

I. Editorial

I would like to hear from the readership about the possibility of adding an additional section to each issue of the BHA concerning the existence and content of [redacted] primary archival collections relating to the history of archaeology. This section would contain contributions from the readership/contributors in regard to primary archival materials recently housed in repositories both public and private. With the current interest by both public and private funding agencies in preserving the anthropological record, it seems advisable that the BHA should address the creation and announce the location of new primary archival collections as they are formed. Through this new section in each issue, the BHA would add another usable source of information that its readership could benefit from.

I look forward to any and all communications on this idea.

Douglas R. Givens, Editor
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II. Discourse on the History of Archaeology

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Necrology: Hugh Carson Cutler

by

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Hugh Carson Cutler, former curator of Economic Botany at the Missouri Botanical Gardens, was one of the first generation paleoethnobotanists in this country, a pioneer in the field, and instrumental in getting American archaeologists to begin to employ flotation techniques for recovery of botanical remains. Cutler, the son of Manuel and Mary Cutler, was born September 8, 1912 in Milwaukee, Wisconsin, and died September 22, 1998 in Topeka, Kansas. It was during his B.A. work and M.A. research at the University of Wisconsin that he learned several of the techniques employed by palynologists, such as flotation and washing, use of various size mesh screens, deflocculation, and use of various frothing agents, some of which techniques he employed on his 1936 M.A. thesis (Cutler 1936). By 1937, he had traveled to the Mexican Hat area on the San Juan River of Utah, doing some boating and also beginning plant collections. In 1938 he spent some time in the Big Bend area of Texas, where he walked the landscape with a burro carrying his plant presses, and collected plant specimens which he later sold for ten cents a sheet. It seems to be during this time he first became interested in the botany of useful plants. Cutler completed his Ph.D. at Washington University-St. Louis in 1939, with his dissertation (Monograph of the North American species of the genus *Ephedra*) detailing species from which ephedrine is derived (used for treatment of asthma, hay fever, etc.) in the US Southwest and Northern Mexico. Following his degree, he intensively collected plants in the San Juan area from May to October of 1939 (Woodbury 1958:16).

In 1940, shortly after he finished his Ph.D., Cutler had an opportunity to become a member one of the early commercial trips down the Colorado River in three wooden cataract rowboats with Norman

Nevills. Nevills was looking for a boatman with experience with currents and rapids, and recruited Hugh, who had been floating rivers since childhood, and as noted, had been working the Green River in the Medicine Hat area back in 1937. Cutler agreed to join the party, but with the stipulation that he would be free to collect plants along the way. Part way through the 60 day trip, Barry Goldwater joined the river party (Goldwater 1970), and Cutler maintained a friendship with him for life. It was during this trip that we can document the collection of his first archaeobotanical sample — some corn cobs that he recovered from an Anasazi ruin along the river which his archaeological contacts indicated were about 900 years old.

Cutler married Marian W. Cornell, on August 26, 1940, four days after finishing the Colorado River trip; they later had one son, William Cornell Cutler, born January 25, 1946. By 1940, Paul Mangelsdorf and Edgar Anderson had hooked Hugh on research into the origin of maize, and Cutler and Anderson had been awarded an American Philosophical Society grant to follow up on this research. Thus immediately after their wedding, Hugh and Marian left for a three month long “honeymoon” traveling 12,480 miles in Mexico, and Guatemala, where Cutler made 60 collections of wild varieties of *Tripsacum* and 300 collections of cultivated varieties of maize (Anon 1940). It was during this work that he began to develop a method for measuring cob angles to estimate row-counts of fragmentary specimens (Cutler 1940), later adding to these measurements additional components on rachis and cupule definition (Cutler and Cutler 1947), a technique reified by his student Norton Nickerson (1953), that only recently has been superseded in paleoethnobotanical maize studies.

Although Cutler’s first love was the US Southwest, much of his research from 1941 through 1946 was spent in fieldwork in Peru, Bolivia, and Brazil, with a short period in Cuba as well. (He conducted additional work in Cuba later while at the Field Museum of Natural History). While in Bolivia, he worked with Martin Cardenas Hermosa (1899-1973). Cardenas was a botanist, who had organized the first university studies in botany and agriculture at the Universidad Nacional Mayor de San Simon in Cochabamba, who was very interested in economic botany, and who served as the rector of the university from 1937 to 1946. Cutler and Cardenas wrote the first study on the races of maize in Bolivia (Cardenas and Cutler 1943). With Edgar Anderson, Cutler (Cutler and Anderson 1942, Cutler 1946) also wrote up additional discussion of Cutler’s collections from Peru and Mexico during this period; this was the beginning of Cutler’s later 12,000 cob collection of maize ear varieties. Partly through the influence of Cardenas, Cutler became very interested in various of the food production and preparation technologies employed by the Aymara and Quechua Indians of the Cochabamba Valley and the Lake Titicaca basin, co-authoring with Cardenas (Cutler and Cardenas 1947) a report on chicha preparation (a low alcohol beer fermented from a corn base), as well as shooting two 16 mm films each of about 40 minutes duration on these local methodologies. Cardenas and Cutler remained friends for the next three decades, with Cardenas always taking time from his trips to international scientific meetings to visit “mis buenos amigos Hugh y Marian Cutler” (Cardenas 1973:357, 389, 494, 409). When Cardenas was stricken with cancer in January of 1970, Cutler arranged for him to come to St. Louis, and through their contacts at Barnes Hospital, arranged to have the charges for treatment waived. This treatment permitted Cardenas to return to Bolivia to continue research, and also complete his 450 page summary volume of his life’s work (Cardenas 1973).

During the period from 1941 to 1946, Cutler was a Research Associate of the Harvard University Botanical Museum. He funded his research in part by Guggenheim Fellowships in 1942-3 and 1946-7, awarded for his research on useful plants in Peru and Bolivia. Between 1943 and 1945, he was on leave from Harvard, as he served his war service as a Field Technician for the US Army’s Rubber Development Corporation in Brazil. He spent much of this war service in blimps flying over seven states in Northern Brazil, identifying wild rubber tree groves from the air, to be tapped later by ground parties. He also continued his love of floating rivers, buying a 27 foot dugout canoe, with 14 foot long spear-shaped paddles, at Corumba, on the border between Brazil and Bolivia, and floated down the Rio Paraguay, collecting specimens on the way. The train across Brazil to Bolivia ran only twice a week, at a crawl, so that Cutler would go out to the front of the locomotive when the landscape looked promising, jump off, collect what he could, and run to get back on before the train passed him by. He and Marian always carried two suitcases: one for clothes, and the other for scientific specimens.

Cutler throughout his life was interested in what we today call "biodiversity", with the first publications on this developing out of his work in Peru and Bolivia. He often sought out rare or endangered plant species to attempt to preserve germ plasm. He noted (Cutler 1944) that it was often the yatiri or medicine men, who maintained rare or unique strains of crops. Nabhan (1983:10) has suggested that perhaps Hugh was the first to identify a kind of "Johnny Appleseed" in these yatiri, suggesting that the flute-playing, pack-carrying medicine men of the Andes is linked with Kokopelli, the humpbacked or pack-carrying flute-player of the prehistoric American Southwest, seen as the "Native American patron saint for conserving agricultural diversity" (Nabhan 1983:4).

From 1947 to 1953, Cutler was Curator of Economic Botany at the Field Museum of Natural History in Chicago. It is during this time that his direct association with archaeologists began. Paul Martin was at the Field Museum, and needed someone to do his plant identifications. Consequently Cutler secured a Viking Fund/Wenner Gren Foundation grant in 1950, for the identification of plant remains from archaeological sites in New Mexico, and a Guggenheim Foundation grant in 1951 to study the origins of cultivated Cucurbita. After initial work on collections in the museum, he visited Martin in the field, to make suggestions regarding recovery of materials. For example, 1951 and 1952, he employed flotation techniques to extract plant remains in the excavations by Paul Martin at Tularosa Cave and Higgins Flat pueblo. The success of these experiments seems to be the beginning of his advocacy for the use of finer-scale recovery techniques in archaeology, particularly flotation, such as he had employed back during his M.A. research. It is in part due to his many "on site" demonstrations of flotation techniques that the procedure seems to have finally taken hold and become a major field method of today.

In 1953, Cutler moved to the Missouri Botanical Garden in St. Louis as Curator of Economic Botany. He continued his interest in the Southwest, in the origins of agriculture, and in proselytizing the method of flotation. While flotation recovery had been employed earlier in Old World research, New World students had not yet adopted this methodology. In the 1953 field season he visited Emil Haury's Point of Pines excavations, and demonstrated for Haury and his students the use of flotation techniques in recovering botanical materials, collecting the first evidence of tobacco for the site. One of the undergraduate students involved in Haury's 1953 season was Patty Jo Watson, who was to later become very instrumental as an advocate of plant recovery by flotation techniques.

In August, 1959, Hugh Cutler visited Stuart Struever while he was excavating Mound 9 of the Kamp Mound Group. Struever (personal communication, December 30, 1998) notes "that (e.g. August 1959) is when Hugh talked me into doing water separation and chemical flotation, to attempt to recover charred botanical remains." In 1963, because Bill Cutler was participating in Struever's excavations at the Apple Creek site. Hugh visited the Kampsville project frequently during that summer, discussing with Struever strategies to refine the flotation procedures. Struever, who is often viewed by archaeology students as one of the "inventors" of flotation techniques, clearly credits Cutler, noting that (Struever 1968:361): "The original idea of attempting flotation recovery of food remains was planted in my head by Dr. Hugh Cutler; it was his urging that prompted us to experiment with these methods, and for this I am grateful." Similarly, Patty Jo Watson, who also is referred to as one of the developers of flotation techniques, notes her debt to Hugh Cutler as well (Watson 1976), beginning first with his demonstration in 1953, and later with subsequent consultations with Hugh at Washington University.

One of the spin-off results from this work was the use of flotation to concentrate samples for radiocarbon dating. Through his work at the Field Museum in Chicago, Cutler had gotten to know Robert Braidwood, for example participating in the "Symposium: Did Man Once Live by Beer Alone?" (*American Anthropologist* 55(4):515-526, 1953). According to conversations I had with Cutler in the early 1970s, Cutler had had discussions with Braidwood, Donald Collier, and Paul Martin, in the period between 1950 and 1952, about the possibility of employing flotation to concentrate dispersed small charcoal fragments into sizes large enough to be dated by the nascent radiocarbon dating technology. According to Fred Matson (personal communication, October 26, 1998), Matson had come to town for a funeral on Friday, February 20, 1953, and had stopped by Braidwood's house to visit. Braidwood had invited him on the spur of the moment to attend the Wenner-Gren Conference on African Prehistory the next day, February 21, 1953, at the

University of Chicago. Apparently the Chicago archaeologists had planned to approach Wenner-Gren for a grant to explore this issue. The lead seems to have been jointly by Robert Braidwood (representing the Chicago area archaeologists) and Paul Fejos (for the Viking Fund Foundation) — both of whom had been much involved with discussions as early as 1947 regarding applications of the exciting new technology that the University of Chicago geophysicist Willard Libby was pioneering — radiocarbon age determinations. As well the Field Museum (where Cutler was employed at the time) had been involved: Donald Collier was one of the three member “Committee on Radioactive Dating” appointed by the American Anthropological Association in 1947. Consequently, during the conference, the discussion turned to the question of developing a technique for concentrating charcoal samples.

Matson was just at a critical point in his career, making the change from a ceramic engineer, resigning his position in an engineering department the end of the spring term of 1953, and taking on a new job as an archaeological ceramicist the next fall term. Thus he was free the summer of 1953. Therefore Matson accepted the commission (under Braidwood’s guidance, using Wenner-Gren funds) to go to Modoc Rockshelter in southern Illinois, where Melvin Fowler had just taken over, to develop a methodology using various sieve and flotation strategies in the summer of 1953 (Matson 1955:162). The method so developed was employed by Matson the next summer at Braidwood’s excavations at Janno. With the advent of AMS direct detection radiocarbon determinations, the use of concentrating samples of sufficient size by flotation no longer is utilized, but it is interesting to note Cutler’s likely contribution to its historic development.

Cutler continued his association with the Missouri Botanical Gardens, serving in various administrative positions from 1954 to 1964, until his retirement in 1977. Initially much of his time was taken up in administrative responsibilities, and in rebuilding the infrastructure of the institution. The physical state of the Missouri Botanical Gardens was in suffering from several years of “benign neglect”. Hugh had his father, who was civil engineer for the city of Milwaukee, come down to St. Louis to assess the buildings, and suggest a program of repairs.

Because of his long term interest in the Southwest and in useful economic plants, Cutler had attended the Pecos Conferences for many years. Thus shortly after he had been assigned administrative duties at the “Gardens”, he decided that botany could benefit from a similar meeting, and established the on-going annual Missouri Botanical Garden’s Systematics Symposium in 1954, using the Pecos Conference as his model. Cutler still found time left to devote to questions regarding the origins of New World crops, especially in the Southwest (for example, his Glen Canyon work, Woodbury 1958). During the summer months, he often took his family on vacation to the Southwest. One procedure Cutler employed was to provide his young son Bill with a bag of candy, and to send him into the local pueblo to “break the ice”. This maneuver helped to defuse the suspicions of the residents who wondered why an outsider might want to secure samples of their crops, thus permitting Hugh to collect maize and other specimens.

From the mid-1950s onward, most of his more than 150 publications focus upon the results of analyses of plants brought to him by archaeological and ethnographic field researchers. Cutler had a particular interest in prehistoric races of maize, squashes, and gourds, although his analyses (almost always done gratis) detailed the identification of all the plant specimens submitted by the field researchers. In 1955, Cutler invited a local St. Louis avocational archaeological group to meet at the Gardens, and by 1956 had recruited several of them to help in the analysis of the increasing numbers of collections that were being sent to him for analysis (his administrative duties preventing him from devoting as much time to research as he would have liked.) A few these individuals, after being trained, volunteered a considerable amount of time in assisting in the more tedious parts of the analyses. Cutler was always very generous in sharing credit in his publications; thus one of these initial volunteers, Leonard W. Blake, who later worked in Cutler’s lab two days a week, is listed as the co-author of many of the reports and papers, among the best known of which was “Plants from Archaeological Sites East of the Rockies” (Cutler and Blake 1973).

Cutler was pleased to be able to return to full-time research in 1964, as this permitted him once again to dedicate himself to “the useful plants of the New World and their relatives; studies related to the taxonomy of useful plants; research on the wild relatives, variability, and kinds grown by living people; and specimens recovered from archaeological sites.” (Statement by Hugh Cutler, January 23, 1964, Washington

University Archives). Cutler was named an Adjunct Professor of Anthropology at Washington University in 1969, and taught the first anthropology department seminar in paleoethnobotany in 1970. Upon his retirement in 1977, his archaeological maize and cucurbit collection was sent to the Illinois State Museum in Springfield, where it is curated as the "Cutler-Blake Collection", and his collection of more than 12,000 ears of ethnographic maize (including specimens integrated into his sets from earlier investigations by Edgar Anderson) was transferred to the Department of Agriculture at the University of Illinois in Urbana.

References Cited

Unpublished personal communications from Leonard Blake, Andrew Christenson, Marian Cutler, William Cutler, Frederick R. Matson, Stuart Struever, and Patty Jo Watson.

Althoff, Shirley

1972 "Corn: the Missouri Botanical Garden has One of the World's Finest Collections Pertaining to This Most Valuable Crop in the Western Hemisphere," *St. Louis Globe-Democrat Sunday Magazine*, pp. 16-19, February 13, 1972.

Anonymous

1940 "900-Year-Old Corncobs Found by Thrifty St. Louisan in West St. Louis," *Globe-Democrat*, December 18, 1940, p. 8A

Edgar G. Anderson and Hugh C. Cutler

1942 "Races of *Zea Mays*: I. Their Recognition and Classification," *Annals of the Missouri Botanical Garden*, 29(2):69-88.

Hugh C. Cutler

1936 "Variations of Water-Level in a Bog (Ozaukee County, Wisconsin)," M.A. Thesis, Botany, University of Wisconsin-Madison, Unpublished.

1939 "Monograph of the North American Species of the Genus *Ephedra*," Ph.D. Dissertation, Botany, Washington University - St. Louis, Unpublished.

1940 "A Rapid Method for Recording Angles," *American Midland Naturalist*, 24:497-498.

1944 "Medicine Men and the Preservation of a Relic Gene in Maize," *Journal of Heredity*, 35(10):291-294.

1946 "Races of maize in South America," *Harvard University Botanical Museum Leaflets*, 12(8):257-291. (Translated by Martin Cardenas, 1949 "Razas de Maiz en Sud-America," *Revista de Agricultura de la Universidad Mayor de San Simon*, 4/5:1-30).

1953 "Symposium: Did Man Once Live by Beer Alone?" R. J. Braidwood, organizer, *American Anthropologist*, 55(4):515-526.

Hugh C. Cutler and Leonard W. Blake

1973 "Plants from Archaeological Sites East of the Rockies," Missouri Botanical Garden, St. Louis.

Hugh C. Cutler and Martin Cardenas-Hermosa

1947 "Chicha, a Native South American Beer," *Harvard University Botanical Museum Leaflets*, 13(3):33-60.

Hugh C. Cutler and Marian C. Cutler

1948 "Studies On the Structure of the Maize Plant," *Annals of the Missouri Botanical Garden*, 35:301-316.

Goldwater, Barry M.

1970 "Delightful Journey Down the Green and Colorado Rivers," Tempe: Arizona Historical Foundation (Expanded version of his 1941 *An Odyssey of the Green and Colorado Rivers: The Intimate Journal of Three Boats and Nine People on a Trip Down Two Rivers*, Privately Printed.)

Frederick R. Matson

1955 "Charcoal Concentration from Early Sites for Radiocarbon Dating," *American Antiquity*, 21(2):162-169.

Gary Nahhan

1983 "Kokopelli: The Humpbacked Flute Player," *Coevolution Quarterly*, 37:4-11.

Norton Hart Nickerson

1953 "Variation in the Female Inflorescence of *Zea Mays*," Ph.D. dissertation, Botany, Washington University-St. Louis, Unpublished.

Stuart Struever

1968 "Flotation Techniques for the Recovery of Small-Scale Archaeological Remains," *American Antiquity*, 33(3):353-362.

Patty Jo Watson

1976 "In Pursuit of Prehistoric Subsistence: A Comparative Account of Some Contemporary Flotation Techniques," *Midcontinental Journal of Archaeology*, 1(1):77-100.

Woodbury, Angus M. (and the Staff Members of the Division of Biological Sciences)

1958 "Preliminary Report on Biological Resources of the Glen Canyon Reservoir,"