct line of the purpose of the Morrill Act. But there was needed a further step beyond what was provided for in the Act. The authorities in Connecticut early solved this problem in the foundation of an institution totally different from any heretofore formed - The Agricultural Experiment Station. The plan was the first of many others of a similar character soon to follow, as their successful results became known. In this way and through this process,

another institution was born in North Carolina, the first in the South, and the second in America. The North Carolina Agricultural Experiment and Fertilizer Control Station, and this was the exact title first given it, thus came into existence on the 19th day of April, 1877, and we are at present at the completion of its fifty years of growth. It is interesting to me to remember, and to present myself now as a witness to bridge over the whole period from one end to the other, since my own father, Kemp Plummer Battle, was the University President referred to, and he has often told me of his visit to Dr. Atwater and of the interesting and valuable experience which resulted from his visit, which was after all the starting point of the life of the Station. Furthermore, just ten years after the time our own Station was founded, and being then in charge of its affairs, I myself took occasion to visit Middletown and search out Dr. Atwater. He very cordially received me, saying he remembered perfectly the visit of my father ten years previously, and he had watched with interest the growth of our Station. Such was my appreciation of his kindly interest and help to us both that a close friendship began between us that did not cease until his death.

The new institution was to be a part of the Department of Agriculture and controlled by its Board, but located at the University. One of the exofficio members of the Board was its President; another was the Master of the State Grange, and then of very wide and influential membership. This was a very wise arrangement, since interesting departments of the several institutions was properly related.

The Experiment Station, located first at the University, remained there through the tenure of office of the first Director, the eminent and very successful scientist, Dr. A. R. Ledoux. He was succeeded in 1880 by our friend, Dr. Dabney, who has already told you of the new institution, and difficulties he found and how he overcame them. The professional training necessary for this was difficult to secure, and few indeed had followed it. The ground work, of course, had to be chemistry as applied to agricultural lines. There was also required a broad understanding of the peculiar problems to be presented, and with the necessary training and ability to solve them.

In the choice of the first and second directors, this Station was fortunate. Dr. Ledoux and his wife, both from the North, early endeared themselves to the people of their adopted homes, and it was with real regret to our people that they decided shortly in the fall of 1880 to turn to their former home in New York. However, Dr. Dabney, a Virginian, bringing his beautiful and accomplished bride from Kentucky, completely filled the place thus made vacant. He soon showed his real worth in the valuable work done by him from the very beginning. He had been in charge only a very short time, when a very important thing happened in my life. Forty-seven years ago, on December 30, 1880, a professional man was writing a letter to a young man in a nearby state. He was stating in no uncertain terms what would be expected in the position being discussed, that no great salary could be given, that other chemists had started there before in similar positions at \$30 per month, but owing to certain interruptions to his work, he could not be given more than \$20 per month. Since this occurrence of many years ago Father Time has been making great changes. Many years afterward the great Baltimore fire completely destroyed the hotel where this letter was written, but it is delightful to contemplate that the two principal actors are still untouched. I am glad to present in the person of Dr. Dabney, seated before you, the one who wrote the letter. The young man who received it, I am happy to say, is now standing before you, and, furthermore, the very letter that was written I now take pleasure in handing to the one who wrote it. And so, I started work in the Experiment Station in January, 1881, under his direction. He will have told you of the partly underground habitation, underneath one of the buildings on the University campus where the Station was located, then consisting of a chemical laboratory in one room, partly lighted and ventilated by transom windows reached with difficulty from the floor. There we remained until the fall of the same year, when a wise purchase by the Board of Agriculture moved us to Raleigh to much better and commodious quarters. The location was the old National Hotel, just north of the Capitol, where the handsome Agricultural Building now is, and remodeled in the interior for the several uses intended, but unchanged

on the exterior. In these, in comparison with what we had previously, we were happy indeed. I shall always consider myself fortunate in being able to start my life work under Dr. Dabney's direction, and it was always a pleasure to work under him. Wise, considerate, thoughtful, he was much liked by all who were with him, and we soon grew to recognize his great ability, training and successful handling of the problems that were presented. He early showed himself a true scientist destined to become well known and of wide influence not only in our state but throughout the country. His success in North Carolina showed the possibilities of the future and wherever he was called he proved his worth. Beginning from the time he left us in 1887, he became president of a very important educational institution in a neighboring state, the University of Tennessee at Knoxville, together with the Experiment Station located there.

During the first ten years of its life, from 1877 to 1887, our Station had received its support entirely from the tax on fertilizers imposed for the inspection and analyses, and other purposes connected therewith. About this time the Hatch Act was being considered to appropriate \$15,000 for agricultural experiments in each state, to be located at such places as the state might designate. I can thank Dr. Dabney for early inducing the State legislature, then in session, to accept in advance the grant so bestowed for the benefit of our Station, as well as for his influential help in getting the Hatch Act passed. In due time the Hatch Act became a law and we began to arrange our plans accordingly. For some reason, however, the first quarterly payment of \$3,750, when due, was not promptly paid, nor could correspondence unravel the difficulty. This extended also beyond the time for the second payment, and so it seemed desirable for a personal visit to Washington. You will believe it or not, but I can testify of the truth, that with all the red tape of official regulations, unnecessary requirements, etc., that in six hours after I arrived in Washington I walked out of the Treasury Building with a check for \$7,500 in my pocket payable to our State Treasurer, and the next morning it was safely in his hands and placed to the credit of the Station. What influence helped me? I need mention only

one name and you have the answer, and that name is "Senator Ransom." A few words from him to the proper man of what he wanted, helped by two of my personal friends, fortunately in the Treasury Building, caused me to turn the trick. I venture to say that such a thing has never happened before nor since.

With such decided additions to our income we were able to enlarge our operations to include new lines of work. The experimental farm of ten acres, purchased during Dr. Dabney's time, had been located adjoining the State Fair grounds where visitors to the State Fair could examine the various field experiments, feeding tests, crops grown, and other experiments being carried on. Milton Whitney, who had already commenced very important soil tests, resigned shortly after, removing finally to Washington to the Division of Soils, of the United States Department of Agriculture. He handled this with such skill that it eventually grew into a separate Bureau. Since that time nearly every county in the United States has been thoroughly studied and mapped under his original plans, the first thoughts originating at this Station.

The agricultural work was first in charge of J. R. Chamberlain, who subsequently became Professor of Agriculture in the College, his place being well filled by Frank E. Emery. Among other special work conducted was in stock feeding, and at that early date important tests were carried on with cottonseed meal and hulls, with many valuable and important results.

There was also established a Division of Botany and Entomology, and Gerald McCarthy was placed in charge. His work was quite satisfactory and his seed testing investigations particularly, were carried to a very successful conclusion. This work being the first of the kind, attracted wide attention. There was a poultry division, and F. E. Hege, a well known poultry fancier, secured satisfactory results. The cooperation of the State Weather Service with the United States Department of Agriculture was continued. Among others we issued a very complete work entitled, "The Climatology of North Carolina," with all weather records in North Carolina from the very earliest times. This remained a standard work for many years. We instituted also the plan of comparative

fertilizer tests on growing crops in several different localities throughout the state in cooperation with prominent farmers and organizations in each locality. This attracted widespread interest, and was repeated during several succeeding years. In after years such tests have been extended to become the magnificent test farms which you have at the present time. We also assisted in founding (in cooperation with the North Carolina Horticultural Society) the Experimental Farms located at Southern Pines. These were planned and conducted on a very broad scale. As a very important part of our problems, we considered it very desirable to carry the information about our work to farmers and others. Consequently, a very complete system of bulletins and reports was instituted. Also a new departure under the name of Press Bulletins was instituted, which proved of great value to newspapers and readers.

Soon after this the World's Fair in Chicago was to take place, the 400th anniversary of the discovery of America by Columbus. Long preparatory months were necessary to get the exhibits together, and, as usual, it was decided that we should have an important exhibit there. It fell to my share to collect and arrange as great a display of grains as possible, including corn, wheat, oats, rye, barley, buckwheat, and others. This was done in cooperation with the United States Department of Agriculture, and we were able to bring together the most notable display of grain crops ever collected from North Carolina, and equalled, if not surpassed, those of most other states and attracted great attention. It was one that surprised even our own people, since it was not thought possible that North Carolina could grow the magnificent grain so generously displayed from such a wide area. As no institution was allowed to enter exhibits for competition under its own name, it was entered personally under mine. In due time, the great news came back that we had been awarded a special medal for excellence. This medal has been carefully kept by me as one of my most valued possessions. However, I think it rightfully belongs in the archives of the Experiment Station, and accordingly I am bringing it today to Dr. Winters, with the hope that he can find a place for it.

At this time it is proper for me to mention some of

those who have worked in the Station in various ways, and to give their names with some reference to their work. To them, what was accomplished of value or importance, a very large share of the praise should be given, and I would not care to detract anything from what is due them. As in warfare, although their names are not heard as often as their commander's, still to the men "behind the guns" the greatest praise should be given, for had they not been there, no war could have been fought nor victory won. The first man "behind the guns" I desire to mention happens not to be a "man" at all, but a lady, and from the time she first came to the Station at my request, to help in the executive offices, she gave her whole life to the job, which she then took over and so ably conducted. Not only during my regime, but in later years, as time and changes naturally occurred, it is a delight to me to think of her holding the same or similar position. Always ready, helpful, intelligent, courageous and with the grasp necessary to look after everything, she never failed in the slightest degree. The Station in my time, and during the years to come after, I am sure, owes her a debt of gratitude which none of us can repay. It is my earnest hope that Miss Mamie Birdsong will continue her helpful influence just as long as she cares to remain.

There have been many others, too, in various divisions of the Station besides those mentioned, who ably assisted during these years, and of whose work I have always been proud. In the chemical division, in addition to the names that Dr. Dabney has mentioned, and referring especially to those I brought into the Station, it gives me pleasure to mention the following, among others:

First of all - Dr. B. W. Kilgore. I persuaded him to come to us from Mississippi soon after I took charge. In every undertaking he has fully measured up to expectations, and more. His capable work has given opportunities for advancement which he has utilized to the fullest degree, and I am glad to note the very successful work he has done in each one of them. Then there is Dr. W.M. Allen, who so advanced from year after year until he is now in full charge of the Division of Food and Oil work, which his own merit created. Dr. C. B. Williams likewise early proved himself, but preferred to change to field work

and agronomy, and his success has been very marked. Dr. F. B. Carpenter has succeeded in the important post of Chief Chemist of the Virginia-Carolina Chemical Company, as has Dr. J. R. Harris in the very responsible position of Chief Chemist of the huge Tennessee Coal and Iron Company, with many millions of dollars of responsibility. J. S. Meng removed to New York to become a banker, and R. E. Noble left us to take up medicine, and in after years became in the United States Army the chief assistant to General Gorgas during the World War with the active rank of Major General.

Dr. C. H. Herty, who did special chemical work for us, in after years attained great promise as Professor of Chemistry at the University, President of the American Chemical Society, and other very responsible posts, and is now Chief Chemical advisor of the Allied Chemical Corporations. Then there was lovable Benoni Thorp, whose life at the beginning of his career was cut off by the result of a very unfortunate and regrettable accident during a brief vacation. Our hearts went out to his people in suffering.

There is another person I recall vividly with the greatest pleasure. I can never forget Thomas K. Bruner, that genial, whole-souled gentleman who as Secretary of the Board for many years, so ably handled all of the varied details of his office. His intelligent understanding, his wide and intimate knowledge of the state and its resources, his attractive personality, all combined to enhance his great value and usefulness. He played a most important part in the building of the State Museum, and in each of the several successful exhibits of the state resources at the various expositions and his artistic skill always added greatly to their value. He was always in the forefront in the state's development, and his name should always be held in grateful memory.

Please let me add here a few words of tribute to my dear friend, Dr. Charles William Dabney, who as second Director of the Station decided my life work and gave me my opportunity. For all of the posts he has filled, his training was particularly fitted. A graduate of Hampden-Sydney and the University of Virginia, he later took his Ph.D degree at Gottengen, and afterwards taught at Emory

and Henry College. After leaving North Carolina in 1887 he was in Tennessee until 1904, repeating his successes there. Being granted a leave of absence, he was called for five years as Assistant Secretary of Agriculture under Presidents Cleveland and Taft, as Assistant Secretary of Agriculture and Chief of Scientific Bureaus, and he ably filled these important places. From 1904 to 1920 he was called to the position of President of the great University of Cincinnati, and thereafter he has been occupied in the study and development of natural resources of Texas, and other states, and later particularly in oil and in potash. Fortunate indeed was this Station to have had him to mold its destinies, and good fortune guided me to be with him.

In subsequent years I have been greatly pleased to see the large amount of valuable work which has been carried on at the Station, and the many improvements and enlargements which have been made under the directorships of Dr. Kilgore, of Dr. Williams and Dr. Winters. I do not know who is individually responsible for each portion, or how the results were reached, but it is very evident that the latter years of the Station's life in rounding out a half century of growth are full of accomplishments, alike creditable to the actors themselves, and the plans they have pursued. You of North Carolina should be proud of what they have given you, and proud also of the bright promises of the future.

I can but believe that in some degree at least, among other important things that have assisted in the splendid development in North Carolina everywhere so noticeable, that the first fifty years of the life of the Experiment Station have had some contributory share.

Agricultural Experiment Station

North Carolina State University
at Raleigh

R. L. Lowm, Director of Research

Bulletins of this station will be sent free to all citizens of the state who request them.