

THE HISTORY OF THE HERBARIUM OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, N.C.

By

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"...a few sheets, possibly a hundred or two of mounted or unmounted plants ...scattered about in corners and under tables without much care..", gathering dust: not a very auspicious beginning for the herbarium which by 1974 was ranked third in the Nation for size and operation among university herbaria, and one of the top-rated research centers in the United States for systematic collections. This is the story of the growth and development of that Herbarium.*

PART I - THE HERBARIUM 1908-1998

CHAPTER ONE: THE FIRST THIRTY YEARS

Those few neglected dust-gathering specimens had been collected by a young man from Raleigh, North Carolina, who entered the University of North Carolina at Chapel Hill in the fall of 1888 at the tender age of fifteen. William Willard Ashe, lacking one credit for admission, spent three summer months studying botany under the supervision of an aunt. Upon standing the entrance exam, he did so well that he surprised Dr. J.A. Holmes with his knowledge of plants. William specialized in botany and geology, but his first love was botany. While a student at Chapel Hill, he spent his vacations and much of his spare time in the fields, searching for specimens. After graduating in 1891, he went to Cornell, leaving behind those few hundred or so plants. He could not know that those same specimens would some day be the beginning of the University Herbarium; nor could he foresee that many years later the 20,000 or more plants he would collect on his own time and at his own expense while working in Forestry, would become important in the development and growth of that same herbarium.

As our story unfolds, an interesting pattern emerges: at the beginning of each new stage of growth there was a definite need that had to be met before progress could continue; and standing in the wings, as it were, there was always an individual equipped with the training or native ability peculiar to the meeting of that specific need. Thus we shall see how eight successive curators with widely differing temperaments and talents, each guided and nourished this herbarium through a decisive stage in its life.

* Unless otherwise indicated, all quotes are taken (with permission) from the *William Chambers Coker Papers # 3220* in the Southern Historical Collection, University of North Carolina Library, Chapel Hill, N. C.

First upon the scene was a young botanist, a native of Hartsville, South Carolina, a graduate of the University of that state, a student for a semester at the famous Strasburger Laboratory at Bonn-am-Rhine in Germany, and a Ph.D. from the University of Chicago. Dr. William Chambers Coker joined the Department of Biology in the fall of 1902 as associate professor of Botany. It is said he made it clear that he would come only as Professor of Botany not as Professor of Biology! The department, under the chairmanship of Dr. Henry Van Peters Wilson, had for many years been occupying the fourth floor of New East Building. There was no specialized equipment for botany courses, and no herbarium as such. It was at this time that Ashe's few specimens were "assembled and put in a safe place, but were not considered further until the new building was erected..." in 1908. This new building was Davie Hall. Botany was now established as a separate department, with space for an herbarium. A few cases were built for both higher plants and mushrooms. Although Dr. Coker arrived in 1902 with a copy of Atkinson's "Mushrooms" under his arm and started using it immediately (judging by the notations in the margins), apparently he did not begin keeping specimens until 1908. For the next six years he was the sole botany professor, head of the department, and first caretaker of the young herbarium. In fact, he was the Botany Department!

Seemingly, very little was recorded over the next 15 or 25 years or so about the progress of the herbarium. There was no sense of urgency nor concentrated effort to build up a sizeable collection as soon as possible. Specimens were added from time to time as collected, now that there was a safe place in which to keep them. This is understandable, considering the scope of Dr. Coker's responsibilities and accomplishments, in addition to teaching botany.

Soon after coming to Chapel Hill, he began to publish notes and articles on a vast array of subjects from liverworts, mosses, fungi, and seed plants, to the teaching of science in high schools, and writing about famous botanists. Scarcely a year after joining the department, he began to transform a 5-acre boggy cow pasture on the edge of the campus into what has become the now famous Coker Arboretum. Beneath its Wisteria Arbor alumni still love to stroll, as alumni have done for decades. Dr. Coker never meant this tract to be an arboretum as such, but an ornamental garden for the University and a place in which a wide variety of plants of botanical interest and use in teaching could be grown.

In 1913 he became chairman of the newly formed Committee on Buildings and Grounds, in which capacity he served for the next thirty years. Much of the beauty of the campus today is due to his supervision of all planting of shrubs and trees, guided by his good taste and innate ability as a landscape architect. Some may still recall that for years most of the plants on campus were grown from shoots and cuttings (at little expense to the University) in a small one and a half acre plot, just south of Peabody Building. At this writing, the little nursery lies buried beneath a large parking lot. So much for progress.

During those very first busy years, Dr. Coker also laid the foundation for a good botanical library of rare books, first editions, old herbals, and the writings of early botanists. Often he paid for them himself if University funds were not available. Over the years he donated many of his personal volumes so that today this botanical collection is beyond price. His prodigious research on fungi resulted in the publication of several volumes and monographs, the most famous of which is *The Saprolegniaceae*, a volume of some 200 pages and 60 plates. This work on water molds has stimulated and influenced research on aquatic fungi the world over. It is without doubt still a classic in its field.

Perhaps his most important contribution as first curator of the herbarium was his excellent collection of fungi which by the mid-thirties numbered over 20,000 specimens. Much credit for the careful preparation, drying, and labeling of many of these specimens is due Miss Alma Holland (the late Mrs. Dale Beers) who came to work for Dr. Coker in 1918 and stayed on for many years as his research assistant. She was indispensable as secretary, researcher, editor and illustrator of many of his publications, and finally as co-author with him of a book on higher fungi, *The Boletaceae of North Carolina*, another classic.

Meanwhile, the collecting of higher plants had by no means been neglected. By 1914 the first addition to the staff arrived, Henry Roland Totten, as instructor in Botany. His special interest was in the classification and distribution of higher plants. Two years later, he published with Dr. Coker *The Trees of North Carolina*. This work was later expanded into *The Trees of the Southeastern States* and published in 1943. During these years the two men were in frequent touch with William Willard Ashe, comparing notes, locations, opinions and specimens. Work on the "tree books" stimulated the collection of woody plants and thus the herbarium increased in numbers, estimated to have been around 15,000 in the early Thirties.

In 1917 John N. Couch, a junior at Trinity College (now Duke University), came over to the University of North Carolina at Chapel Hill to complete requirements in botany for his premedical course. He was so impressed by Dr. Coker that he soon forgot medicine and switched to Botany, eventually earning his MA and his Ph.D. in the study of aquatic fungi under Dr. Coker. He did a special study on the relationship of species of the fungus *Septobasidium* with scale insects, which resulted in a book that is now "a classic in mycology". His fine collection of twig specimens from this study has become a special part of the herbarium under the Fungi Section.

By 1932 our country was in the middle of "The Great Depression", the worst in its history. Millions had lost their jobs and were desperately trying to hang on. Money was hard to come by, even for the essentials. Institutions as well as people were hard hit, and there was no money to be found for extras.

It was during this dark time that news came of the sudden death of William Willard Ashe, following an operation on March 7th. This unexpected event was to change the nature and the direction of the Herbarium, as we shall see. Dr. Coker wrote their mutual friend,

Dr. T.G. Harbison (another botanist), a few days later: "I suppose you noticed the sad news of Mr. Ashe's death. I have for a number of years relied on him and you more than on any other two men for helpful information about the distribution of the southern flora. I took his death as a distinct personal loss."

Dr. Harbison had known Mr. Ashe for more than 30 years, had tramped with him over countless miles and had covered much of the southeast with him, visiting the sites of a number of Mr. Ashe's types. The two men had corresponded about southern flora over the years and were very close friends. A few days after the death of Ashe, Dr. Harbison received from Ashe's secretary an undated letter of instructions from Ashe to be delivered in the event of his death, to his good friend Harbison. It almost seemed that Ashe had a premonition that he might not survive the operation.

In the letter, Ashe stated that his botanical work was largely incomplete and he hoped Harbison would be able to look over his collection, and carry out some of his wishes. One of these was that his herbarium might be placed in some North Carolina institution. Apparently the two men had talked of this a number of times, but as Dr. Harbison stated in his letter to Dr. Coker, "...he made no suggestion" as to which institution. Harbison's first choice was the University of North Carolina. "Now my personal wish and preference would be for the University of North Carolina to be the custodian of this fine collection representing the life work of one of her most brilliant sons. I feel this would meet his wish."

Ashe never gave an inkling of what he thought his collection might be worth, only that it had cost him a small fortune "to do what I have done." Dr. Harbison went on to say that he felt it his duty to get as much as possible for Ashe's widow "in this time of depression." He then put forth several ideas, one of which was to write to fifty or one hundred of "the wealthiest friends of the U. of N. C. and put the matter up to them." He presumed he would have to go to Washington to Ashe's home to "arrange" his herbarium, and also to Raleigh where his herbaceous plants were stored in boxes. Dr. Harbison then stated that "the part of the work I dread most is the getting back of the type specimens he has loaned. He tells me where to find the empty genus covers and where to find the types to be returned and replaced. I fear some of his types of Crataegus may have been misplaced (?) or destroyed by the same person who did something with Beadle's types that he did not feel like recognizing." He did not say who that might have been!

As news of the death of Ashe spread, a number of institutions expressed interest in acquiring his herbarium, if the price were right. Among these were the New York Botanical Garden, the Arnold Arboretum, the University of Michigan, the National Herbarium in Washington, and the Pennsylvania State Forestry School, to name a few.

During that spring and summer of 1932, numerous letters shuttled back and forth between Dr. Harbison at his home in Highlands, N.C. and Dr. Coker at Chapel Hill. Mrs. Ashe had been ill and Harbison had not been able to learn from her what she would consider a fair

price for her husband's collection; nor would Harbison have any idea of its worth until he could go to Washington himself and look it over. The "National Herbarium people" wanted Ashe's types, but Harbison was opposed to breaking up the collection. "I am hoping...funds may be raised to keep this collection in the state and at the University if possible." A Florida "gentleman in Highlands gave Harbison the name of a man who might be persuaded to give money toward purchasing the herbarium for Duke, but not for the University of North Carolina!

By June it was decided that Dr. Harbison should delay his trip to Washington until after August. The Ashe herbarium had to be appraised by several people and until such time no definite price could be set for its sale. Meanwhile, Dr. Coker wrote Dr. Frank Graham, then president of the University of North Carolina, a "strong" letter, urging him in spite of hard times, to make a great effort to secure "for the University this remarkable and unique collection of North Carolina and other southern plants." He went on to say, "You are aware that North Carolina may be considered at present the state in which scientific and extensive studies of southern botany is now concentrating. Work done here, at Duke and at State College is going on steadily all the time in the direction of a better knowledge of southern flora and to have this remarkable collection go out of our state would be a calamity." November came, and Dr. Harbison wrote that he was still corresponding with institutions about the sale of the Ashe Herbarium..."I'm still hoping we can keep it in N.C., or at least in the South. Ashe's types should remain in the South."

Then on December 22nd, Dr. Coker wrote Dr. Harbison that "President Graham and I succeeded yesterday in getting a gift from Mr. Watts Hill of Durham...and I hope that you and I can secure the Ashe Herbarium from Mrs. Ashe..." Dr. Harbison replied immediately that he was "delighted to learn that money was in sight to secure the Ashe Herbarium." He would leave for Washington on Monday. He ended his letter with "Hoping for the best I am looking forward to our meeting with great pleasure and the keenest interest."

The two men met in Washington and went together to see Mrs. Ashe. Their mission was successful, and Dr. Coker left Dr. Harbison to pack up the herbarium and arrange to bring it down to Chapel Hill by van. Freight would have been cheaper, but Dr. Harbison did not like that idea "on account of rough handling." While he was bringing the Washington section of the herbarium to Chapel Hill, Dr. Totten was moving the Raleigh section over to the University. At last, woody plants, herbaceous plants, notebooks, reprints, and pamphlets were all together in one place, in Davie Hall. Once again, Ashe's plants were all over the place, under tables, on the tops of cabinets, in corners - not just a hundred or so specimens, but 20,000 or more. This time, hopefully, they would not sit around gathering dust, but soon would be "mounted, classified, and put on display," as Dr. Totten wrote to the editor of Science on January 20th: "The herbarium should be ready for the use of visiting botanists by summer." Little did he know that many summers would come and go before the herbarium would be ready for visiting scientists; and many of the boxes and

bundles would gather additional dust before their contents would be poisoned, mounted, labeled, sorted, and filed away.

It was time to turn the whole thing over to a full-time curator, one unhampered by chairmanships, teaching, committee meetings, writing books, checking on arboretum help, answering umpteen letters, etc. Some one was needed to give undivided attention to deciphering Ashe's "peculiar signs and symbols", as Dr. Coker described the shorthand that Ashe often used on his specimens in the field. The herbarium was for the most part unmounted, not even poisoned, so there was much work to be done to get it into shape to be used.

The man ready-made for the job was even now standing in the wings: Dr. Harbison, who else? Dr. Coker had already made that decision. Dr. Harbison was perfect for the job. He and Ashe had been friends for over thirty years, had collected together, corresponded constantly, comparing notes and descriptions. Harbison knew all the sites of Ashe's types. He was familiar with those "cryptic symbols" and could fill in all those unfinished labels. He had collected plants in the South for the Biltmore Estate and Herbarium, and for over twenty years he had collected and studied southern plants for C.S. Sargent and the Arnold Arboretum. It was said of him that he knew the woody plants of the southeastern states as no one else knew them. He said of himself, "I am supposed to be able to name all of the trees and shrubs of the south at sight." He added that in his quest for plants he had walked enough miles to "make a journey three times around the world." During these travels, he had built up his own sizeable herbarium, neatly and fully labeled in his beautiful, flowing handwriting.

Thanks to Mr. Hill's generous gift, there was enough money remaining after the purchase of the Ashe Herbarium to hire Dr. Harbison for about six months, as well as to provide fourteen new herbarium cases and plenty of mounting material. So he began work at once, sorting, preparing specimens for poisoning and mounting, and translating Ashe's symbols and abbreviations onto legible labels. Apparently the money ran out early in December, and University funds were hard to come by, so for a couple of months in 1934, he worked with Dr. Coker's brother David in Hartsville, S.C., building a lake and making a garden for Coker College. The two became fast friends in a short time, as they worked to make the garden "one of the showplaces of the South." While there, Dr. Harbison learned that Dr. Coker had successfully persuaded the University to hire him as curator at a stipend of \$125.00 a month, eight months out of each twelve, for "as long as the University is financially able to continue or as long as you wish to continue." This agreement was to go into effect July 1, 1934

For some reason Dr. Harbison did not begin work until late that fall, possibly due to the fact that space was being made in Davie Hall for the new cases for the Ashe plants. There was talk of tearing out a partition to enlarge the herbarium, and there was much noise and confusion, and little place in which to work. So it was late September before he began his curatorial duties at Chapel Hill. He went home for Christmas, planning to return on the

3rd of January, but on January 17th Dr. Coker wrote his brother David in Hartsville that he would let Harbison work for him during part or all of February, "you carrying on his salary during the time you use him." Dr. Harbison and David were to bring in native azaleas from Georgia for transplanting to the garden - Harbison would make up his herbarium time later.

Sometime during the late winter or early spring of 1935 he suffered a severe attack of influenza that left his heart weakened. He was under the care of Dr. Fields, a Chapel Hill physician, who put him on digitalis. Apparently Dr. Harbison went home to Highlands to rest and recuperate. He wrote Dr. Totten on September 1st that he had been following the doctor's advice, and was feeling much improved. According to Dr. Fields, Harbison ran out of his medicine, so visited a Georgia doctor who wouldn't give him digitalis but put him on a drug from a "bush", apparently a forerunner of digitalis. In late October he returned to Chapel Hill and began again on Ashe's plants, working through November. After that, for the next six weeks he stayed for the most part in his room at the Totten's home, as his health seemed to steadily decline. His ankles were so badly swollen that Dr. Fields gave him a diuretic, and told him he would look in on him the next morning. The Tottens were away, but had left him in the care of their faithful black cook.

On Sunday morning, January 12th, 1936, Dr. Fields found that his patient had died quietly in his sleep. Dr. Fields called the cook to come help him, but she was so "skeered" that she ran from the house and disappeared. A neighbor, Mrs. Newsome, came over in her stead. Dr. Fields felt that Harbison would have lived much longer had he followed faithfully directions to take his digitalis.

Dr. Coker wrote a short article for the college paper, the Daily Tar Heel, stating that Dr. Harbison was "one of the most active and able field botanists in the United States. He spent a remarkably active life largely on foot studying the southern plants. He made numerous excursions with Mr. W.W. Ashe and was therefore able to decipher Mr. Ashe's obscure labels. Dr. Harbison was a man of the highest character and of warm, human feeling. In his death the University loses not only a great botanist, but a delightful companion."

All his life Dr. Harbison had been a keen observer, blessed with an exceptionally retentive memory. From his youth he had read widely, and by the age of twenty-one he had accumulated a library of over 1,000 volumes. When he was twenty-two he began to teach in his native Pennsylvania, at the same time continuing his education by attending classes during vacations, and by completing programs of study from the best correspondence schools of the time. In this way, after hard study and rigorous examinations, he finally received a PhD degree. His love of botany inspired a walking trip with a friend as far south as Highlands, North Carolina, and back. That fall the people of the little mountain town called him to teach in their school, and from then until his death some fifty years later, Highlands was home.

The death of Dr. Harbison was a tragic blow to the department and especially to the work of putting the Ashe collection in shape. He alone was familiar with that herbarium, the location of most of the types, and with the itinerary, writing and thinking of their collector. As Dr. Coker wrote his sister-in-law, Mrs. David Coker at Hartsville, "Mr. Harbison's death is a great misfortune for us here as we have no one else that can do even approximately as well his work in finishing up the labeling of the Ashe Herbarium." It is unfortunate that due in part to lack of ready funds and also due to Dr. Harbison's declining health toward the last, that his talents and special knowledge could not be used to the fullest after the acquisition of the Ashe herbarium. The records seem to indicate that in all he worked scarcely ten months on the Ashe material.

That January of 1936 was indeed a bleak month for the department. The little office where Dr. Harbison had been working on Ashe's Crataegus the previous fall was stacked with plants to be poisoned, plants to be mounted and sorted and labeled and filed away. Many of the new herbarium cases were stuffed with bundles of unmounted specimens in "temporary" storage, there being no other place to put them until they could be taken care of. Before long, the confusion would be compounded by the arrival of some additional 12,000 specimens from the Harbison Herbarium, recently purchased from his widow. Soon every case in the herbarium would be top-heavy with boxes and bundles of plants awaiting sorting and preparation for final placing in those new cases.

There was no way anyone could be found to replace Dr. Harbison with his special knowledge, training, and experience. But someone was needed at once to bring order out of chaos. Dr. Coker already had that someone in mind, not an outstanding botanist by any means, but someone who loved the herbarium, who was not afraid of hard work, and who seemingly had the ability to accomplish the immediate task - to set things in order. That had to be done before any future taxonomist could take over.