IN MEMORIAM

George D. Snell (1903–1996)

The Last of the Just

As I leaf through the In Memoriams published in the 44 volumes since Immunogenetics’ inception in 1974, I feel as if I were strolling through a portrait gallery of eminent acquaintances, colleagues, and friends. As I pause at each face, into my consciousness emerge pictures, voices, and even the tastes and smells associated with past events. Unordered in time and space, the scenes flicker at random: a night of joke-swapping in a wine cellar in Brno, Moravia; a walk on a crispy winter morning in Great Falls, Montana; a formal dinner at a Faculty Club in London; an afternoon of heated debate in the park at Brook Lodge, Michigan; a precarious drive in the hills overlooking Torino, Italy; a mixed discussion of art and science under the sculptures on the UCLA campus; on and on. A treasure trove of memories. And as I pass from one portrait to the next, I feel a pang of grief because I will never again hear those voices, shake those hands, see the smiles, or experience the special warmth that each of these individuals radiated. Alena Lengerova, William H. Hildemann, Berenice Kindred, Milan Hašek, M. R. Irwin, Peter Medawar, Ruggero Cappellini, Flemming Kissmeyer-Nielsen, Otakar Stark, Hilary Festenstein, Jack H. Stimpfing, and Donald C. Schreffler — all gone forever.

And now, at the end of the gallery, I face the sad task of adding to it the portrait of George D. Snell, who passed away on June 6, 1996, at Bar Harbor, Maine. George was already 93 years old, and I should have been prepared for the news of his ultimate departure; but when it came I was consumed by a sense of irretrievable loss. Only the thought that he had had a long, harmonious, and productive life makes eulogizing him a less overwhelming task.

Ancestry and Childhood

George D. Snell was born on December 19, 1903, in Bradford, Massachusetts, the youngest of three children. Nothing in his family tradition seemed to mark him for an academic career. On both parents’ sides, his ancestors, an old New England clan founded by several Mayflower passengers, were ministers, businessmen, and engineers. George’s grandfather moved from Massachusetts to a frontier community in Minnesota with the intention of starting a machine shop, but when the community members learned about his background, they persuaded him to become minister for the small town. George’s father, who was born in Minnesota, moved as a young man back east and worked for a number of years as YMCA secretary in
Haverhill (of which Bradford was a suburb), before becoming an independent inventor. Among his inventions was a device for winding induction coils used in igniters for motorboat engines of those times, and a device to bind grain in a harvester (the patent for this device was bought from him by Cyrus McCormick, the inventor of the harvester).

When George was four years old, his parents moved to Brookline, to a house built there by his great-grandfather. Now a suburb of Boston, Brookline was at that time a separate town out in the country, and was one of the most affluent in the area. George spent his childhood there, in a house whose yard soon became the gathering place and center of activity for a dozen or so friends and neighborhood children. They played games, scrub baseball, touchball, and occasionally tennis on the adjacent courts. George's childhood was that of an American boy born into a middle-class family at the beginning of the century. He had a friend who collected beetles and later became a distinguished entomologist and a curator at the Agassiz Museum, but other than that George was not exposed to any influences that would steer him toward a research career.

The school he attended provided a high standard of education, and George did well, excelling especially in mathematics. He also had a vague interest in astronomy and physics, but had no clear idea about what he wanted to do. Largely because of his good grades, it was decided that he would go to graduate school. Darmouth College was chosen for two reasons. First, it was near Vermont, where his parents had purchased a run-down farmhouse and 70 acres of land at South Woodstock, and where George would spend his summer vacations and develop a deep love of the outdoors. The second reason was that he disliked languages in general and loathed Latin in particular, and one could get into Darmouth without any Latin.

At Darmouth and Harvard

At Darmouth College, which he entered in 1922, Snell came under the first decisive influence of his career – the genetics course taught by Professor John Gerauld. Genetics suited Snell's inclinations well. "I just can't imagine anything that better fitted my particular intellectual qualifications than genetics," he commented later. "I liked the mathematical angle of things. I am not a technician and you could work in genetics without doing lab work that would involve elaborate techniques, and it had a mathematical plan. This was exactly the right thing for me" (Snell 1979). Also, at this time genetics was undergoing a period of intense excitement generated by the discoveries in T. H. Morgan's "fly room" at Columbia University. Snell's enthusiasm for genetics did not escape Gerauld's attention and the Professor took a personal interest in this gifted student. Snell would always remember Professor Gerauld with affection and gratitude.

At Professor Gerauld's urging the Snell family agreed to send George, after his graduation in 1926, to Harvard Medical School. Gerauld also advised Snell to choose William E. Castle, whom Gerauld knew personally, as his Ph. D. mentor. Castle, together with the Frenchman L. Cuenot, is the founder of mammalian genetics (see Snell and Reed 1993). At the time when Morgan and his associates were laying the foundations of gene identification and mapping by using the fruit fly as an experimental model, Castle decided to apply Mendelism to rabbits, guinea pigs, rats, and mice as the first step toward the development of human genetics. The story is told that Castle was the first to use the fruit fly as an experimental object in genetic studies and that breeding experiments were set up toward this end. When the study was well underway, however, his laboratory was broken into and all the flies freed from the jars. Disheartened by this setback, Castle is said to have turned to animals, which cannot so easily vanish. It was from Castle that Morgan got the idea of using Drosophila for genetic experiments.

Castle carried out his early work on mammalian genetics in the basement of Harvard's Museum of Comparative Zoology in Cambridge. In 1908, however, he became head of the mammalian section at the Bussey Institution in Applied Biology at Harvard University, and moved his animals to this new location. The Bussey Institution, an ornate neogothic, greystone structure, was built in 1871 as a private mansion in Jamaica Plains (Forest Hills) about ten miles from Cambridge (see Morse 1985). Benjamin Bussey later donated to the University 394 acres of prime land surrounding the mansion. Most of the donated land was turned into Arnold Arboretum and the mansion became first the undergraduate school of husbandry and gardening and then, from 1908, it was chosen to house the botanic section headed by Edward M. East, and the mammalian genetics section. Castle's rabbits and guinea pigs were housed in the basement, rats on the ground floor, and mice in the attached greenhouse. Another house on the Bussey grounds served as a dormitory for students. After two years of course work on the main campus at Cambridge, the students who chose to work in botany or mammalian genetics moved to the Bussey Institution and spent the rest of their studies there, taking only one or two additional courses at Cambridge. Harvard University had no Masters degree program and no thesis examination; their course work completed, students were free to focus entirely on their research work toward attaining a Ph. D. There were normally seven to ten graduate students at any time at the Bussey Institution. The high calibre of the academic program is obvious from the list of 21 students who received their doctoral degrees under Professor Castle: John A. Detlefson (1912), E. Carleton MacDowell (1912), Clarence C. Little (1914), Sewal Wright (1915), Leslie C. Dunn (1920), Tage U. H. Ellinger (1925), Horace W. Feldman (1925), William H. Gates (1926), Clyde E. Keeler (1926), Laurence H. Snyder (1926), Gregory Pincus (1927), P. W. Gregory (1928), Robert C. Robb (1928), E. A. Livesay (1928), George D. Snell (1930), Paul B. Sawin (1931), Nelson F. Waters (1931), Frank H. Clark (1934), Sheldon C. Reed (1935), Summer A. Burhoe (1938), and Lloyd W. Law (1937). The Bussey Institution was closed in 1938.