

Obituary

Frances Elizabeth Clayton, 1922-1998

Frances Clayton was born in Texarkana, Texas, to Carl C. and Louise Heath Morriss Clayton. After a degree from Texarkana College, she attended Texas State College for Women at Denton, receiving a B.A. degree in 1944. The following year she began graduate work at the University of Texas in Austin with Professor Wilson S. Stone as supervisor. She finished a Ph.D. in Zoology-Genetics in 1951, with minors in physiology and bacteriology. She then stayed on at Austin, working as a postdoctoral fellow in the Genetics Group.

Those of us who were present in the laboratory at the same time remember her as a person who quietly and diligently went about her work with a minimum of ostentation and a maximum of productivity. From 1951 to 1954, she was involved in a wide spectrum of research activities ranging from the expression of the alleles at the lozenge locus in *Drosophila melanogaster* to the effects of ionizing radiation on the production of chromosomal aberrations in *Drosophila virilis*. The latter studies resulted in the publication of a series of nine important papers in refereed journals, written alone or in collaboration with Professor Stone and then graduate students Felix Haas, Calvin Ward, Edna Dudgeon, and Mary Alexander. She continued with these areas of research after she left to join the faculty at the University of Arkansas, much of it in collaboration with Professor Marshall Wheeler and then student Marvin Wasserman at the University of Texas.

During her years at the University of Texas, and indeed throughout her career at the University of Arkansas since 1951, Frances did an extensive amount of teaching at both the graduate and undergraduate levels while at the same time doing the significant cytological research that formed the basis for her subsequent active life in science. All the while she maintained the same unpretentious demeanor, wry sense of humor and perceptive appreciation of those she worked with, both as a graduate student and in later professional life.

The last project of Wilson Stone, who died in 1968, centered on Hawaiian species of *Drosophila*. In June of 1963, he and Elmo Hardy of the University of Hawaii, launched "The Hawaiian *Drosophila* project", by bringing to Hawaii a group of seven scientists for the summer. These were picked by Stone and Hardy as having certain specialized skills that might contribute to the development of an interdisciplinary study of the evolutionary biology and genetics of the amazingly diverse and complex fauna endemic to the islands. Frances Clayton was "charter member" of this group. For the next 25 years, before failing eyesight ruled otherwise, she took on the job of characterizing the metaphase karyotypes of hundreds of closely related species of drosophilids. Such a project was never "assigned" to her. She saw the usefulness of the data for unraveling patterns of evolution in the family and slowly and unselfishly took over this job, not only for the Hawaiian species, but the rest of the family as well. Meticulous metaphase study of *Drosophila* has always been a frustrating undertaking that most cytologists have studiously avoided. About fourteen references in the bibliography and her final metaphase catalog summary for the family Drosophilidae that follows in this issue are a major scientific legacy of Frances Clayton.

But to equate Frances' contributions to the Hawaiian project simply with her metaphase chromosome counts is to oversimplify. Clayton sought out, recorded, and documented with great accuracy the numerous exceptions, supernumeraries, intra-specific polymorphisms, and heterochromatin variations within and among these many closely related species. She was also involved in a discovery that made possible the laboratory rearing of these species. Many of the species have unusual nutritional requirements; these were met by the invention of the Wheeler/Clayton (1965) method of rearing *Drosophila*. This success did much to convince granting agencies in the 1960's that the Hawaiian drosophilids were worthy material for study and could be handled routinely in the laboratory. The technique is still used today with little modification.

Clayton was not satisfied with laboratory contributions alone and never missed an opportunity to go along on field expeditions in Hawaii, as usual, developing her own particular style of work. For example, during one week-long expedition to a rain forest a mile above sea level on the island of Hawaii, she chose to intensively work one small area in great detail, rather than range widely in the mud and rain. At the bottom of one deep forested pit, she found a convenient

perch in the chilling rain on a low horizontal tree-limb. Here she would sit under her poncho between rounds of inspecting a series of sponges baited with banana mash. When rounded up at days' end, she would silently hand over her catch of flies. She often had more than the other collectors, a fact she would accept with amusement and minimum of unnecessary conversation.

Janet Gallman has written the following:

"I had the privilege as an under-grad and then grad student to take Human Genetics and Experimental Genetics from Dr. Clayton. Never spoon feeding, but inspiring you to inquire and intuitively assimilate knowledge . . . she had a very sly (& acute) sense of humor . . . she was a neat lady and an inspiration to me. . . ."

Publications of Frances E. Clayton

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