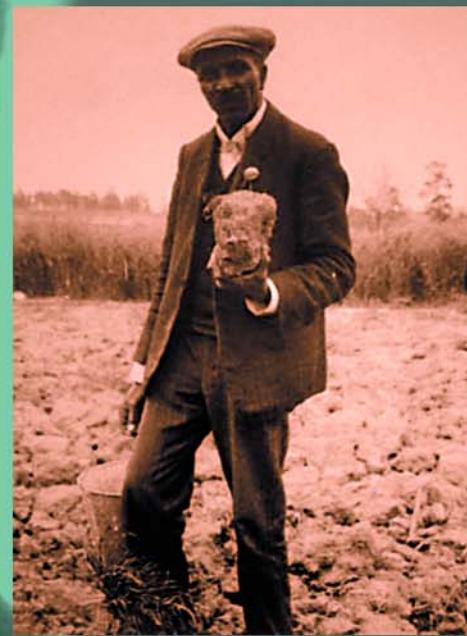
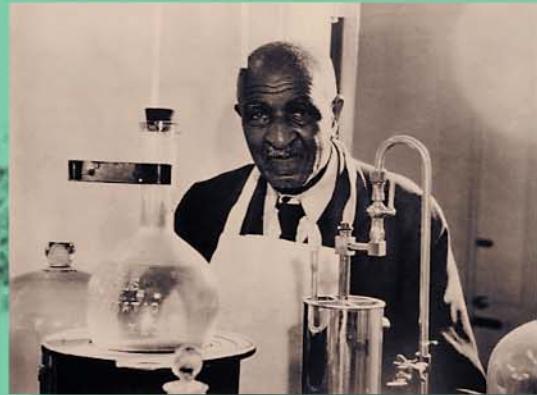


George Washington Carver:  
Chemist, Teacher, Symbol  
January 27, 2005

# Chemical Landmark

A National Historic Chemical Landmark



AMERICAN CHEMICAL SOCIETY  
SCIENCE THAT MATTERS

# "No individual has any right to come into the world and go out of it without leaving behind him distinct and legitimate reasons for having passed through it."

## The early years

George Washington Carver was never clear about when he was born, sometimes writing "about 1865," or "near the end of the war," or "just as freedom was declared." Carver knew neither of his parents. His father was killed in an accident before his birth and his mother, a slave owned by Moses Carver, disappeared under somewhat mysterious circumstances when he was an infant. The young George was raised by Moses and Susan Carver on their farm in Newton County, Missouri. He was a frail youth who spent much of his boyhood assisting Susan with domestic chores. As a boy, Carver learned how to cook, mend, do laundry, and embroider. He also developed an interest in plants and helped Susan with the garden.

As a youngster, he had a keen desire to learn, but his first stab at formal schooling proved disappointing since the school-

master in nearby Neosho knew little more than he did. Not satisfied with basic literacy, Carver decided to move west in the late 1870s, joining blacks disillusioned by the failure of Reconstruction in a vast migration to Kansas. For the next decade, Carver shuttled

among numerous Midwestern communities, attending school fitfully, trying his luck at homesteading for a time, and surviving by using the domestic skills he had learned.

Eventually, Carver enrolled in Simpson College in Indianola, Iowa, a small Methodist school that admitted all qualified applicants, regardless of race or ethnicity. While at Simpson, Carver studied grammar, arithmetic, etymology, voice, and piano. His main interest was in art, especially painting. But he had doubts about whether a black man could earn a living as an artist, and he wondered whether as an artist he could make a contribution to

the welfare of African Americans.

Now in his mid-twenties, Carver had come to believe that he had divinely-granted talents that should be used to improve the lot of blacks. This, he decided, he could do as a trained agriculturalist, and so he enrolled at Iowa State College where he quickly made an impression on the faculty. Working with L.H. Pammel, a noted mycologist, Carver developed his talent at identifying and treating plant diseases.

## Tuskegee

Carver obtained his Master of Agriculture degree in 1896 and immediately received an attractive offer from Booker T. Washington, the principal of Tuskegee Institute who had decided to establish a department of agriculture. Since Washington wanted the faculty to remain all black and since Carver was the only African American in the country with graduate training in "scientific agriculture," he was the logical choice. For Carver, Tuskegee provided the opportunity to fulfill what he saw as a God-given mission to use his training as an agricultural scientist for the betterment of poor Southern farmers.

Carver shared Washington's philosophy for educating young blacks, many of whom were only a generation or two removed from slavery and most of whom were poor and suffered from discrimination. Washington had three objectives for Tuskegee. First, the school was to concentrate on training students as teachers and educators. Second, many Tuskegee students were taught crafts and occupational skills geared to helping them find jobs in the trades and agriculture. And finally, Washington wanted Tuskegee to be "a civilizing agent:" as such education took place not only in the classroom but also in the dining hall and dormitories.

Carver wanted to devote most of his time to scientific research, a wish

George Washington Carver, May 25, 1915, in Gary Kremer, ed., *George Washington Carver: In His Own Words* (Columbia, Mo: University of Missouri Press, 1987), p. 1.

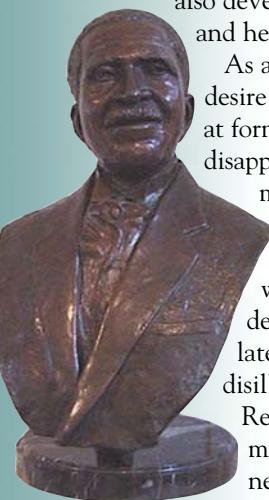
that led to a running battle with Washington, who insisted he teach a full course load. In time, after Washington's death in 1915, Carver did give up most of his formal teaching responsibilities, but he never ignored Tuskegee's students. Carver took seriously Tuskegee's goal of educating the total person, and he understood that many of the students needed to be taught more than chemistry or agriculture: they needed instruction in how to survive in a competitive as well as hostile world.

Carver emphasized a teacher's responsibility to be concerned with his students both in and out of the classroom. Since he lived in a dormitory, he was accessible to all students, regardless of their field of study. Many students, particularly those who suffered most from poverty and discrimination, flocked to him; they became "his boys." Eventually, as Carver's fame widened, he came into contact with young men throughout the South, many of whom were white. Carver carried on a long correspondence with some of these young men. For Carver, who never married and had no children, the friendship, love, and dependence of these young men meant as much to him as the advice he gave meant to them.

## Chemist

From the start of his tenure at Tuskegee, Carver demonstrated that it was possible to increase agricultural productivity on the cotton-depleted, tired old soils of the South. By using good cultivation practices and rotating soil-enriching plants like cowpeas and beans with traditional crops, Carver dramatically increased yields without the use of commercial fertilizers, an expense beyond the reach of most poor Southern sharecroppers or tenant farmers.

Buoyed by his success planting legumes, Carver encouraged farmers to turn to these crops. This became even





George Washington Carver meeting with FDR.

more urgent with the devastation of the cotton crop by the boll weevil in the early 20th century. But if Southern farmers were to be convinced to grow crops other than cotton, there had to be a market for peas, sweet potatoes, soybeans, peanuts, and the like. This need pushed Carver the chemist into the laboratory to work on finding alternative uses for these products. From sweet potatoes, for example, came a raft of new products: flours, starches, sugar, a faux coconut, vinegar, synthetic ginger, and chocolate as well as stains, dyes, paints, writing ink, etc.

It was the lowly peanut which made Carver famous. The peanut attracted his attention because it is easy to cultivate, it enriches the soil, and it is a source of protein, an especially important consideration since poor black farmers could not afford meat. From the peanut, Carver developed a host of new products: most notably milk, but also butter, meal, Worcester-shire sauce, various punches, cooking oils, salad oil, and medicines as well as cosmetics such as hand lotions, face creams, and powder. All together, he discovered more than 300 food, industrial, and commercial products from the peanut.

But inventing new products and demonstrating how to increase yields were only part of Carver's accomplishments. Intrinsic to his image of himself as a scientist – and as someone destined to assist impoverished blacks to improve their lot – was his role as disseminator and interpreter. One example of this was the Jessup wagon which grew out of the need to reach rural dwellers. Teaching modern farming practices and demonstrating new seeds to black

farmers proved difficult, so Carver concluded that if farmers could not come to Tuskegee, then the school would go to them. Carver never operated the wagon, but in 1906 he drafted plans for it, selected the equipment, drew charts that demonstrated farm operations, and suggested lectures on self-sufficient farming, fertilization, and the best crops to grow in various soils.

Carver reached an even wider audience through the bulletins he issued as director of the Agricultural Experiment Station at Tuskegee. Carver intended these publications to serve as manuals for farmers. He did all the research himself and prepared the manuscripts, including writing, editing, and typing them. He had no stenographer at the beginning and never had a printing press. Carver had the bulletins printed at the school's printing office, which frequently had no money. Since most of the bulletins were provided free of charge, Carver often had to beg for money to pay production costs.

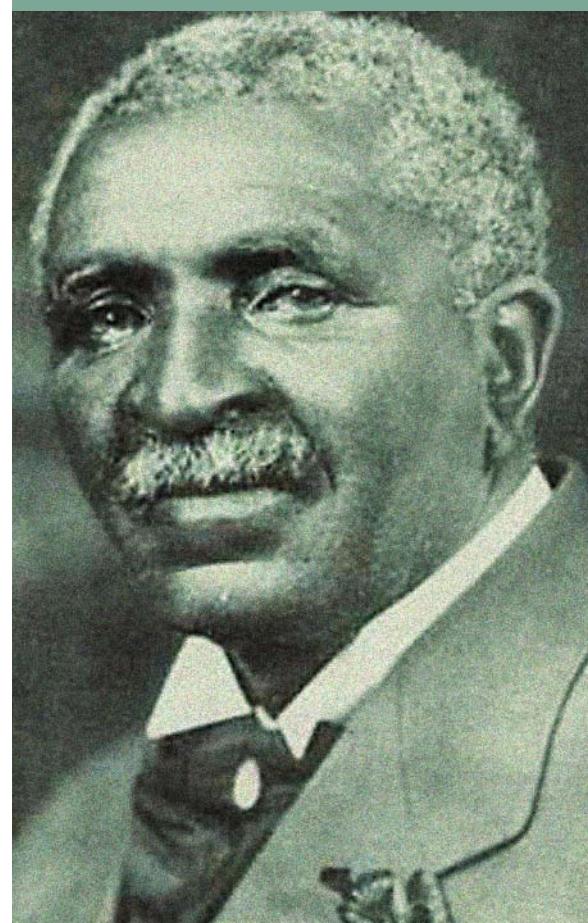
Carver issued forty-four bulletins, ranging from *Experiments with Sweet Potatoes* to *How to Build up Worn Out Soils* to *Fertilizer Experiments in Cotton*. Some were decidedly practical: *How to Cook Peas and Three Delicious Meals Every Day for the Farmer* are examples. Virtually all of the bulletins exhibited what Carver called his "threefold approach:" to supply simple cultivation information for farmers, a little science for teachers, and some recipes for housewives.

But the widest audience Carver reached came in the forum that cemented his fame as "The Peanut Man;" his appearance in 1921 before the House Ways and Means Committee as an expert witness on behalf of the peanut industry which was seeking tariff protection. He demonstrated and described the vast number of items that could be made from peanuts. He so captivated committee members that he received a standing ovation. More importantly, he convinced the committee that peanuts should be protected, helping to secure a high protective tariff while gaining national fame.

## Carver as symbol

**In the 1920s a number of newspapers in the South touted Carver's scientific accomplishments and saw him as an example of the New South, a movement that preached a degree of interracial harmony based on economic opportunity for blacks. Indeed, Carver became a racial symbol for blacks and whites. For African Americans, before the civil rights movement, Carver was a role model to emulate. For whites, he was proof that America was a land of opportunity for everyone.**

**Carver's stature as a symbol had become fixed by his later years. It is no wonder that Americans were quick to make his birthplace a national monument, the first such honor bestowed on an African American.**



## National Historic Chemical Landmark

The American Chemical Society designated the agricultural chemistry of George Washington Carver a National Historic Chemical Landmark on January 27, 2005. The plaque commemorating the event reads:

***George Washington Carver achieved international fame as a scientist and innovator who applied novel chemical insights to agriculture. Born a slave, Carver joined the faculty of Tuskegee Institute (now Tuskegee University) in 1896 where he developed new products from peanuts, sweet potatoes, and other crops and conducted experiments in crop rotation and the restoration of soil fertility. Through his research, Carver urged southern farmers to rotate cotton with soil-enhancing crops such as soybeans and peanuts. To improve the lot of poor southern farmers, Carver produced a series of free, easily understood bulletins that included information on crops and cultivation techniques.***

## About the National Historic Chemical Landmarks Program

The American Chemical Society, the world's largest scientific society with more than 159,000 members, has designated landmarks in the history of chemistry for more than a decade. The process begins at the local level. Members identify milestones in their cities or regions, document their importance, and nominate them for landmark designation. An international committee of chemists, chemical engineers, museum curators, and historians evaluates each nomination. For more information, please call the Office of Communications at 202-872-6274 or 800-227-5558, e-mail us at [nhclp@acs.org](mailto:nhclp@acs.org), or visit our web site: [www.chemistry.org/landmarks](http://www.chemistry.org/landmarks).

A nonprofit organization, the American Chemical Society publishes scientific journals and databases, convenes major research conferences, and provides educational, science policy, and career programs in chemistry. Its main offices are in Washington, DC, and Columbus, Ohio.

## Acknowledgments

Photo Credits: Tuskegee University, National Park Service

Written by Judah Ginsberg

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