

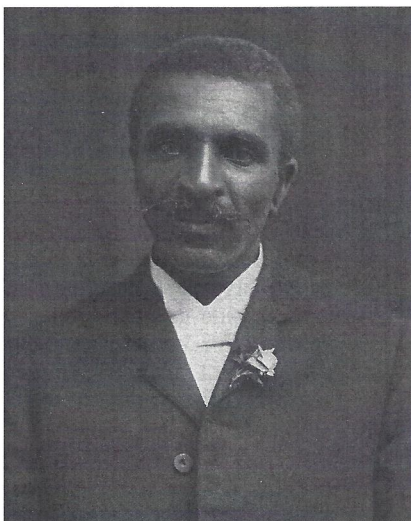
Horticulture Hall of Fame
American Society for Horticultural Science
2015

GEORGE WASHINGTON CARVER

The legacy of George Washington Carver began when he enrolled in Iowa State College of Agriculture and Mechanic Arts in 1891. Prior to that time, his thirst for knowledge and deeply rooted desire for formal education led him to several midwestern communities in Missouri, Kansas, and finally to Simpson College in Indianola, Iowa. At Simpson he studied art under the direction of Etta Budd. Budd was impressed with his skill in painting flowers; however, after learning of George's self-taught abilities in horticulture, she urged him to enroll in Iowa State College to study agricultural science. After much consideration, George abandoned a promising career in art and decided to pursue an education in agriculture (Holt, 1943).

Carver was the first African American to enroll at Iowa State and his quiet determination and perseverance helped him overcome adversity, rejection, and poverty. In a short time he became involved in all facets of campus activities—masseuse for the athletes, member of the debate club, captain in the school's National Guard battalion. But it was his excellence in botany and horticulture that prompted Professors Budd and Pammell to encourage Carver to stay on as a graduate student after he finished his BS in 1894. They were so impressed with Carver's proficiency in plant breeding, he was appointed to the faculty as an assistant in botany.

Dr. Louis H. Pammell was a renowned botanist and as his assistant, George Washington Carver quickly developed scientific skills in plant pathology and mycology. During his two years on the faculty at Iowa State, George co-authored three bulletins for the College Experiment Station, penned two arti-



cles for the Iowa Academy of Sciences, and a report for the Iowa State Horticultural Society. Carver and his work were highly respected; in response to an inquiry concerning Carver's tenure at Iowa State, Pammell said "He did brilliant work in the department, was the best collector I ever had and have ever known." (Pammell, 1928). He continued to collect fungi specimen in Alabama and in conjunction with Alabama Polytechnic Institute wrote a monograph of the fungi of the state, which contained 44 families, 349 genera, and 1110 species. Often, Carver was the first to report the occurrence of fungi on unrelated hosts and to find unidentified species. Several of which were named in his honor: *Taphrina carveri*, *Colletotrichum carveri*, and *Metasphaeria carveri*. (Holt, 1943). Over the years Carver continuously sent mycological specimen to the US Department of Agriculture Bureau of Plant Industry and in 1935 he was officially appointed a Collaborator of the Division of Mycology and Disease Survey. In

time, Carver's mycological collection grew to include over twenty thousand specimens.

Carver's distinguished career in research, teaching, and outreach continued in October 1896 when he joined the faculty of Tuskegee Institute as head of the newly created Agriculture Department. His achievements must be recognized within the context of the era and national forces that dictated the social and economic conditions of southern, rural farm families during the late 1800s and early 1900s. Carver had already achieved three significant "firsts"—the first African American to receive an undergraduate, the first to receive a graduate degree, and the first faculty member—exclusively from the prestigious Iowa State College. Carver was a humanitarian and possessed a strong inner desire to be of useful service to mankind. This characteristic was instrumental in shaping the direction of his career.

The transition to rural Alabama was somewhat of a cultural shock for young Carver; the students, the school's campus, and even the climate and flora were very different from what he was accustomed to in Iowa. He was responsible for developing and teaching the curriculum in agriculture and managing the school's farm, establishing research plots as Director of the Agricultural Experiment Station and initiating an outreach programs to include area farmers.

Carver's early research efforts were devoted to testing low input and sustainable methods of replenishing the eroded soils depleted of nutrients by continuous planting in cotton. His approach was holistic and designed specifically to be of value to small farmers with limited incomes. He introduced the princi-

ples of using winter cover crops of rye, vetch, oats, wheat, and barley, of using green manures of cowpeas and other legumes in rotation, and advocated the use of compost made from animal manure and plant wastes. Were he alive today, he would surely be a proponent of sustainable agriculture.

Nearly all of the farmers were tenants on rented land and depended solely on the meager income from cotton. Carver was concerned about all facets of their daily lives. He was a strong proponent of diversification and suggested planting cowpeas, peanuts, and sweetpotatoes in rotation with cotton, not only for their soil building characteristics but also for their nutritious value. Many of his agricultural research station bulletins were guides to producing better crops through increased soil fertility and also provided easy to prepare nutritious recipes. He felt their living conditions were important; so much so that he discovered an inexpensive procedure for producing paints and stains from extracts of Alabama clays that could be used to paint their homes. He wrote bulletins on the local ornamentals and how to use them in their yards.

The farmers living in close proximity to Tuskegee Institute adapted Carver's radical suggestions of using compost, green manures, cover crops, along with rotation and had phenomenal results. But he was concerned about those who could not travel to the school's campus for the annual farmers conference, workshops, and short courses. In 1904 he fitted a wagon with tools, seeds, and demonstration plants and animals, and began traveling around the state to take "scientific agriculture" to the people. Tuskegee's Moveable School was well received and, through the contributions of a northern philanthropist, a new and improved Jessup Agricultural Wagon was inaugurated in 1906. The Jessup Wagon captured the attention of Seaman A. Knapp, special agent for USDA and early pioneer of farm demonstrations. Knapp was so impressed with the wagon, that he directed it to become a part of the USDA

program and one of Carver's students, Thomas M. Campbell, was appointed the USDA's first African American demonstration agents (McMurry, 1981).

George Washington Carver enjoyed teaching and was said to possess three invaluable qualities: first, a genuine interest in his students; second, innovative teaching methods that combined theory with practical applications; and third, he was excited by and extremely knowledgeable of all subjects in agriculture (Kremer, 1987). Carver's philosophies of education were that nature was the greatest teacher and that, by understanding the forces in nature, one could then understand the dynamics of agriculture; and his role as teacher was merely as a guide to assist students in their quest for knowledge. This sincerity was not lost on the students, nearly all of whom were post-Civil War African Americans eager for an education. Carver was a demanding instructor for he knew they must be well prepared in order to survive as educated men in the south and carry on in the Tuskegee tradition. Many of his former students went on to become teachers, extension agents, businessmen, and even opened schools in the rural south. Carver maintained close contact with many of them through letters and visits.

During the interval between 1910 and 1925, Carver began to spend much of his time away from the Tuskegee campus speaking to farm organizations and civic groups, participating in conferences and workshops at other colleges and providing exhibits of his work with natural resources and foods for field days and state fairs. He began to develop new food uses and evaluate potential commercial products from sweetpotatoes, cowpeas, and the peanut. It was his belief that wastes did not exist and everything could be turned into something useful. As Carver became well known throughout the south, he was consulted by manufacturers (foods, cosmetics, paints and stains, pharmaceuticals) and venture capitalists interested in using his products, processes, or formulas. To all those requesting

his help, Carver freely gave information with little thought of credit or monetary compensation; he felt his discoveries belonged to everyone. Thus we have no clear means of determining how many of his innovations were used and by whom. Today, there is some suspicion of Carver's work. Those skeptics must consider George's chemurgic work was preformed early in the 20th century before modern laboratory equipment and synthetic components were developed and before the emphasis was on food processing.

George Washington Carver holds an unprecedented place in American life—in science, in agriculture, in industry and in social history. He overcame great personal adversity to become the first African American scientist in the United States. Carver was an effective educator and made great contributions towards the revitalization of southern agriculture. He dedicated his life to helping others.

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Article from the Nomination for the ASHS Horticulture Hall of Fame, prepared by Carolyn A. Prince.