Celebrating Black Entomologists

Charles Henry Turner 1867-1923

Transcript of video on Black Scientists in Entomology made for UW Science Saturday event: Feb 2021.

Dr. Charles Henry Turner was a scientist best known for his work on the behavior of ants and bees. He was a thoughtful and studious young man, graduating as the valedictorian of Woodard High School in 1886. He enrolled in the University of Cincinnati, and when he graduated in 1891, he published his thesis on the anatomy of bird brains in the first issue of the Journal of Comparative Neurology. The next year Charles Henry Turner was the first Black author to published excerpts of his study in Science magazine.

Turner went straight on to earn his Master's degree at the same university, where his advisor updated their practices to hold integrated lab meetings with all graduate students. After graduating, he took a position teaching at Clark College in Georgia for a year before starting his doctoral studies at the University of Chicago, which he completed in 1907. During his graduate studies, Turner discovered and named several different species of tiny aquatic crustaceans and rotifers, doing detailed work on very tiny creatures.

Throughout his career, Turner had to endure systemic racism as he published his work, and as he looked for academic positions. There were motions to hire him at the University of Chicago, until an administration reorganization halted that progress. He finally started a permanent teaching gig at Sumner High School and resumed studying insect behavior after hours for his entire career, In 1910, he was elected to the Academy of Sciences in St. Louis, and continued publishing until retiring in 1922. In those years of teaching, it is incredible to think about the amount of work that Turner accomplished while teaching a full-time load of classes every day. He conducted behavioral studies on many different types of invertebrates, but is best known for his work with ants and bee behavior.

Turner's work on ant colony behavior and communication led the French scientist Victor Cornetz to name an ant movement pattern "Turner circling" in his honor. With bees, he demonstrated that bees can see both color and pattern, and use them to create "memory pictures" of the environment. They are also near-sighted, and need to hover close to an object before seeing it properly.

Turner overcame numerous barriers to continue his research, enduring long hours and low pay, conducting experiments with no fancy lab facilities, and little to no financial or institutional help. Other scientists recognized that his work was valuable but systemic racism often led to him not getting proper credit for his contributions.

In total, Charles Henry Turner published over 70 studies (that's an average of 2 rigorous papers per year!) His work shows that you don't have to have a prestigious position to do great work. Turner was also a leader in Civil Rights efforts in St. Louis, advocating for equality. He used a lens of behavioral studies to combat racism, and wrote several papers exploring the social conditioning of racism, discussing social responses to the unfamiliar and learning through imitation of conscious and unconscious bias.

There are several children's books that explore the life and science of Charles Henry Turner to inspire young folks to reach for their highest goals and discover the fascinating world of insects: Buzzing with Questions, by Janice Harrington, Bug Watching by Michael Ross, and a feature in Little Legends by Vashti Harrison.

Teaching high school is difficult and exhausting, but it is also vitally important for inspiring the next generation and Turner contributed to the lives of hundreds of students. Whenever you get the chance, thank a teacher!

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Charles Henry Turner (continued)

Several elementary schools and a university hall at Clark College (now Clark Atlanta University) are named after Turner, and the Animal Behavior Society has an award and mentorship program named in his honor.

On Charles Henry Turner's tombstone, his epitaph is short but all-encompassing, and simply reads:

"Scientist".

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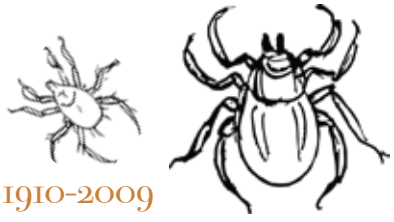
Sophie Lutterlough 1910-2009



Sophie Lutterlough was a preparator and researcher at the Smithsonian institute, working on saving and identifying ticks and mites.

She graduated at the top of her class from Dunbar High School in D.C., and eventually found work at the Smithsonian Museum of Natural History. Unjust racial and gender barriers at the time prevented her from working in a scientific job, but she took a job as an elevator operator for a number of years, and walked through the museum on her breaks. It was her aim to become a "one-woman information bureau" about the museum, and helped guests with their questions.

She advocated for herself and asked about a position in Entomology, and got a job preparing insects for the curator J. F. Gates Clark. Preparing insects involves both pinning and labeling dry specimens, and making sure that fluid specimens are properly housed and labeled so that they can be in their best condition for future research. After only two years, Lutterlough was promoted to research assistant for curator Ralph Crabill, and through her dedicated work and careful studies, quickly became an expert in identifying myriapods, or centipedes, and ticks. Throughout her career she continued her education to hone her knowledge by taking additional classes in Entomology and German.

During her time at the Smithsonian, Sophie Lutterlough restored hundreds of thousands of specimens that were otherwise destroyed without her care. Restoration involves soaking dried out specimens in a series of chemical baths to make them appear fresh again. During a single year, the Smithsonian records document 306,000 ticks! And yes, while ticks may seem gross and horrible, this work helps to study them so that we can best avoid tick-borne diseases for humans and other animals. The important historical Bishopp collection was all dried out and almost completely lost, and she rescued 35,000 ticks using this method.

Lutterlough identified and co-described over 40 new species of ticks with Crabill before she retired, having dedicated 40 years of her life to the museum. Before retirement, she was presented with an Exemplary Service Award for everything she did for saving the collections and contributing to scientific research

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A species of mite is named in her honor: "*Pymephorus lutterloughae* Smiley & Whitaker, 1979" which might seem a little strange but is pretty cool for an entomologist. Upon retiring, Sophie Lutterlough said "It won't be so easy to leave here after 40 years," and she spent many happy years afterwards with her family. Museum workers often get lost in the rush of scientific publishing frenzy and accolades, but she will always be remembered for the dedication and care that left a lasting mark on such a historic collection.

Sayah O. 2016. "It Won't Be Easy to Leave after 40 Years": Sophie Lutterlough's Career at the National Museum of Natural History. Smithsonian Institute Archives.

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Margaret J. S. Collins 1922-1996

Dr. Margaret Collins was often called “the Termite Lady”, for her lifelong dedication to studying these tiny insects. Margaret James was a young woman who always loved to read. In her interview in the book Black Women Scientists, she said that her drive and passion for science was encouraged by her family and she “never learned what she couldn’t do as a child, as a woman, as a Black person”.

Having that encouragement and connection with other people who loved biology was inspiring as well, as “enthusiasm sometimes behaves like an infectious agent”. She graduated high school early at 14 years old, and started studies at West Virginia State College. A lackluster professor almost destroyed her enthusiasm for science, but she soon found mentors in Toye George Davis, a Black professor who had recently come from Harvard, and Frederick Lehner, a Jewish refugee scholar from Europe who taught German and French. In 1943, Margaret Strickland, newly married, graduated with a major in biology, and minor in physics and German. She made a cross-country jump to Chicago, and studied with Alfred Emerson, an entomologist who focused on termites. This ignited a lifelong passion for the little insects, which earned her the nickname “Termite Lady” for her years of dedication. Emerson was inclusive and forward-thinking in the lab, but unfortunately did not allow women to come on fieldwork expeditions, which was what she was most interested in doing.

Her PhD was on the “Differences in Toleration of Drying among Species of Termites”, and she was the first Black female entomologist to earn a doctoral degree in the U.S. With a name shift to Collins, she moved back east and throughout her career she held positions at Howard University, Florida A&M, and the Federal City College (now University of D. C.), moving between D.C. and Florida.

Margaret Collins was a strong leader and advocate for Civil Rights, and throughout her career she endured racism from within the scientific community and without, so much so that one of her guest lectures was cancelled due to a bomb threat. During the Tallahassee bus boycott in Florida, she volunteered her car to drive people to and from work, ensuring the success of the campaign. Collins was vocal about the American Academy for Advancement of the Sciences appointment of a scientist that perpetuated racist ideas under the guise of science, and organized an AAAS symposium titled “Science and the Question of Human Equality”. This steadfast work on civil rights activism delayed her publication record for five years but she wouldn’t change a thing, saying “I did what I thought was the most important thing, that’s all there was to it.”

In 1979, she reopened her mentor Emerson’s field station in Kartabo, Guyana, to continue the research on native species, and her fieldwork took her across the world. Margaret Collins retired from her several teaching appointments in 1983, but immediately embarked on a new adventure as a senior research associate at the Smithsonian, soon becoming the curator of termites. She continued fieldwork around the world, publishing over 40 papers of her work, mostly about termites of course. Collins also established a permanent reference collection of native insects at the Georgetown Museum in Guyana, as well as building the impressive Collins collection in the U.S. National Museum. She is honored with the name of a new termite species: *Parvitermes collinsae* (Scheffrahn & Roisin 1995). She died doing what she loved – out in the field collecting termites in the Cayman islands, and the legacy of “the Termite Lady” will stand forever.

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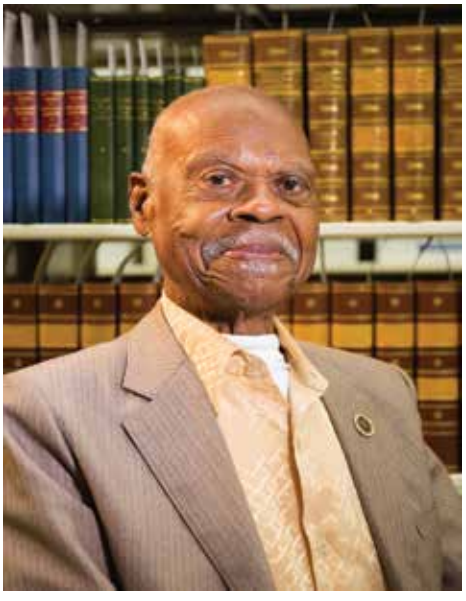

Ernest James Harris 1928-2018

Dr. Ernest James Harris made enormous strides in protecting the fruit trade with his work on the management of fruit fly pests and biocontrol methods.

Ernest James Harris's teachers recognized that he had a natural curiosity and interest in science, and they encouraged him to stay in school and pursue a college degree. In 1946, he enlisted in the armed forces and became one of the first Black Marines in the United States, serving in the Montford Point Marines which was a segregated unit. Through this service, he was able to put both himself and his sister through school on his GI bill, earning his Bachelor of Science in Chemistry/Zoology in 1951 at the University of Arkansas, Pine Bluff.

After undergrad, he lived in Milwaukee, Wisconsin as he took additional classes and worked. It was here that he met his wife, Bettye-Jo, and enjoyed taking cross-country motorcycle rides on his bike. Eventually Harris made connections to work in Minnesota forestry, surveying habitat and collecting data. This work transitioned to his graduate studies at the University of Minnesota, where he earned his Master's degree in entomology studying weevils. Harris soon took a job in the United States Department of Agriculture – Agricultural Research Service in Hawai'i, where he worked extensively on controlling fruit fly pests that damage fruit exports in Hawai'I, Guam, North Africa, and other places around the world. This involved sterilizing thousands of flies and releasing them so that when they breed with the wild flies, they cannot lay any eggs.

As he worked for the USDA, Harris also made progress towards a PhD, graduating in 1975 with a doctorate degree in Entomology. His main work focused on the control of the Mediterranean Fruit Fly, or Medfly, which was quite invasive and damaging. The flies themselves are strikingly beautiful, but their maggot babies are less welcome and his research helped protect thousands of dollars of fruit crops.

Harris worked on establishing a natural biocontrol of these particular flies, by creating stable lab colonies of a type of tiny wasp that parasitizes fly eggs, thus controlling the population of flies. This special lab colony is known as the "Harris strain" of wasps.

During his career, Ernest James Harris accumulated numerous awards and recognitions. He was accepted into the Royal Entomological Society of London, inducted into the Arkansas Black Hall of Fame, received an international commendation from the Chilean government for saving their fruit exports from fly damage, earned a NAACP lifetime Achievement Award, the Congressional Gold medal, and was inducted into the USDA-ARS Hall of Fame. Even when he retired in 2006 he kept coming in to work! In total, Dr. Harris published over 100 papers and book chapters about his work which are still cited today.

The Congressional Gold Medal was awarded in recognition of his service in the Montfort Point Marines, the first Black Marines who served during World War II, helping to desegregate the military and take steps on the long, rough road toward equality. Dr. Harris accepted his medal proudly as friends and family watched in support, and he had the honor of meeting President Barack Obama. In his autobiographical Memoir, Dr Harris recommended that young entomology students join a professional societies and present their work, reaching out to "meet other scientists and establish beneficial collaborations". For when we work together and support each other, that's how we can stay strong and reach new heights.

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These are four historical entomologists who have made enormous impacts on the study of insects and arthropods - As with many historical figures, this summary is focusing on just the entomological aspects of a rich and complex life – we encourage everyone to continue exploring and read more about these amazing people and their families. There are more folks who have not been highlighted here, and we are grateful for the work they have done.