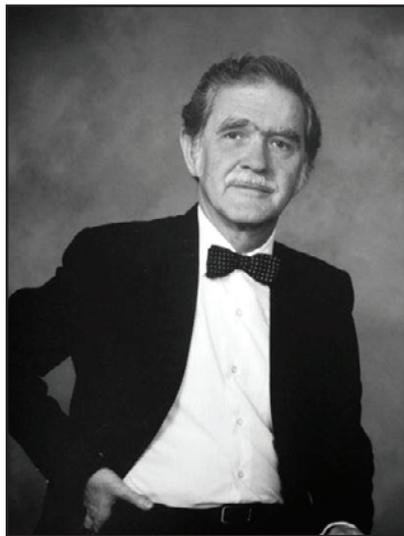


In Memoriam: Montrose J. Moses



Montrose J. Moses

Montrose J. Moses, the eighth President of the American Society for Cell Biology (ASCB; 1968–1969), passed away on September 26, 2011, at age 92. He was born in New York City on June 26, 1919; married Constance Roy in 1949; and had two daughters, Mollie and Katherine (Kitty). At the time of his death, he and his second wife, Marlene Molina Johnson, were estranged.

Monte was intrigued by biology since age nine when he first looked through a microscope. He attended Bates College (BS, 1941) and Columbia University (MA, 1942; PhD, 1949). Monte's education was interrupted by Army service in World War II (July 1942–March 1946); his final rank was Captain. He was in charge of radio-telephone operations in the Southwest Pacific.

His interest in electronics since high school in Winsted, CT, and Army experience were valuable as a graduate student when he helped to build a microspectrophotometer to quantify nucleic acids and proteins inside cell organelles.¹ This furthered the development of this device after its inception two years earlier by Pollister and Ris.

Monte worked at Brookhaven National Laboratory from 1948 until 1957, quantifying DNA in single cells from normal and irradiated tissues. At this time, the debate of whether the genetic material was DNA or protein generated mounting evidence that it must be DNA. Monte wondered “how the DNA of specific genes was coded and kept in linear sequences during the events of meiotic prophase assembly.”² This question led to his discovery of the synaptonemal complex (SC).

Nothing in the Nucleus

While still at Brookhaven, Monte worked at the Rockefeller Institute in Keith Porter's lab. In October 1955, Keith Porter appeared with a Petri dish of extracellular matrix grids of crayfish testis and invited Monte to view the specimens with him using their new Phillips EM 100. Porter quickly scanned the grids, looking for microtubules with no success, but Monte was intrigued by the possible chromosome masses

that were speeding by and blurted out “Keith! Please could you rerun that bit? I saw some intriguing details!”² Porter was rushing to an appointment, so he handed the Petri dish with grids to Monte and said “There's nothing worth looking at in the nucleus. I've tried, and there's nothing there I can work with.”³ He continued: “Why don't you take these grids and see what you can find. Whatever it is, it is all yours.”² Several weeks and many grids later, the discovery of an axial structure joining synapsed chromosomes was a reality. Monte published a short note⁴ followed by a more definitive paper.⁵ Monte's initial observations were soon confirmed and extended by Don Fawcett,⁶ who subsequently became the first President of ASCB.

The SC, a proteinaceous structure that is aligned in parallel between the two homologous chromosomes in prophase of meiosis I, assists in homologous chromosome recognition, synapsis, and recombination.⁷ It is a prerequisite for crossing-over. Monte spent his career studying the SC and opened the field to active investigations by many on its functions, protein constituents, and molecular mechanisms. In 2006, the Gordon Research Conference on Meiosis celebrated the 50th anniversary of the discovery of the SC with an introductory talk by Monte³ that captivated the audience.

Colleague, Mentor, Co-founder, and Clown

Monte joined the Department of Anatomy (now Cell Biology) at Duke University School of Medicine in 1959 as an Associate Professor, becoming Professor (1966), the R. J. Reynolds Professor (1981), and Vice-Chairman (1987–1988). Monte's former graduate student, Mike Dresser, stated: “Endowed with a sharp, disciplined intellect and with patience when he recognized effort, Monte was an unsurpassed master of the Socratic method and handled stubborn graduate students, demanding colleagues, and testy competitors with an awe-inspiring grace.” Monte promoted the careers of women, collaborating with Sheila Counce, who had developed a whole mount spreading method for the SC, and Adelaide Carpenter, who had discovered SC-associated recombination nodules. Adelaide recalls that Monte was a true

gentleman, kind, thoughtful, and caring and that his science was always sound. She recalled though that his enthusiasm got the better of him when he tried to cram 500 slides into a 30-minute talk!

Monte was a member of the organizing group led by Keith Porter that met in New York City in 1960 and constituted the Provisional Council of ASCB. On March 13, 1961, he was appointed to the Provisional Executive Committee as Associate Secretary. Monte served as ASCB Secretary from 1962–1967 and was elected as the eighth ASCB President (1968–1969). In 1969, Monte established the ASCB career placement service, which he ran for many years with his assistant Marlene Johnson. Monte noted that many job openings were withdrawn due to a shortage of federal funds. As ASCB President, Monte brought the idea to Council that ASCB should define the importance of cell biology, why it should take federal funds for research, and its importance to the public. He argued that this would dispel the notion that research is a luxury that we can no longer afford. These arguments still apply today! As a result of the ensuing lively discussion, Council set up a Committee on Public Policy. Also under Monte's term as President, a move was initiated to change the bylaws to allow student membership in ASCB.

Monte was an eternal optimist who always saw the good in the people around him. According to his daughter Mollie, he was a storyteller, scientist, musician, sailor, carpenter, juggler, magician, and photographer. He delighted ASCB attendees at the ASCB Annual Meeting in Houston in 1966 by singing songs during the social event held at Rice University. Monte had an enduring interest in theater—his mother was an actress and his father was

a theater and book critic. As a boy, he was captivated by a parade on Broadway. He joined a circus and later quit, but his interest in theater continued. In Durham in 1978, Monte and his wife Connie helped save the Carolina Theatre from demolition and to reopen it as an art movie house. In the early days, Monte sometimes did the theater's maintenance and repair himself, once spending Christmas Eve fixing the heating system in time for the next day's showings. Monte's genuine warmth, quick wit, and joy in entertaining others made him a successful circus clown in his younger years and colored his academic pursuits with a rare charm.

The family requests that, in lieu of flowers, contributions be made to the Connie and Monte Moses Endowment for Arts in Durham at the Triangle Community Foundation (www.trianglecf.org), or to Duke Hospice (<http://dhch.duhs.duke.edu/hospice>). ■

—Susan A. Gerbi with grateful acknowledgment of contributions from Adelaide Carpenter, Mike Dresser, Sharyn Endow, Joe Gall, Kitty Moses, Mollie Moses O'Dell, Bruce Nicklas, and Pat Pukkila

References

- ¹ Pollister AW, Moses MJ (1949). *J Gen Physiol* 32:567–577.
- ² Moses MJ (2006). *Chromosoma* 115: 152–154.
- ³ Moses MJ (2006). Powerpoint talk, Gordon Research Conference on Meiosis (June 11–16, 2006).
- ⁴ Moses MJ (1956). *J Biophys Biochem Cytol (J Cell Biol)* 2: 215–218.
- ⁵ Moses MJ (1958). *J Biophys Biochem Cytol (J Cell Biol)* 4: 633–638.
- ⁶ Fawcett DW (1956). *J Biophys Biochem Cytol (J Cell Biol)* 2: 403–406.
- ⁷ Moses MJ (1968). *Ann Rev Genet* 2: 363–412.

Got Questions?

Labby has answers. ASCB's popular columnist will select career-related questions for publication and thoughtful response in the *ASCB Newsletter*. Confidentiality guaranteed if requested. Write us at labby@ascb.org. ■