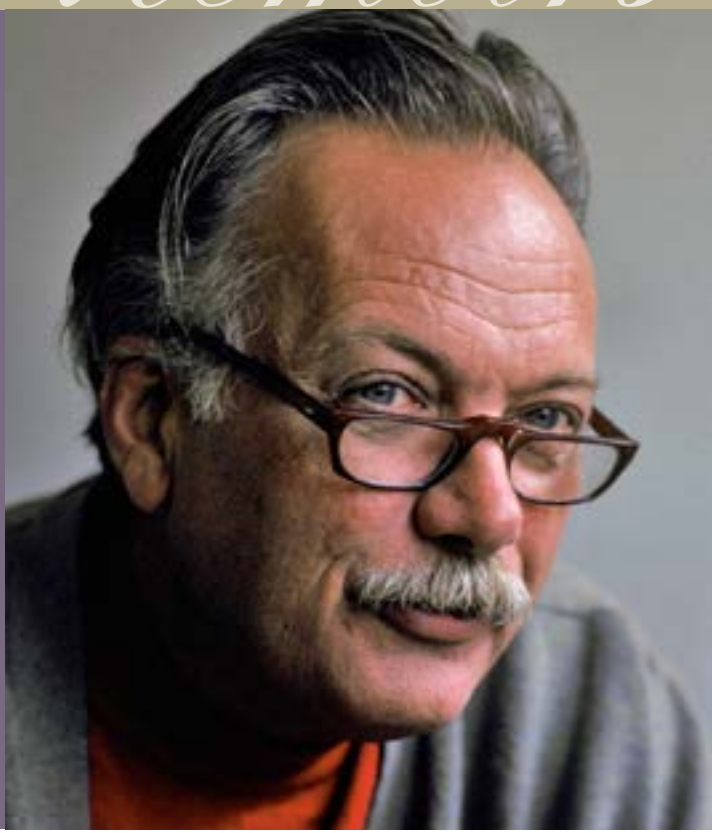
# F. Clark Howell

1925–2007

BIOGRAPHICAL *Memoirs*

*A Biographical Memoir by*
*Richard G. Klein*



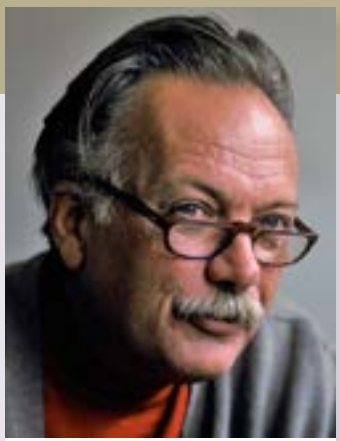


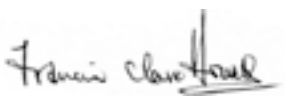
NATIONAL ACADEMY OF SCIENCES

# FRANCIS CLARK **HOWELL**

*November 25, 1925—March 10, 2007*

Elected to the NAS, 1972





*By Richard G. Klein*

Francis Clark Howell, known as Clark to his many colleagues and friends, became the leading authority on the human fossil record shortly after he received a PhD in 1952, and he remained so until his death in 2007.

Clark's genius was two-fold. First, and almost uniquely in the 1950s, he recognized that a compelling reconstruction of human evolution required a detailed knowledge not just of the fossils, but also of their paleoenvironmental, geochronologic, and archaeological context. At the time, the composite of these fields had no name, and Clark was probably the first to popularize it as "paleoanthropology." His second and equally enviable talent was his ability to scrutinize the human evolutionary record for gaps that fresh fieldwork could resolve and then to seek sites that could fill the gaps.

Clark led by example, and he repeatedly integrated the growing sample of human fossils with fresh information on their context. In publications throughout his entire career, he covered every aspect of human evolution, from the australopiths who evolved in Africa between roughly 4.5 and 2 million years ago (1-3), through the various forms of early Homo who existed between 2 million and roughly 300,000 years ago (4, 5), to the Neanderthals who inhabited western Eurasia until they were replaced by fully modern humans between 45,000 and 40,000 years ago (6, 7).

He also repeatedly produced broad overviews of human evolution (8-10). His first publication (11), while he was still a graduate student in 1951, synthesized what was known of the Neanderthals and it remains worth reading, for it anticipated much of what we think today, even if it was based on much slimmer evidence. His subsequent publications were equally perspicacious, and anyone seriously interested in human evolution can still profit from them. In 1965, with Maitland Edey and the editors of Time-Life (12), he co-authored a book entitled simply *Early Man*. Revised in 1970, it remains unparalleled for its

lucid, comprehensive coverage. I had the pleasure of watching the first edition take shape as his graduate student, and I often turn to a copy I've digitized for its wonderful illustrations and its pithy fossil and artifact descriptions.

Clark authored or co-authored more than two hundred publications, and the references include examples that especially illustrate his broad interests and his ability to integrate fossils and context. The accompanying timeline (adapted and extended from [13, p. x]) provides a subset of his writings (titles in italics), interspersed with some significant milestones in his career.

## Clark's formative years (1925–1955)

Clark was born on November 27, 1925, in Kansas City, Missouri, and spent his early years in rural Kansas, where he developed a strong interest in natural history. He served in the U.S. Navy between 1944 and 1946, and upon his discharge, he worked briefly at the American Museum of Natural History with the great German expatriate paleo anthropologist Franz Weidenreich, with whom he had corresponded a few years before. His work with Weidenreich cemented his commitment to a career in paleoanthropology, which he began in 1947 at the University of Chicago, with support from the GI Bill of Rights (14). He received three anthropology degrees from Chicago: a PhB in 1949, an MA in 1951, and the PhD in 1953. His principal mentor during these years was the biological anthropologist Sherwood L. Washburn, who advocated the kind of multidisciplinary approach to human evolution that Clark expanded and advanced, but Clark also worked with the archaeologist Robert J. Braidwood and the paleontologist Everett C. Olson. He thus gained a firm footing in three of the principal fields—human skeletal anatomy, archaeology, and mammalian paleontology—that he believed were essential for a meaningful reconstruction of human evolution.

Between 1953 and 1955, Clark was an instructor in anatomy at Washington University in St. Louis, where he met and married Betty Tomsen, who worked as a nurse. Early on, she was integral to his fieldwork, and they later raised two children, Brian David and Jennifer Clare. It was also from St. Louis that Clark began his extensive travels, first to Europe and then to Africa, where he often attended international conferences and established lifelong relationships with other devoted paleoanthropologists. His trips frequently afforded him the opportunity to visit important sites and museums and to become acquainted firsthand with the artifacts and bones they had provided.

The department was filled with anthropological luminaries, and when Clark chaired it from 1966 to 1969, he told me he spent much of his time doing whatever he could to keep them from accepting offers elsewhere.

## The Chicago years (1955–1970)

In the fall of 1955, Clark rejoined the Department of Anthropology at Chicago as an assistant professor. He was extraordinarily productive, and only seven years later, in 1962, the department promoted him to full professor. The department was filled with anthropological luminaries, and when Clark chaired it from 1966 to 1969, he told me he spent much of his time doing whatever he could to keep them from accepting offers elsewhere.

From Chicago, Clark organized his first field work, an excavation in 1957 and 1958 at the Isimila Acheulean site in south-central Tanzania (then Tanganyika). The site preserved abundant hand axes, other artifacts, and animal bones in sediments that formed in and near an ancient stream (15), and it is one of a handful of sites to illuminate the ecology of the later Acheulean hand axe makers who occupied Africa between roughly 700,000 and 300,000 years ago (16). Clark believed that fieldwork should not only target important sites, but that it should also provide experience for graduate students, and his work at Isimila involved his first two graduate students, Maxine R. Kleindienst and Glen H. Cole. Under Clark's supervision, both used Isimila as the jumping off point for PhD dissertations on aspects of the east African Paleolithic. Kleindienst finished in 1959 and Cole in 1961. At the same time, Clark encouraged his third PhD student, Sally Schanfield, to undertake a library dissertation on the Paleolithic of the Sahara. Schanfield finished in 1962 and later became well known as Sally Binford, intellectual partner and wife of the influential archaeologist Lewis R. Binford.

At the time that Clark undertook his fieldwork at Isimila, he was one of only a handful of Americans researching African paleoanthropology, and he worked hard to encourage others to become involved. Early on, his talent and dedication deeply impressed the directors of the Wenner-Gren Foundation for Anthropological Research, and in the 1960s and 1970s, with financial support from the foundation, Clark organized or co-organized timely week-long conferences that brought paleoanthropologists and related specialists to the foundation's Burg Wartenstein conference center in Austria. The proceedings were published in volumes that remain valuable today (17–19). The foundation also provided seed funds to help younger investigators become involved in paleoanthropology, and in 1969, I received a Wenner-Gren grant for research in Africa that I have continued to the present day. Clark was not involved in my application, but

it might not have been successful if he had not previously convinced the foundation that African paleoanthropology deserved strong support.

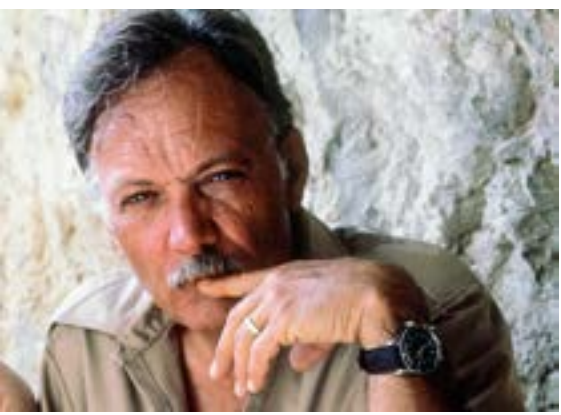
Clark and Betty Howell at Isimila, 1957
(Photo courtesy The Leakey Foundation.)

Clark retained a strong interest in Acheulean hand axe makers after his work at Isimila, and he was particularly hoping to locate a site that would provide human remains alongside artifacts and animal bones. His deep knowledge of the literature pointed him to the site of Torralba, in central Spain, where railway trenching in 1888 had exposed large numbers of well-preserved bones from elephants and other large mammals. In 1909, the Marqués de Cerralbo, a Spanish nobleman, found that the bones were associated with hand axes and other artifacts, and many specialists came to regard the site as an Acheulean hunting station. However, Cerralbo's excavation was rudimentary by later standards, and no one examined the site after Cerralbo's death in 1922. In 1960, Clark relocated it, and in 1961, he further reestablished the position of Ambrona, a broadly similar locality about 3 km from Torralba. With substantial help first from the French archaeologist Pierre Biberson and later from his fourth graduate student, Leslie G. Freeman, Clark supervised excavations at Torralba between 1961 and 1963 and at Ambrona in 1962 and 1963 (20, pp. 111–140).

Freeman's archaeological skills and intellect deeply impressed Clark, and when Clark wanted to add a Paleolithic archaeologist to the Chicago faculty, Freeman was his first choice. Freeman came in 1965, one year after finishing his PhD, and he remained until his retirement in 2000. In 1966, to further expand multidisciplinary training at Chicago, Clark recruited the physical geographer and environmental archaeologist Karl W. Butzer, who had worked with Clark at Torralba and Ambrona and who collaborated with him again later in the lower Omo River Valley, as I will discuss below. Butzer left Chicago in 1984 to assume his current position as Dickson Centennial Professor of Liberal Arts in the Department of Geography and the Environment at the University of Texas-Austin. In 2007, he and I coauthored a highly personal remembrance of Clark grounded in a mutual relationship that spanned more than four decades (21).

I began graduate work at the University of Chicago just after the 1962 Ambrona season, and I was flattered and excited when Clark asked me to participate in the second season, in 1963. Torralba and Ambrona provided numerous artifacts and far more animal bones than Isimila, but, like Isimila, they failed to produce any human remains. Clark was disappointed, but at about the time the excavations concluded in Spain, Louis Leakey and the French paleontologist Camille Arambourg invited him to join an expedition to explore the Plio-Pleistocene deposits in the lower Omo River basin, in Ethiopia. Clark had visited the region in 1959 and was deeply impressed by its promise. He accepted, and he helped organize what became known as the International Omo Research Expedition, which worked each year in the Omo basin from 1966 to 1973.

Clark's unique multidisciplinary expertise and his ability to manage a large team of paleontologists, geologists, and archaeologists made him an ideal project leader. The research in the Omo basin produced informative human fossils from well-dated contexts, but its most important contribution was probably to establish the detailed course of faunal change in eastern Africa between roughly 3.6 and 1 million years ago (22). Anchored by numerous radiometric dates, the Omo biostratigraphy remains a standard to the present, and it's critical for evaluating the antiquity of other important east African paleoanthropological sites. If Clark had done nothing else in his career, his leadership in the Omo would have established him as one of the premier paleoanthropologists of the twentieth century.



Clark Howell at Arago Cave, France, 1983. (Photo copyright: David Brill.)

In 1964 and 1965, the interim between his field research at Torralba/Ambrona and in the lower Omo, Clark became a visiting professor at the University of California, Berkeley (UC Berkeley), to teach the courses of Theodore McCown, who was going on leave. Clark was a fitting replacement in every imaginable sense, including his own long-standing interest in the famous human fossils that McCown had helped recover from Skhul and Tabun caves in Israel (then Palestine) (23) and that McCown later described with Sir Arthur Keith. The fossils are presently divided between Neanderthals and near-modern Africans who expanded their range

to the southwestern margin of Africa during the Last Interglaciation between roughly 120,000 and 90,000 years ago. Counter to what intuition might suggest, it appears that the Neanderthals replaced the more modern-looking people when climate turned cooler after 80,000 years ago. The presently accepted scenario differs from what Clark initially suggested, but when Clark learned of the fresh evidence, he readily updated his ideas.

I was a second-year graduate student at Chicago when Clark accepted the visiting appointment at Berkeley, but I was delighted when he asked me to accompany him to assist with the undergraduate teaching. Washburn had moved from Chicago to Berkeley in 1959, and in 1961, Berkeley attracted Desmond Clark, the most productive and influential archaeologist ever to work in Africa. Clark Howell's visit anticipated the later development at Berkeley of a human origins research group that has never been surpassed. Already by 1964, there were numerous outstanding graduate students, including the pioneer molecular anthropologist Vincent Sarich, who used molecular differences to argue that whatever the then available fossils might suggest, the human and chimpanzee lineages were unlikely to have split more than between 5 and 6 million years ago.

The presence of two Clarks was sometimes confusing, and when Desmond would answer the phone simply as "Clark," Clark (Howell) would respond "Clark here, too." Washburn and the two Clarks ran an evening graduate seminar that met at their homes once a week, and the discussion was always stimulating and informative. I was a little further along than most of the Berkeley students, and I was asked to give the initial presentation. I don't remember the details, but Washburn disagreed with whatever I said, and when I finished, he asked who had taught me physical anthropology. Clark sat quietly, and to my relief, the conversation quickly changed direction. I don't know if Clark spoke to Washburn later, but the issue never arose again, and I benefited immeasurably from my year with the two Clarks, Washburn, and their students in Berkeley.

Paleoanthropology is inherently international, and Clark acknowledged this early on in his frequent travels and in his unparalleled knowledge of the paleoanthropological literature in multiple European languages, particularly French and German. However, one crucial language he did not read was Russian, and when he discovered that I did, he decided that I should do a dissertation on some aspect of the Russian Paleolithic period and the associated human fossil record. My own preference was for a dissertation on the artifacts or bones from Torralba and Ambrona, but Clark prevailed, and by the fall of 1964, I was deeply immersed in the Russian paleoanthropological literature. The time was not yet ripe for a Westerner to visit Russian (Soviet) Paleolithic sites or to participate

in excavations, but Clark was sure he could arrange for me to visit museums where I could examine Russian Paleolithic artifacts. He was right, and my dissertation, finished in 1966, described and interpreted the artifacts that the Neanderthals made in Russia, based on what I had read and what I was able to observe firsthand in Moscow and St. Petersburg (then Leningrad).

Clark Howell (left) and Camille Arambourg in the Lower Omo Valley, Ethiopia, 1967. (Photo credit: Bob Campbell.)

I used my year in Berkeley to finish essential library work before traveling to Russia. By fortunate coincidence, this was also the year when Clark was preparing his *Early Man* book with Time-Life, and I was privileged to help with the background research. *Early Man* was the twenty-second of twenty five books in the Time-Life Nature series, but it quickly became the best seller, and it's impossible now to exaggerate its importance, not only because it made paleoanthropology accessible to a broad lay audience, but also because it helped attract promising new people to the field. Among its avid readers was a southern California high school student named Tim White, who was convinced by *Early Man* to pursue a career in paleoanthropology. The Berkeley Anthropology Department rejected White's application for graduate study, but in 1977, immediately after he received his PhD from the University of Michigan, they invited him to Berkeley as visiting lecturer to fill in for Clark while he was away on sabbatical. White quickly established close working relationships with both the Clarks, and following their example, he became a dedicated fieldworker who has led numerous productive expeditions to the Middle Awash basin of Ethiopia. He is now a professor of integrative biology at Berkeley.

In the spring of 1965, Clark and Desmond Clark arranged for the leading French prehistorians François and Denise Bordes to visit Berkeley from Bordeaux. François was an expert flint-knapper, and the main purpose of his visit was to make an instructional film on how to turn raw stone into finished artifacts. The Clarks made a point of involving me in the project, and it was François more than anyone who directly arranged for my study of artifacts in Russian museums. He had excavated large assemblages of similar

artifacts in France, and he suggested I study them in Bordeaux before I went to Russia. I accepted gratefully, and my stay in Bordeaux provided exactly the experience I needed for my work in Russia. My time in Bordeaux also led me to realize how much my apprenticeship to Clark afforded opportunities that I would probably have gotten nowhere else. Clark expected nothing in return except hard work and an informative dissertation.

## The Berkeley years (1970–2007)

Theodore McCown died in 1969, and Clark was invited back to UC Berkeley on a permanent basis. He arrived in 1970 and established the Laboratory for Human Evolutionary Studies in the basement of Kroeber Hall. The laboratory was actually a moderate-sized office complex that housed Clark and a variable, but usually sizable, number of graduate students and visitors. Unlike his students in Chicago, who had been mostly archaeologically inclined, his students in Berkeley focused more on fossil morphology. Clark was equally at home supervising both kinds of students.

Clark Howell at Ambrona, Spain, 1983. (Photo copyright David Brill.)

During his first few years in Berkeley, Clark was still deeply engaged in the International Omo Research Expedition, but when a change in the Ethiopian government brought the Omo work to a close in 1974, he devoted himself to organizing and synthesizing the multifaceted geological, paleontological, and archaeological results (24). Then, from 1981 until 1984, he decided to resume excavations at Ambrona, Spain (25). He was joined again by Leslie Freeman. I also participated, but by this time, I had come to specialize in the identification and analysis of animal bones from ancient archaeological sites, and my task now was to describe all the bones that Clark and Freeman had excavated. These were housed in the National Archaeological Museum in Madrid, where the authorities at first seemed reluctant to let me spend more than few hours a week. I told Clark of the difficulty, and he somehow arranged for me to work ten to twelve hours a day, six days a week. When I thanked him, he said he believed that his role was not only to do research, but also to do whatever he could to facilitate the related research of colleagues.

In the late 1980s, Clark began fieldwork in Turkey with his former University of Chicago student, Güven Arsebük. In 1988 and 1989, they co-directed excavations of the early Paleolithic deposits in Yarimburgaz Cave, and Clark subsequently organized an international team to analyze the results (26).

Clark retired from teaching in 1991 and assumed the title Professor Emeritus. In 1992, two of his former Berkeley students, Robert Corruccini and Russell Ciochon, organized a symposium at the meetings of American Anthropological Association where they, other former students, and many of Clark's long-time colleagues presented on the diverse paleoanthropological topics to which Clark had personally contributed. Corruccini and Ciochon published the symposium in 1994 under the title, Integrative Paths to the Past: Paleoanthropological Advances in Honor of F. Clark Howell (13). They chose the word "integrative" to celebrate Clark's long-standing and successful multidisciplinary approach to human evolution.

**Clark Howell (left) and Leslie Freeman at the American Anthropological Association Meeting, Philadelphia, 1992.** (Photo credit: The Leakey Foundation.)

Clark did not retire from research, and in the mid 1990s, with Tim White, Erksin Güleç from Ankara University, and others, Clark recovered stone artifacts and tool-marked bones at the Dursunlu lignite mine that are the oldest well-dated evidence for human presence in Turkey (27). In the 1990s he also he helped analyze fossils that Tim White, Desmond Clark, their colleagues, and students had recovered in the Middle Awash Valley, central Ethiopia (28, 29). He had long been interested in carnivore evolution, and his Middle Awash work focused particularly on the description and interpretation of carnivore remains.

In 2003, Clark and Tim White assembled the Revealing Hominid Origins Initiative (RHOI), the largest paleoanthropology project ever funded by the National Science Foundation. It was an umbrella program that supported the collection, curation, and study of original fossil material dating mainly to the 5 to 7 million year interval when people and chimpanzees last shared a common ancestor. By the time the RHOI concluded in 2010, it had underwritten thirty six productive paleontological projects

involving more than fifty scientists in fifteen countries, and it stimulated three hundred ninety-six RHOI-acknowledged publications (http://rhoi.berkeley.edu/RHOI/RHOI_publications_main.php).

In 1995, Clark's Laboratory of Human Evolution was renamed the Human Evolution Research Center (HERC) and relocated to the Valley Life Sciences Building on the Berkeley campus (30). From 1995 until Clark was diagnosed with metastatic lung cancer in late 2006, whenever he was not traveling, he could be found daily in his office at the center. He died at home on March 17, 2007, but the center, his extensive library, and the comprehensive fossil cast collection he had amassed persist to remind all visitors of his profound contribution to paleoanthropology.

Clark Howell working on fossil carnivores, Addis Ababa, 1992. (Photo credit: Tim D. White.)

## Honors and the Leakey Foundation

During his long career, Clark won many honors, including election to the National Academy of Sciences in 1972, the American Academy or Arts and Sciences in 1974, the American Philosophical Society in 1975, and the French Academy of Sciences (Foreign Associate) in 1989. In 1990, the California Academy of Sciences, where he had long been an active fellow and finally served as president, honored him with its highest honor, the Fellows Medal; in 1992, his alma mater, the University of Chicago, awarded him an honorary doctorate; and in 1998, the American Association of Physical Anthropologists presented him with the Charles Darwin Lifetime Achievement Award for Physical Anthropology.

Clark rarely spoke about these or any of his many other honors and achievements, but he was explicitly proud of his role as a founder and long-time scientific chair of the L. S. B. Leakey Foundation. Clark met Louis Leakey in Africa in 1954, and by happenstance, Clark was in Nairobi in 1959 when Mary Leakey found the first significant human (hominin) fossil at Olduvai Gorge, a partial skull now usually assigned to the australopith species Paranthropus boisei. In the decade following this discovery, Louis frequently lectured in the United States to raise money for the research that he, Mary, and their colleagues were conducting in eastern Africa. Duringhis lecture tours, he often stayed with the Howells in their home just outside Chicago, and Clark became a scien-

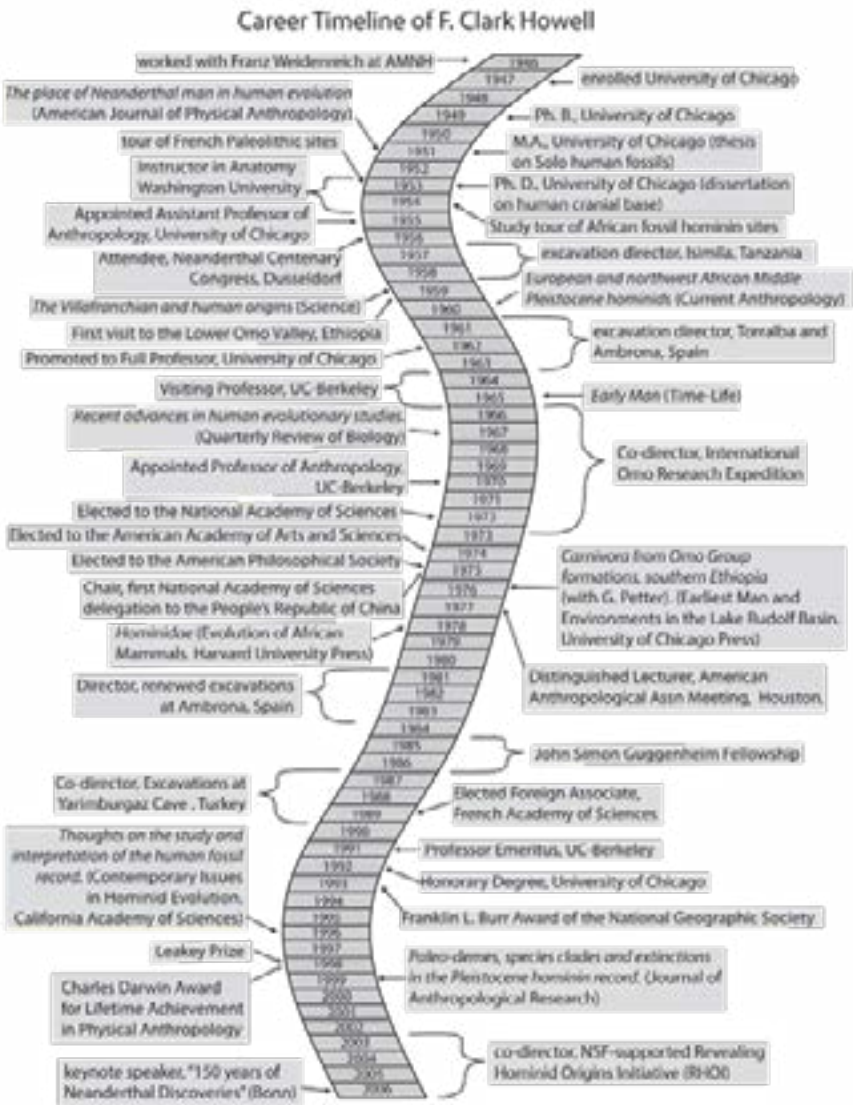
Clark Howell (left), Brian Howell, and Louis Leakey in Homewood, Illinois, 1964.
(Photo credit: Betty Howell.)

tific advisor to a group of enthusiastic Californians who launched the L. S. B. Leakey Foundation in 1968 to underwrite Louis' research interests.

Initially, the foundation had no endowment, and its grants depended entirely on the willingness and ability of the trustees to fund research requests ad hoc. Then, in the 1980s a prominent trustee, who was deeply impressed by Clark's erudition and professional standing, announced a challenge grant that produced a permanent endowment. For many years thereafter, with his Harvard colleague Irven DeVore, Clark co-chaired a panel, now called the Scientific Executive Committee, that evaluated grant proposals to reward the most deserving. The Leakey Foundation quickly became a major funding source for doctoral dissertation research in paleoanthropology and related fields and for postdoctoral pilot projects that could seek expanded funding elsewhere if they were successful. The foundation continues to function this way, and there are few younger paleoanthropologists who have not benefited from a Leakey Foundation grant. The recip-

ients will all know Clark Howell's intellectual contribution to paleoanthropology, but few may realize his key role in founding and sustaining the foundation itself.

## TIMELINE


Career Timeline of F. Clark Howell
worked with Franz Weidenreich at AMNH
enrolled University of Chicago
The place of Neanderthal man in human evolution (American Journal of Physical Anthropology)
Ph. B., University of Chicago
tour of French Paleolithic sites
M.A., University of Chicago (thesis on Solo human fossils)
Instructor in Anatomy Washington University
Ph. D., University of Chicago (dissertation on human cranial base)
Appointed Assistant Professor of Anthropology, University of Chicago
Study tour of African fossil hominin sites
Attendee, Neanderthal Centenary Congress, Dusseldorf
excavation director, Isimila, Tanzania
European and northwest African Middle Pleistocene hominids (Current Anthropology)
The Villafranchian and human origins (Science)
First visit to the Lower Omo Valley, Ethiopia
excavation director, Torralba and Ambrona, Spain
Promoted to Full Professor, University of Chicago
Visiting Professor, UC-Berkeley
Early Man (Time-Life)
Recent advances in human evolutionary studies, (Quarterly Review of Biology)
Co-director, International Omo Research Expedition
Appointed Professor of Anthropology, UC-Berkeley
Elected to the National Academy of Sciences
Elected to the American Academy of Arts and Sciences
Elected to the American Philosophical Society
Carnivora from Omo Group formations, southern Ethiopia (with G. Petter). (Earliest Man and Environments in the Lake Rudolf Basin. University of Chicago Press)
Chair, first National Academy of Sciences delegation to the People's Republic of China
Hominidae (Evolution of African Mammals. Harvard University Press)
Distinguished Lecturer, American Anthropological Assn Meeting, Houston
Director, renewed excavations at Ambrona, Spain
John Simon Guggenheim Fellowship
Co-director, Excavations at Yarimburgaz Cave , Turkey
Elected Foreign Associate, French Academy of Sciences
Thoughts on the study and interpretation of the human fossil record. (Contemporary Issues in Hominid Evolution. California Academy of Sciences)
Professor Emeritus, UC-Berkeley
Honorary Degree, University of Chicago
Franklin L. Burr Award of the National Geographic Society
Leakey Prize
Paleo-climes, species clades and extinctions in the Pleistocene hominin record. (Journal of Anthropological Research)
Charles Darwin Award for Lifetime Achievement in Physical Anthropology
co-director, NSF-supported Revealing Hominid Origins Initiative (RHOI)
keynote speaker, "150 years of Neanderthal Discoveries" (Bonn)

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