

A Historiography of Archaeological Research in the Mammoth Cave Area of Kentucky: 1824–2000

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ABSTRACT

Archaeological interest in the Mammoth Cave area of Kentucky has been ongoing since the early 19th century, primarily because of the unique preservation offered at the underground cave sites. In this paper I examine almost 200 years of archaeological research conducted in the area. The paper loosely adheres to historical divisions first presented by Schwartz and later by Willey and Sabloff.

INTRODUCTION

Examination of the history of archaeological study in the Mammoth Cave region of south-central Kentucky reflects parallel development with the growth of archaeology in North America (Schwartz 1967; Willey and Sabloff 1993), but it also demonstrates why additional intensive and systematic archaeological study should to be conducted in this very significant archaeological region. In this paper I provide an historical overview of archaeological research that has taken place in and around Mammoth Cave National Park. The paper loosely adheres to historical divisions first presented by Schwartz (1967) and expanded by Willey and Sabloff (1993).

The Speculative Period: Pre-1915

One of the earliest archaeological records pertaining to the central Kentucky karst area was written in 1824 by Constantine Samuel Rafinesque (1824). Rafinesque was deeply interested in prehistoric remains of the Ohio Valley (Stout and Lewis 1995:83–90). According to Col. Bennett Young (1910:18), Rafinesque claimed to have located 148 ancient sites (settlements) and 505 monuments in a 41-county area of Kentucky, speculating as with other early 19th century naturalists about the origin of these “natural” curiosities. Rafinesque’s entry for the central Kentucky karst lists “shell mounds along Green River and mummies in caves.”

Following Rafinesque’s initial inquiry into Kentucky’s prehistory, there appears to be an absence of related literature about the antiquities of the area. This is not to say that interest in antiquities had died; it had not. According to Col. Bennett Young (1910), increased

farming activity and, in general, disruption of the land due to population growth, caused an escalation in destruction and looting of prehistoric sites. By 1870, the collecting, selling, and smuggling of antiquities in Kentucky was a major profession. Although the Mammoth Cave area is known mostly for its large cave system, the archaeological contents of the area offered a variety of artifacts and desiccated human remains for collecting and selling. Finds, such as Fawn Hoof in 1813, Scudder’s Mummy in 1814, Little Al in 1875, and Lost John in 1935, helped make the Mammoth Cave area famous (Meloy 1968). During the mid-19th and early 20th centuries, many individuals explored nearby cave systems looking for mummies and Indian relics to sell (see Young 1910). Unfortunately, this dilettantish pastime stopped only in those caves that came under the protection of the National Park Service (NPS) after 1940 (e.g., Salts, Mammoth, Longs, Bedquilt, and Lee caves); even then, infrequent looting of caves within the National Park still occurred.

The earliest historic date known from inside Salts Cave is 1809 (Watson et al. 1969:7). Dates and names upon various signature rocks in Mammoth and Salts caves indicate that the majority of historic caving dates “from the last quarter or so of the 19th century to the first quarter of the 20th century” (Watson et al. 1969:7; see also Watson 1974:21–23). The vegetal antiquities (e.g., textile bags, cordage, sandals) that could be found within the dry caves were not preserved normally in surface or “open” sites. Hence, those items were especially sought for collecting, smuggling, and looting. As an example of smuggling, in 1874 or 1875 Louis Vial and some friends explored

extensively in Salts Cave using a “new side entrance known only to themselves” (Watson et al. 1969:7). During one of those cave trips they found the “Salts Cave Mummy,” nicknamed incorrectly “Little Alice” (Robbins 1971, 1974; K. Tankersley et al. 1994; Watson et al. 1969:7). More recent examinations by the late Louise Robbins (1971:200–206) identified the sex and age of this individual to be those of a 9-year-old male.

During the 1890s, men such as F. W. Putnam of the Peabody Museum, as well as local Kentuckians such as Colonel Bennett Young, T. F. Hazen, and W. D. Cutliff, made extensive collections and/or purchased prehistoric material from Salts and Mammoth caves. Young (1910:300, 305) stated:

In 1893 Mr. Theodore F. Hazen . . . opened a new entrance into Salts Cave . . . [and] obtained many interesting relics . . . about the present entrance [Salts Sink], numerous spalls, flakes of flint, pestles, axes, awls, and other implements have been found . . .

Young went on to describe many artifacts taken from within Salts and Mammoth caves, such as cords of bark, hemp, cattail leaves, and grass; basketwork; half-burned cane torches; corn cobs (probably modern); an aboriginal ladder; wooden digging implements; cups, dishes, bowls, and water bottles made from gourds and squash rinds; tobacco leaves and seed pods (also probably modern); and many chert implements. The large collection of antiquities Young acquired was sold to the Museum of the American Indian, Heye Foundation, New York (Schwartz 1958e; Watson 1974:167). Later, John M. Nelson, who was a cave guide from 1894 to 1907, extensively collected antiquities both from the caves and from surrounding surface sites (Carey 1942; Schwartz 1958f:3; Watson et al. 1969; Watson 1974). With the exception of the John M. Nelson collection, the other large private collections were either given or sold to the American Museum of Natural History, the Smithsonian Institution, or the Peabody Museum of Archaeology and Ethnology. It was the Mammoth Cave Estates collection, donated to the American Museum of Natural History in 1913, that prompted Nels C. Nelson (no relation to John M. Nelson) to engage in the “only scientific archaeological investigations” (Schwartz 1958d) of the Mammoth Cave area up to that

time and usher in the Classificatory Period of archaeological work (Schwartz 1967; Willey and Sabloff 1993).

The Speculative Period focused initially upon discovery, with only meager attempts to offer explanations of derivation of the discovered sites. Once they were discovered and made known, the sites were vandalized and exploited for private purposes. Whether pots, “arrowheads,” or “mummies,” the market for trafficking in North American antiquities had begun. But it was from the seeds of site destruction that the first museum acquisitions were made, ushering in professional archaeological work of the Classificatory Period.

The Classificatory Period: 1916–1960

Nels C. Nelson worked in Mammoth Cave National Park during May and November 1916 as an archaeological representative of the American Museum of Natural History. His 1917 report described the materials found during his surface and cave reconnaissances and excavations in the Mammoth Cave area. Specifically, Nelson described and compared his surface finds from the Mammoth Cave and Eaton Valley fields to similar bifacial chipped stone materials then being found in the French Paleolithic (Nelson 1917:16–19, 1923). In total, Nelson examined, through excavation and/or other study, six of nine cave sites, six of seven open-surface sites, and one of four rockshelters (Nelson 1917:11). The latter number refers to the category of site types he reported for the Mammoth Cave area. Douglas W. Schwartz (1958d:1–2) stated that Nelson’s main contribution was to “scientifically document the presence in the caves of some classes of material previously only reported by amateurs.” Nelson also drew substantial conclusions from his materials, despite the lack of published reports concerning antiquities of the area and the role of plant domestication (he found large quantities of charred sunflower seeds in his Mammoth Cave vestibule excavations) in the central Kentucky region. He concluded that the Flint-Mammoth Cave system had an economic importance to the Native Americans, e.g., the quarrying of flint (e.g., from Flint Alley in Mammoth Cave, which has since been questioned [Munson et al. 1989; Prentice 1993]); Nelson was not aware that the Native Americans also exploit-

ed the caves for minerals (e.g., mirabilite, gypsum, satin spar, and selenite; see Munson et al. 1989; K. Tankersley 1996).

Nelson's archaeological excavations inside the vestibule of Mammoth Cave is his major work in the Mammoth Cave area. Although this excavation was exploratory, it was extremely extensive and thorough. Nelson sank a series of 10 test trenches that revealed midden in two places. One was near the west wall of the entrance; the other, some 40 feet from the first, extended 50 feet back over the entire entrance area. Although Nelson's notes are at times ambiguous, he demonstrated a strong concern for the temporal and spatial location of artifacts excavated (personal observation in April 1975 of Nelson's catalog record on file with the American Museum of Natural History, New York).

Nelson excavated almost all of the vestibule entrance, but the number of artifacts found was few. Douglas W. Schwartz (1958d) explained that this was probably the result of extensive looting that had occurred earlier throughout the 19th century. It also may be the result of Nelson's recovery methods (no screens were used) and/or extensive subsurface alterations resulting from cave commercialization or previous saltpeter mining operations during the War of 1812 (Meloy 1968). Any of these reasons may explain the paucity of artifacts recovered from the Mammoth Cave vestibule. Nelson did find and recognize evidence of prehistoric diet in the form of animal bone, sunflower seeds, and freshwater molluscs (Nelson 1917; Watson 1974:212). He also found prehistoric tools such as bone awls, bone flakers, antler points, tubes, stone projectile points, scrapers, ground stone implements, and items for personal adornment. Most important, Nelson (1917:69) concluded that two different cultures could be distinguished within his vestibule excavations. The lower or more "primitive" group was identified by Nelson as what archeologists would define 2 decades later (e.g., Ritchie 1933) as the Archaic culture (Schwartz 1960a:133).

Only one other reference to Mammoth Cave area prehistory appeared in print during the first 2 decades of the 20th century. This was a fleeting mention of a series of rockshelter sites near what is now the western boundary of Mammoth Cave National Park. The ref-

erence was made by C. B. Moore who visited the Indian Hill rockshelter complex in 1915 (Moore 1916). Fortunately, shallow water conditions on Green River forced Moore to terminate his plunderous Green River expedition near Indian Hill as his boat, *The Gopher*, was too large to continue the journey upstream. In 1935, a newly discovered desiccated burial within Mammoth Cave, known to the cave guides as "Lost John," brought additional archaeological publicity to the area (Pond 1935, 1937). Alonzo Pond and George Neumann's analysis of Lost John (Neumann 1938) constituted the only professional archaeological inquiry in the Mammoth Cave area between N. C. Nelson's 1916 work and the formation of Mammoth Cave National Park (MCNP) in 1940 although several additional references to caves and rockshelter sites in and around the present boundary of the park appeared in print intermittently (e.g., Fowke 1922; Funkhouser and Webb 1932). With the final acquisition of lands by the federal government on 25 Apr 1940, it became a federal offense to remove materials from cave interiors within MCNP.

During the formation of MCNP, the Mammoth Cave National Park Association purchased, from John M. Nelson, a collection of prehistoric, historic, and geological specimens that were subsequently donated to MCNP on 15 Jan 1942 (Carey 1942:1). Henry A. Carey, then of the Archaeology Department at the University of Kentucky, was placed in charge of cataloging the park's new acquisitions. He was assisted by a new NPS employee, Jesse D. Jennings (Carey 1942). Unfortunately, the majority of the 25,000 specimens in the John M. Nelson collection was without provenience. Items in the collection had been bought from the local area with no note made as to the exact collecting location. Furthermore, Nelson kept only "mental notes" for his more unusual specimens. From the John M. Nelson collection, Henry Carey concluded (1) that the MCNP area was utilized for an extensive period of time by aboriginal peoples; (2) that a typological sequence could be worked out for the area by using the collection but extreme caution should be used in drawing definitive conclusions due to the lack of controlled locational data; and (3) that scientific archaeological excavations inside the caves and at se-

lected surface sites should be started immediately. Unfortunately, due to the start of World War II, the Mammoth Cave collections heralded for study by Carey were not examined again until 1957 when Douglas W. Schwartz, from the University of Kentucky, examined the John M. Nelson materials and attempted to relocate some of the surface sites from which John Nelson had made his collections (Schwartz 1958f). Schwartz also brought systematization to the study of Native American sites in MCNP and visited several major museums in the East to study collections acquired from the Mammoth Cave area at the turn of the century (Schwartz 1958a–h). These activities culminated in a series of valuable descriptive reports (Schwartz 1958a–h) and other interpretive and popular accounts about the archaeology of the area (Schwartz 1960a; 1965).

The Classificatory Period brought a logical, scientific inquiry to the archaeology of the Mammoth Cave area. With the first work of Nelson in 1916, to the discovery of a desiccated individual (Lost John) in 1935, to the systematic reporting of archaeological sites above ground and below by Douglas Schwartz during the late 1950s/early 1960s, the archaeology of the Mammoth Cave area yielded, ever so slowly, evidence of very significant information about prehistoric cultural adaptations and cultural processes. These later studies served as the foundation for investigations by Patty Jo Watson, the Cave Research Foundation, the National Park Service, and the Illinois State Museum (Watson et al. 1969) during the next period of archaeological development.

The Explanatory/Interdisciplinary Period: 1960 to the Present

In 1942, Henry Carey emphasized the need for further surface investigations and excavations in MCNP, but little was accomplished until the recent research efforts by Patty Jo Watson and her associates (Brown 1977; Carstens 1974, 1975, 1976 1980; Carstens and Watson 1996; Marquardt 1972a, 1972b, 1974; Marquardt and Watson 1976, 1983; Robbins 1971; Wagner 1976; Watson et al. 1969; Watson 1974). Whether you call it explanatory archaeology, processual archaeology, or even post-processual archaeology, the post-1960 era

of *interdisciplinary* archaeological research in the central Kentucky karst began to answer many questions about the area's prehistory and the avenues of cultural change and adaptation through time and space.

Watson's archaeological work in MCNP began in 1962 when, in conjunction with the Cave Research Foundation, the Illinois State Museum, and MCNP, she initiated an archaeological reconnaissance of the large caves within the Flint Mammoth Cave system (Carstens and Watson 1996; Watson et al. 1969:v). Watson's initial work was carried out primarily in Salts Cave, but later research expanded into other caves (e.g., Mammoth, Lee, and Bluff) and to archaeological surface reconnaissance (Carstens 1974, 1980). Watson's reason for studying the cultural materials from within the caves was that data derived from those materials were highly relevant to the discovery of dietary practices during the early agricultural Late Archaic-Early Woodland period. Watson's research was expanded in April 1969 to include, "excavation in Salts Cave Vestibule, a search for and testing of possible surface sites near Salts Sink, and recording of prehistoric remains in other caves within the Park" (Watson et al. 1969:v). Between 1973 and 1980, Watson and her colleagues initiated comparative studies at caves outside the park (e.g., Wyandotte Cave, Indiana, and Wolf River or Jaguar Cave, Tennessee) (Crothers 1986; Munson and Munson 1990; Robbins et al. 1981; K. Tankersley et al. 1994; S. Tankersley 1993). She also obtained a more complete radiocarbon sequence from Salts and Mammoth caves, excavated and floated a stratigraphic column from Salts Cave vestibule; obtained pollen and parasitological analyses from human paleofecal specimens found within the cave, and took pollen core samples from nearby sinkhole ponds.

Aided in her research by scientists from many different fields of study, Watson was able to approach the archaeological problems of the MCNP in a scientifically integrated manner, a methodological approach she had learned as a University of Chicago graduate participating in Robert Braidwood's interdisciplinary studies of agricultural origins in the Near East. This approach led to some answers and to many new questions, particularly with respect to environmental changes and their

possible effects on the prehistoric inhabitants of the study area. Watson and her colleagues (e.g., Munson et al. 1989; K. Tankersley 1996; K. Tankersley et al. 1985) documented that prehistoric people using the cave were mining the cave for minerals (e.g., mirabilite, gypsum, selenite, and satin spar) and were simply exploring the cave system. She noted similar patterns of cultural activities in portions of other caves located inside (Lee and Bluff) and outside the park boundaries (e.g., Wyandotte Cave in Indiana, and Big Bone and Jaguar caves in Tennessee; Crothers 1986; Munson and Munson 1990; Watson 1986:109–116). Although Lee, Bluff, Wyandotte, and Jaguar caves are not comparable in size to either Salts or Mammoth Cave, the data collected by Watson and her colleagues clearly indicate that cave mining and exploration were widespread activities in this karstic region that probably began during the Late Archaic (Crothers et al. n.d.; Munson et al. 1989; Watson 1986; Watson 1974:221–232; Watson and Kennedy 1991). The 50+ radiocarbon dates now available for the Mammoth Cave archaeological project clearly demonstrate the widespread prehistoric use of caves over a very important and similar time horizon (Kennedy 1990, 1996): that of early agriculture in the Late Archaic-Early Woodland period (ca. 4000 to 2000 B.P.).

Watson's research between 1962 and 1980 in the Mammoth Cave region is unique for two reasons: (1) it is the first time such scientifically integrated archaeological deep-cave research has been attempted in the eastern U.S.; and (2) it provides an aspect of prehistoric culture process that was extremely important (i.e., the domestication of native plants, evidence for which was not then being found in "open" surface sites in the eastern U.S.). Watson's research continues in the Mammoth Cave region.

As a part of the Watson research team between 1973 and 1975, my job was to document the culture history evident in a sample of 83 surface sites in and around MCNP, examining the techno-economies of several of those sites diachronically and presenting a cultural historical context within which the surface dwellers of the central Kentucky karst explored and exploited the large caves (Carstens 1980).

Between 1977 and 1987, MCNP witnessed

only intermittent archaeological research on the park's surface archaeology. Most of the work accomplished included small, unrelated cultural resource management surveys (e.g., Beditz 1979, 1981; Carstens 1977, 1978). Between 1981 and 1989, few archaeological projects were conducted on the surface of MCNP. Exceptions are the work of Philip J. DiBlasi, who investigated the 1920s homestead of Floyd Collins (DiBlasi 1987a), a famous local cave explorer, and George Crothers, who documented material left in Sand Cave where Collins died in 1925 (Crothers 1981, 1983). DiBlasi (1987b, 1996), working with the Cave Research Foundation, also found in Salts Cave a series of prehistoric pictographs and glyphs previously undocumented. Other studies concerning the human use of the cave system, and of the people who were using the cave, focused on determining the exact nature of prehistoric mineral procurement (K. Tankersley 1996), forensic examinations of the historic findspots of mummies (K. Tankersley et al. 1994; S. Tankersley 1993), and a new and exciting search for pathogenic microorganisms in prehistoric and historic human feces and bodily fluids (Ruppert 1994; S. Tankersley 1993).

The most systematic undertaking to inventory a representative sample of the park for both historic and prehistoric cultural resources was directed by NPS archeologist Guy Prentice (1993). Although much of Prentice's prehistory is a summary of Nelson (1917), Schwartz (1958a–g), Carstens (1980), and Watson and Carstens' (1982) site inventories, Prentice adds new prehistoric and historic sites to the overall resource inventory of the park. As a result, Prentice (1994, 1996) was able to offer a settlement synopsis of MCNP for his doctoral dissertation that includes a hypothetical seasonal round between the Big Bend shell mound area and the Mammoth Cave area.

In 1993, the Science and Resource Management Division at MCNP began a long-term cultural resource inventory of all artifacts (historic and prehistoric) within the main cave in Mammoth Cave. This project is co-sponsored by the NPS and Earthwatch; the field work for this project has been directed by Ken Tankersley, Mary Kennedy, George Crothers, Christine Hensley, and Bob Ward (Kennedy 1993; Crothers and Ward 1995). Using an

Table 1. Archaeological Research in the Area of Mammoth Cave National Park, 1824 to the Present (not an exhaustive list).

Speculative-pre-1915	Rafinesque (1824), Young (1910)
Classificatory	Carey (1942); Fowke (1922); Funkhouser and Webb (1932); Hanson (1960); Meloy (1968); Moore (1916); Nelson (1917, 1923); Neumann (1938); Pond (1935, 1938); Schwartz (1958a–h; 1960a, 1960b, 1965, 1967); Schwartz and Hanson (1961); Schwartz and Sloan (1958, 1960a, 1960b); Schwartz, Sloan, and Hanson (1960).
1916–1970	
Explanatory-Interdisciplinary	Beditz (1979, 1981); Carstens 1974, 1975, 1976, 1977, 1978, 1980); Carstens and Watson (1996); Crothers (1981, 1983); Crothers et al. n.d.; Crothers and Ward (1995); DiBlasi (1987a, 1987b, 1996); Duffield (1974); Hensley (1995, 1996); Kennedy (1990, 1993, 1996); Kennedy and Watson (1997); Marquardt (1974); Molnar and Ward (1974); Munson et al. (1989); Prentice (1993, 1994, 1996); Robbins (1971, 1974, 1980); Robbins et al. (1981); Ruppert (1994); Schoenwetter (1974); K. Tankersley et al. (1994); S. Tankersley (1993); Wagner (1976); Watson (1974, 1986, 1992); Watson et al. (1969); Watson and Carstens (1975, 1982); Watson and Kennedy (1993).
1971 to the present	

Electronic Distance Measurement (EDM) system, the Earthwatch team records the exact location of every artifact noted within the surveyed areas of the cave system. This makes it possible to prepare density plots of aboriginal activity within the cave system and to determine prehistoric use areas within the cave despite 200 years of historic cave use and cave disturbance to the aboriginal materials in Mammoth Cave.

In 1992, Patty Jo Watson, Mary Kennedy, Kristen Gremillion, and Kristin Sobolik began a new study in Mammoth and Salts caves. This new arena emphasized the collection of human paleofecal samples for radiocarbon dating, parasitological analysis, macro- and microethnobotanical studies, and biochemical (hormonal) analysis. These studies would allow prehistoric fecal specimens to be sexed and thereby enable a better understanding about specific individuals who explored and mined prehistoric Mammoth Cave (Watson 1992; Watson and Kennedy 1993).

In 1994, Christine Hensley and Tom Susenbach, while working for the NPS in MCNP, conducted excavations at the stairway rockshelter (Hensley 1995, 1996). The three radiocarbon samples from Hensley's excavations of Feature 1 consistently place the site's occupation in the Early Woodland period, ca. 2170 to 2570 B.P., a date range quite comparable to the majority of aboriginal use of Mammoth and Salts caves (Hensley 1995:24, Table 1; Kennedy 1990, 1996). Further, Paul Gardner identified more than 5000 seeds of domestic,

semi-domestic, and wild chenopodium from the rockshelter occupation floor (Hensley 1995, 1996). Similar contractual archaeological studies continue today through the supervision of Bob Ward, cultural resource specialist at MCNP and the assistance of Darlene Appelgate, archaeologist at Western Kentucky University (Appelgate pers. comm. 1 July 2000).

Analytically, the Explanatory/Interdisciplinary (post-1960) era of archaeological research has answered many questions about the Native Americans who explored and exploited the environment and resources above and below ground in the central Kentucky karst. Initial studies by Watson and her colleagues in the early 1960s through 1980s focused upon time-space and environmental reconstruction sequences, then turned to more processual issues while unraveling the prehistory of the Mammoth Cave area. That work inspired other archeologists in Tennessee and Indiana to test several of Watson's observations and conclusions about the prehistory of Mammoth Cave specifically, and prehistoric cultural processes in general, finding that prehistoric aboriginal mining and exploration was a widespread cultural phenomenon; it was not limited solely to MCNP or only to the Late Archaic-Early Woodland transition (e.g., Faulkner 1986). Furthermore, not only had Watson and her associates confirmed and expanded N. C. Nelson's initial observations about the importance of plant cultivation in the Mammoth Cave area, but they also went far beyond, examining human paleofeces for

parasites and micro-organisms and determining whether prehistoric caving activities were carried out by both sexes, thereby helping to engender, and more accurately describe, Mammoth Cave prehistory.

DISCUSSION

The history of archaeology in the Mammoth Cave area closely parallels the growth and development of archaeological trends in North America. From the Speculative to the Classificatory to the Explanatory and Interdisciplinary periods, archaeological inquiry in the central Kentucky karst has demonstrated that the uncommon preservation characteristics of the cave environment provides unique insight into human behavior (prehistoric and historic) that may be more accessible than from open "surface" sites. Table 1 also reflects that, along with an increase in the intensity of cave archaeological investigation, a greater sophistication began once interdisciplinary research was initiated at the park (post-1960). That work was initiated by Patty Jo Watson and her associates and colleagues.

Early turn-of-the-century interests in cave archaeology, primarily atheoretical, prompted work at surface sites in the Mammoth Cave area and led to speculation about the origins of prehistoric cultural materials, sometimes comparing them to the better-understood European record (e.g., Nelson 1917; Young 1910). Assessing significance of and attempting to order archaeological sites from within the park area, both above ground and below, and assessing Mammoth Cave collections held outside the park, were the foci of the Classificatory Period between 1916 and 1970, culminating in the summaries of Douglas W. Schwartz (1958a-h, 1960a, 1960b, 1965). More recent work by Watson and her colleagues brought a theoretical and interdisciplinary framework to the archaeology of the park often reflecting various themes prominent in the "New Archaeology." Within the last decade cave art studies (DiBlasi 1996) have added a cognitive, or post-processualist research slant to the efforts begun by Watson's group. However, additional research is still needed in the Mammoth Cave area, above ground and below. Only the tip of the proverbial iceberg at Mammoth Cave has been studied, whereas artifacts from surface sites and

from within the caves continue to be damaged or stolen in spite of the security efforts of the NPS. New insights and new energies are needed today to carry on the fascinating study of the aboriginal and Euro-American people who explored and exploited the Kentucky underworld.

ACKNOWLEDGEMENTS

Earlier readings of a shorter version of this paper were made during the 1970s by my doctoral committee at Washington University, St. Louis. For their comments I am truly thankful. This paper also has benefitted from constructive comments made by Kenneth Sassaman at University of South Carolina and Patty Jo Watson at Washington University, St. Louis. I thank the officials at MCNP for their past and continued support of our archaeological research at the park and the Department of Geosciences at Murray State University. My wife, Nancy Son Carstens, read and commented on earlier versions of this paper, thereby greatly improving it; however, errors and omissions in this paper remain mine alone.

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Carstens, Kenneth C. 2001. "A Historiography of Archaeological Research in the Mammoth Cave Area of Kentucky: 1824-2000." *Journal of the Kentucky Academy of Science* 62(1), 60-69.

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