A Bio-Bibliography of

Caryl Parker Haskins

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Compiled and Edited by
Alice B. Dadourian

yvonix.com
New Haven, Connecticut

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In the field of observation, chance favors only the prepared minds.

—Louis Pasteur

Foreword

Some time ago, I received a very nice letter from a young man who had been bookstore browsing with his elementary school-aged son, and rediscovered a copy of Caryl Haskins's *Of Ants and Men*. "I know the author!" the young man had said excitedly to his son. As an undergraduate, the young man had been a most admiring devotee of Dr. Haskins. The two had exchanged several letters in a correspondence prompted by the young man's fascination with ants. He was now writing to express his gratitude for Dr. Haskins taking the time to respond to the questions of a "lowly" (in his words) undergraduate.

As Special Assistant to Caryl and Edna Haskins for the past six years, I have received countless requests for reprints of their articles and books, and transcribed for Dr. Caryl Haskins, just as many responses to inquiring students. Dr. Haskins has published five books and some 230 articles, much of the work on ants, co-authored with Dr. Edna Haskins. It occurred to me that a Bio-Bibliography would be of interest to many people.

I sat down with Dr. Haskins in 1993 and started compiling the bibliography. He was most accommodating and rewarded me often with anecdotes about how he met and subsequently married Edna; about his and Franklin Cooper's founding of the Haskins Laboratories; and the joint ant research for which he and Edna Haskins are especially known.

The following is a result of the many afternoons of conversations at their Washington, DC apartment and Westport, Connecticut estate where the Drs. Haskins still reside.

I am deeply indebted to Yvonne Manning-Jones for the invaluable editorial assistance with virtually everything that appears in this Bio-Bibliography.

I am also grateful to Dr. Philip Rubin of the Haskins Laboratories who developed the Haskins web site where much of this background material now appears.

It has been my honor to be affiliated with the Haskins for nearly thirty years. The publication of this Bio-Bibliography is my personal tribute to a man whose leadership and support is lauded as a major contribution to pure research.

Alice B. Dadourian
Guilford, Connecticut
January, 2000

Contents

Walks by the River at Twilight

It has been seven decades since the publication of Caryl Haskins's *Of Ants and Men*, a pioneering and most profoundly interesting book on the subject of ants, and its author, by far, one the most knowledgeable on the subject. Admired as scientist, author, government advisor, and helmsman of two leading scientific institutions, Haskins is equally esteemed for what he often called his "fascinating diversion" with ants.

Caryl Parker Haskins was born in 1908 in Schenectady, New York to Caryl Davis Haskins and Frances Parker Haskins. His father was employed by the General Electric Company in Schenectady where the family lived in a cottage at 1108 Avon Road. Both parents were natives of Lynn, Massachusetts; however, as an infant, the father was taken to live with his grandparents in England. He returned to Massachusetts in 1906, at the age of twenty, with a small inheritance from his grandfather. His funds barely lasted until he settled in Sudbury, where he was obliged to buy a rifle and shoot rabbits for food. Within a few months of his arrival, he met and married Frances Julia Parker and began working for General Electric.

When young Caryl was about three years old, his father took the family, along with the baby nurse, on a train tour to visit General Electric plants throughout California. The trip was pleasant and uneventful until they reached a stopover in Salt Lake City. There, tragically, the elder Caryl contracted a virus and developed pneumonia. He died within a few days.

A griefstricken and distraught Frances returned home with her son but found herself incapable of coping with the demands of raising a toddler. Caryl was given over entirely to the care of the nurse and was not to see his mother for nearly her entire year of mourning.

Frances did recover but became obsessively protective of Caryl, fearing kidnapping, a crime of increasing popularity during the era.

As a youngster, Caryl showed a keen interest in the world of insects. It was an interest that continued throughout his secondary school years at Schenectady High School, Albany Academy, and well into Yale University. Caryl entered Yale University in 1926. He was accompanied to New Haven by Frances, who rented an apartment for the two of them at 39-37 Trumbull Street; she remained there until Caryl's graduation. "It was not unusual for a mother to follow her son off to college in those days," said Dr. Haskins recently.

Caryl was active in a number of Yale clubs and was a member of the ROTC. He published his first scientific work, "The relation of chemistry to agriculture" in the *Journal of Chemical Education* at the age of eighteen. It was the first of what was to become a most prolific contribution to scientific literature.

Caryl published several more articles before graduating, including "Notes on the behavior and habits of *Stigmatomma pallipes* Haldemann" and "Note on an imitation of the deportation habit in *Polyergus lucidus* Mayr," both in the *Journal of the New York Entomological Society*.

Following his graduation from Yale University in 1930, Caryl traveled around the world, making the first of many visits to Australia. He returned to enter Harvard University later in the year as a graduate student.

Haskins's research at Harvard involved quantitative investigations of gene action in the fruit fly drosophila, using the "sensitive volume" techniques pioneered originally at the Curie Laboratories in Paris. Others joined in that effort with Haskins to continue the work, with the encouragement of Harvard University. They were inspired by the examples of the Loomis Laboratories in Tuxedo Park, founded by Alfred Loomis, and by the original core of the Radiation Laboratory of World War II at M.I.T., where American war-time radar was originally developed.

Haskins earned his Ph.D. from Harvard in 1935 while continuing research in radiation physics at the General Electric Company's Research Laboratory. He equipped his garage to provide a starting point for the continuing study of American war-time radiation. Thus was founded Haskins Laboratories, devoted to multifaceted programs in biophysics and microbiology.

Franklin Seaney Cooper, an M.I.T. graduate engineering student devoted to research in physics, was employed at General Electric during the same period. He and Caryl Haskins shared similar research interests and the two were successful in developing a program, initiated by Cooper at

M.I.T., for the study of the slow-electron radiation of mold spores in high vacuum; the research proved highly productive.

Upon completion of the radiation study, M.I.T. and Harvard supported Haskins and Cooper in establishing a small inter-university team to extend the work and Union College awarded a research professorship to Haskins, facilitating the move of Haskins Laboratories from the garage location to other existing operational spaces in Cambridge and Schenectady, at M.I.T., Harvard, and Union College. Plans for the expanded Haskins Laboratories were laid out while the two young men traveled the Mohawk Trail together between Massachusetts and New York.

In the fall of 1935, Caryl Haskins attended a party at Radcliffe given by Phyllis Goodhart. There he met a young English woman scientist, Edna Ferrell, who was in the United States for a two year fellowship. As a scientist—a woman scientist—Ferrell was clearly ahead of her time.

Born in Blyth, Northumberland England in 1911, she later attended King's College, Durham University, earning a B.Sc. in physical chemistry and graduating with first-class honors in 1933. Following graduate work at her home university, she came to work for two years at Radcliffe and at Harvard as a recipient of the Augustus Anson Whitney Fellowship from King's College and as a Ross Sidgwick Fellow of the British and American Associations of University Women. Ferrell later received her M.S. in chemistry from Radcliffe in 1937 and her Ph.D. from King's College in the same year.

Shorty after meeting Caryl Haskins, Edna Ferrell paid an extended visit to Cuba to visit her uncles who

Young scientist Edna Ferrell, circa 1939.

were heads of the Cuban Railway. During her stay, Caryl became a frequent visitor.

Edna returned to England just before the war and obtained a government position in Liverpool, where she became a member of the senior research and administrative staff in the War Department, carrying on research in diagnostic explosives and working with mist dissolving aircraft. The results of her work were recognized as important in the British war effort. Consequently, she was appointed His Majesty's Inspector of Factories in the Ministry of Labor and National Service, becoming the first woman to occupy the post.

Caryl Haskins made several visits to Edna while she was in England and Edna returned often to the United States.

In 1938, Caryl Haskins traveled to Africa to collect ants in the dense temperate rain forests of the Mikeno

Sector in Ituri Forest and on the Ruindi Plains. He was particularly interested in the formation of colonies by young isolated Ponerine females described by Haskins as "dutiful daughters who acquired the ability to mature in the shortest possible time to lighten the burden upon their mothers, sacrificing physical vigor and suppressing all the organs they did not need."

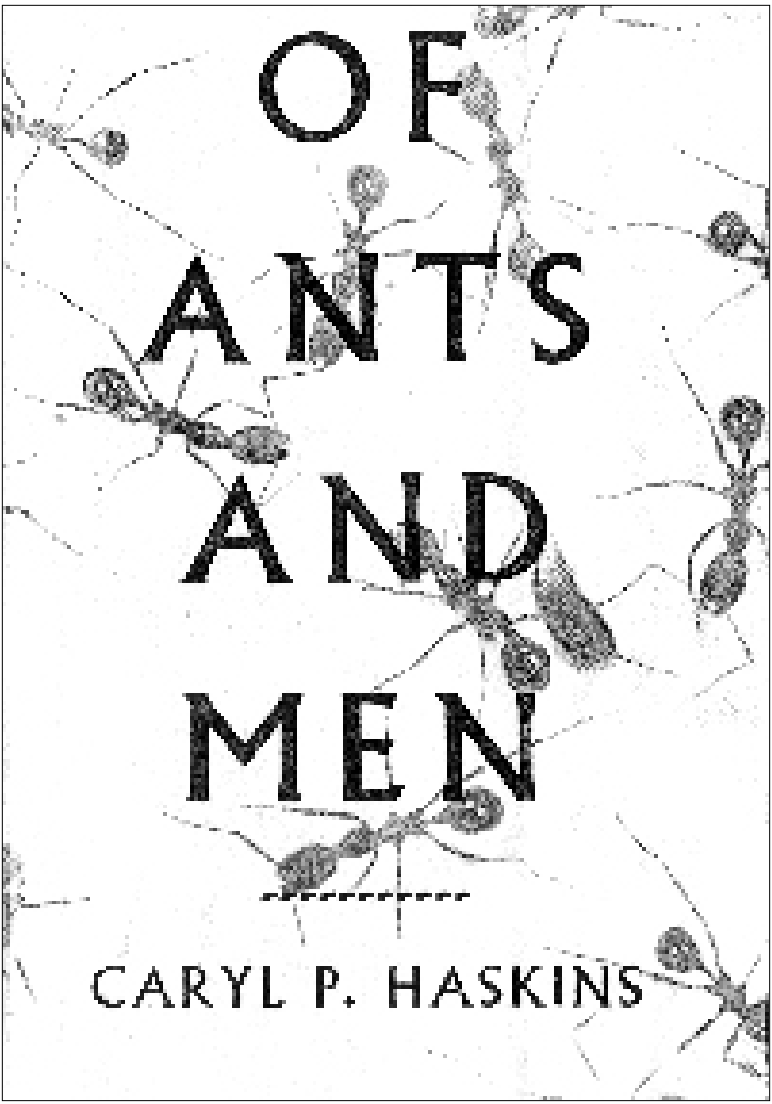
In 1939, Haskins published the highly acclaimed *Of Ants and Men,* an analogous study of the societal structure of the two species—from social consciousness to the purpose of social organization to general social trends. The book was devoted, says Haskins, to the elucidation of many fascinating problems.

> "Are there any real parallels to be drawn between the societies of ants and men? Can we as we gaze at the ant colony discern any social pitfalls which menace both groups alike, into which ants, perhaps, have fallen more deeply than men, and from the spectacle of which we can draw a picture in somewhat greater perspective of the social tendencies of our own and other times?"

The book was immensely popular and has been reprinted in thirteen languages.

In 1940, Caryl Haskins and Edna Ferrell were married in a simple service on July 12th, in Waynesboro, Virginia. They honeymooned in Yosemite and in Yellowstone before returning to New York City where Haskins and Cooper set up the Laboratories in a new location.

The research efforts of the young scientists, though successful, were regarded as rather unconventional; therefore they had difficulties in obtaining funding. Undaunted, Haskins and Cooper purchased a small mid-town



Cover of 1939 first edition.

Manhattan, New York, manufacturing firm—Lerochrome Cameras—devoted to the development and marketing of a color camera. The firm was promptly renamed National Photocolor Corporation and flourished until well after the war. (The camera developed was later used to photograph the 1945 Yalta Conference of Roosevelt, Churchill, and Stalin.)

In 1940 and 1941, Haskins and Cooper were recruited to Washington at the invitation of Vannevar Bush to work for the war effort. Participation in the three operations in New York, Cambridge, and Schenectady became logistically difficult. The Haskins Laboratories were moved still again to a more accessible location in a rented space in Manhattan. The Cambridge operations were discontinued but those in Schenectady continued. The Laboratories remained in New York until 1970 when they moved to New Haven, Connecticut.

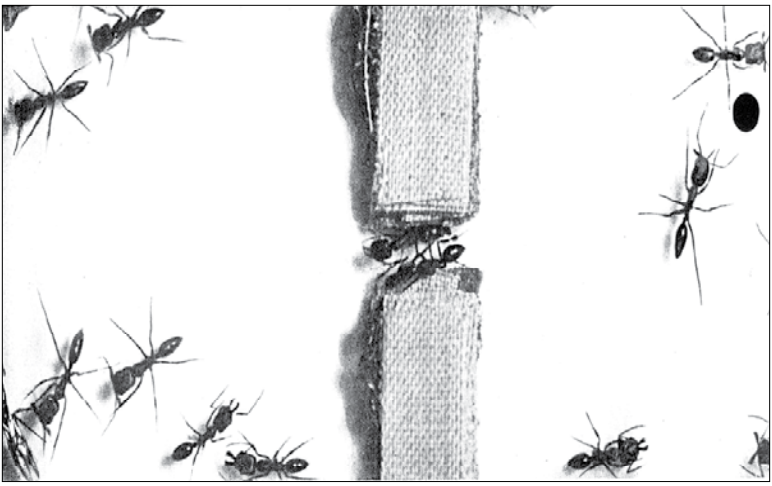
Edna Haskins again served in the war effort, first in Canada, and later in Washington. She joined the Haskins Laboratories as a staff member in 1940.

Edna Haskins's primary research interest was the study of societies in nature. The collaborative efforts of Caryl and Edna Haskins produced findings that are recognized as some of the most important research in ant biology to date. They co-authored a number of conclusive works together, and with other researchers.

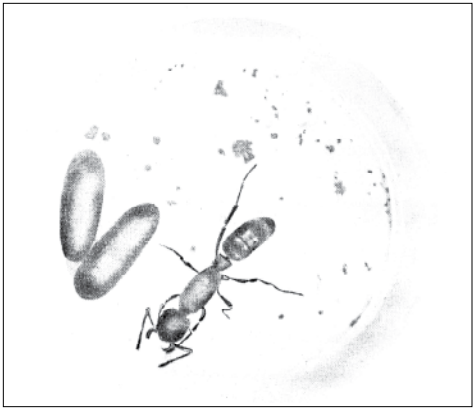
Edna Haskins was also deeply interested in foreign affairs and world travel; she and Caryl traveled extensively, returning often to Australia to further their study of *Lebistes reticulatus* and the biology and social behavior

of the archaic Ponerine ants of the genera *Myrmecia* and *Promyrmecia.*

At the end of World War II, the Washington Office of Scientific Research and Development, as a part of a closing



A jumping Ponerine ant. From an original photograph.



A Ponerine ant and her first brood. Photo by D. M. Gallagher.

program devoted to developing prosthetic devices for returning soldiers blinded, deafened, and maimed in combat, set up a special committee of the National Research Council to organize research on prosthetic devices for the blind. The committee, in turn, asked Haskins Laboratories to serve as the central research and development center in this area. The Haskins staff of scientists was broadened to include a young experimental psychologist, Alvin Liberman, who was involved in wartime work at Yale. In addition, other linguistic and engineering skills were recruited to bring a "borderline-oriented" group to bear on a multi-disciplinary program.

Beginning in the early 1950's and continuing for the next twenty-five years, Caryl Haskins collaborated with Luigi Provasoli and Seymour Hutner to discover a number of important findings in microbiology, nutrition, and genetics, specifically in the physiology and cultivation of algae, protozoa, and invertebrates.

In 1955, Edna Haskins gained recognition as a pioneer as a woman scientist, noted in *Who's Who in Commerce and Industry* and later in an *Atlantic* piece, "Science: Careers for Women."

It was also in 1955 that Caryl Haskins, along with friend and colleague, Edward O. Wilson, set off on an unsuccessful yet rewarding search along the southwestern coast of Australia for the lost species, *Nothomyrmecia macrops*. They did not find *Nothomyrmecia* but discovered several other species. Wilson credits "the added aura and fame contributed by our trip" as aiding enormously in *Nothomyrmeci's* later rediscovery by Robert Taylor in 1977. The rediscovery supported the theory of William Morton Wheeler and Haskins,

that *Nothomyrmecia* had the most primitive social organization of any known living ant and that social life in ants began when subordinate daughters remained in the nest to assist their mothers.

Haskins also studied extensively the bulldog ants of the genus *Myrmecia*, and made important discoveries on sound production and hearing in ants.

Caryl and Edna Haskins provided their leadership and support to several organizations concerned with scientific, educational, and policy issues; in 1955, Caryl Haskins was appointed to the RAND Board of Trustees.

Caryl Haskins in 1955. Carnegie Institution Photo.

The work of the Haskins Laboratories was focused on a guidance device project and the development of a reading machine for the blind to convert printed text into spoken messages. The development of the second project required many years but added insights and two basic engineering developments leading to the Laboratories' current research program.

The development of a sound spectrograph for the analysis of speech sounds and of a pattern playback for reconverting sound spectrograms into speech, provided watershed developments for the later progress at the Laboratories in speech study.

The use of the pattern playback machine led to groundbreaking conceptual insights into the study of speech and speech recognition. Research in speech perception, speech recognition, speech production, and speech synthesis, as they relate to reading, language disabilities, cognition, and other topics, continues at Haskins Laboratories today, forming a major trademark of the institution.

For over sixty years, the most significant contribution of the Haskins Laboratories has been a multidisciplinary approach to the study of speech and language, whereby investigators with varied expertise can come together to work in an innovative technological environment.

The work of the Haskins Laboratories has been supported for many years by the National Institute of Child Health and Human Development, the National Institute of Deafness and Other Communication Disorders of the National Institutes of Health, and the National Science Foundation, among other institutions. The Laboratories

acknowledges, most especially the help, both tangible and intellectual, of Caryl and Edna Haskins. Haskins remained the Laboratories President and Director of Research until 1956, when he was appointed President of the Carnegie Institution of Washington, a position he held until 1971.

In 1994, Edna and Caryl Haskins established a lectureship that brought distinguished scholars in science-related areas to RAND, while continuing their support as members of several organizations, including the American Association for the Advancement of Science, the Carnegie Institution of Washington, Council on Foreign Relations, the Audubon Society, Carnegie Corporation of New York, and Rockefeller University. The Haskins remain members

Caryl and Edna Haskins in 1985. Carnegie Institution Photo.

of several clubs: Century Club of New York, Cosmos Club of Washington, the Metropolitan Club of Washington, Sulgrave Club of Washington, the Colony Club of New York, the Cosmopolitan Club of New York, the Somerset Club of Boston, and the St. Boltolph Club of Boston.

Former Carnegie President, James D. Ebert, once wrote that the best characterization of Caryl Haskins is seen by words penned by Haskins himself in his 1961-1962 annual presidential report to the Institution:

> "It is the gifted unorthodox individual in the laboratory or the study or the walk by the river at twilight who has always brought to us, and must continue to bring to us, all the basic resources by which we live. Let us guard and honor his position and his profession with every resource we can muster."

Caryl Haskins is indeed that gifted individual who above all, believes that scientific discovery comes after preparation and trained intelligence and that its creative pursuit must always be unfettered and unregulated.

In 1990, at age 82, Caryl Haskins, co-authored with Edna Haskins, at age 79, "Notes on the effectiveness of certain bisexual species of Poecilia and *Limia* (*Teleostei: Poecilliidae*) in inducing gynogenetic embryo development in the all-formosa diploid amazon molly, poecilia formosa (girard)."

Caryl Haskins once said, "The man who is too old to learn was probably always too old to learn."

CARYL PARKER HASKINS

Scientist, Author

born Schenectady, NY, August, 1908

B. S., Yale University, 1930
Ph.D., Harvard University, 1935
D. Sc., Tufts College, 1951
Union College, 1955
Northeastern University, 1955
Yale University, 1958
Hamilton College, 1959
George Washington University, 1963
LL.D., Carnegie Inst. Tech, 1960
University of Cincinnati, 1960
Boston College, 1960
Washington & Jefferson College, 1961
University of Delaware, 1965
Pace University, 1974

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