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The Development of Archeology in Iowa: An Overview

DUANE C. ANDERSON¹

This paper traces the development of archeology in Iowa through three distinct periods. Workers during the period of Pioneer Investigations, 1870-1920, were preoccupied with the problem of the identity of the "Mound Builders." Through their activities they stimulated public awareness and interest and fostered the growth of scientific investigations. During the Keyes-Orr Period, 1921-1950, Charles R. Keyes and his associates, working through the Iowa Archeological Survey, amassed a sizable amount of data and named various archeological cultures across the state. By the close of the Keyes-Orr Period, archeology emerged as a respected, disciplined and important pursuit in Iowa. The founding of the Iowa Archeological Society in 1951 marked the onset of the Contem-

porary Period, 1951-1975. The Society served as a catalyst for amateur-professional interaction as research programs sprang up at various colleges, universities and museums across the state. Since the 1960's there has been a gradual change in research strategy toward the "new" archeology with its emphasis on the hypothetico-deductive approach. This paper concludes with some thoughts on the future of Iowa archeology with particular reference to the need for developing a state-wide plan aimed at coordinating research, preserving sites and artifacts and involving the general public.

INDEX DESCRIPTORS: Iowa Archeology, History of Iowa Archeology, Anthropology in Iowa.

PIONEER INVESTIGATIONS, 1870-1920

We have been reading from buried remains the ancient story of the men of far off ages, and it has helped us fill up gaps with knowledge.

Duren J. H. Ward, 1903

It is difficult to summarize a century of archeological work in Iowa. Not only have the basic goals of research changed, but individual personalities so important in shaping the discipline have become blurred and much of the history has been forgotten with the passage of time. Only a portion of the field work undertaken in Iowa has ever found its way into print. It is therefore not feasible for me to present the history of archeology in Iowa on a very personal level. Although this would be highly desirable, and to a degree possible, it would require extensive travel, considerable expense and a good deal of cooperation among various agencies in the state.

The development of Iowa archeology is discussed in terms of its past, present and future. Many aspects are touched on, including field work, popular interpretation, research orientation and amateur participation, as well as individual workers and their accomplishments. The subject matter is approached from an analytical viewpoint, assessing and interpreting developments reflected in the literature, often without first-hand knowledge of the work or acquaintance with the investigators.

Three distinct periods are recognized in the history of Iowa archeology: Pioneer Investigations, 1870-1920; the Keyes-Orr Period, 1921-1950; and the Contemporary Period, 1951-1975. Each period has its own orientation, its own problems and its own achievements. Each period laid the groundwork for developments in the next. Taken together, all provide the basis for a challenging future. Since our archeological resources are rapidly diminishing, it is imperative that a comprehensive statewide plan be developed and implemented to ensure maximum recovery of archeological data in the years to come. Archeologists are becoming painfully aware that they are dealing with a non-renewable resource which must be managed and conserved (Lipe, 1974). Since we are now faced with the task of enumerating our objectives, defining our problems and coordinating our efforts, this paper concludes with same thoughts on the future of Iowa archeology.

Judging from the literature, one would be inclined to characterize the archeological pioneers in Iowa as explorers, treasure hunters, romantics and curiosity seekers. There are notable exceptions—particularly toward the close of the period (see Ward, 1904, for example). These pioneers dug many sites, often superficially, to secure artifacts, and then speculated on their significance. Such antiquarian studies either based their operations in a scientific academy such as the Davenport Academy of Science or the Sioux City Academy of Science and Letters, or in private homes. Excavation records if indeed they were kept, were sketchy during this period and published reports were highly variable as to form and content. Ordinarily they consisted of short summaries of investigations with little detailed descriptive information.

As elsewhere, Iowa archeology had its roots in the antiquarian studies that became fashionable during the latter part of the 19th century. Although J. B. Cutts reported on "ancient relics" in northwestern Iowa as early as 1873, the focus shifted abruptly to eastern Iowa where members of the Davenport Academy of Science, founded ca. 1867, began reporting the results of mound explorations that were initiated in 1876. The first few reports were straightforward enough and included details about mound structure, exotic artifacts and human remains (see reports by Farquharson, 1876; Pratt, 1876; and Tiffany, 1876a, 1876b). The academy waters were soon muddied by the introduction of fraudulent artifacts, faulty interpretations and rivalries termed the "Davenport Mystery" by Bailey (1948) and the "Davenport Conspiracy" by McKusick (1970). Principal personalities and relevant evidence are treated adequately by McKusick and will not be reiterated here.

Work continued in scattered localities across the state during this time—much of it unrelated to events taking place in the Davenport Academy. W. J. McGee, Smithsonian Institution, surveyed mounds in northeastern Iowa in Dubuque County (1878). Work began along the Des Moines River in

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1879 (Evans, 1879; Dahlberg and Dahlberg, 1880), and continued up river in the 1880's and 1890's when area residents Charles Aldrich (1884) and William Williams (1880) began reporting on the artifacts and mounds in Hamilton County. In southwestern Iowa Dean (1883) and Proudfit (1881, 1886) investigated remains now attributed to the Glenwood culture. In the meantime Banta and Garretson (1881) opened mounds in southeastern Iowa near Salem, and C. Thomas (1885) reported on remains in northeastern Iowa near New Albion.

Clement Webster of Charles City initiated work in Floyd, Chickasaw and Cerro Gordo counties (1887a, 1887b, 1889a, 1889b) and T. H. Lewis described effigy mounds in Clayton County in northeastern Iowa and stone monuments in the northwestern part of the state (Lewis, 1889a, 1890a, 1890b). He also reported petrographs in Allamakee County in 1889 (Lewis, 1889b). In 1893 additional work was reported on Toolesboro by Harrison and Pratt (1893) and Lynch et al., (1893). Frederick Starr, a professor at Coe College, described artifacts and mounds in various areas (1887, 1893) and Calvin examined the evidence of man's antiquity in Iowa (1893).

The most important single development before the turn of the century was F. Starr's bibliography and summary of all available archeological data in the state, published in 1897. Also of significance were two publications by Duren J. H. Ward, The University of Iowa, that appeared a few years later. Ward's first work, entitled "Historico-anthropological possibilities in Iowa," was published in 1903. In it he outlined problems as he saw them (i.e., the Eskimoid race and their successors the Mound Builders) and touched on the work of Starr and the Davenport Academy, but more importantly, he advanced scientific, educational and moral arguments why archeological and related studies should be undertaken.

This, coupled with his paper on the desirability of teaching anthropology in Iowa, had a stabilizing effect on the developing discipline in Iowa. Although an anthropology course was taught as early as 1887 by Starr at Coe College in Cedar Rapids, Ward argued that the lack of anthropology in Iowa schools at that time was a "great oversight" (1903b:16). Ward suggested establishing an "Anthropological Academy of Iowa" with a branch in every county and important town, arguing that there was no other way information could be adequately gathered (p. 18). He also recommended a course be taught on "races who have inhabited the state," and called for the establishment of archeological investigations and museums in various parts of Iowa. Although he considered these suggestions to be practical, they were not economically feasible and nothing came of them.

In 1903 the Iowa Anthropological Association was founded and its first meeting was held in Iowa City the next year (Starr, 1905). The proceedings of annual meetings were published in the *Iowa Journal of History and Politics* along with the results of some of the investigations carried out by members of the association (Ward, 1904, 1905, for example). In western Iowa the Sioux City Academy of Science and Letters undertook excavations in Plymouth County in a site now associated with the Mill Creek culture (Powers, 1910; Stafford, 1906).

T. Van Hynning's summary reports of excavations at the large and impressive Boone Mound were published in 1910 (1910a, 1910b). The name Ellison Orr first appears in con-

nection with archeological studies in 1913 in a report on mounds found in northeastern Iowa. This was to be the beginning of a long career in the following period. Charles R. Keyes arrived on the scene and became involved with studies of prehistoric remains in 1920. His article (1920) entitled "Some Materials for the Study of Iowa Archeology" is a valuable summary of the work accomplished during the early period and an assessment of current needs and preservation problems.

The strategy used by researchers during much of the pioneer archeological period is outlined in Figure 1. Although

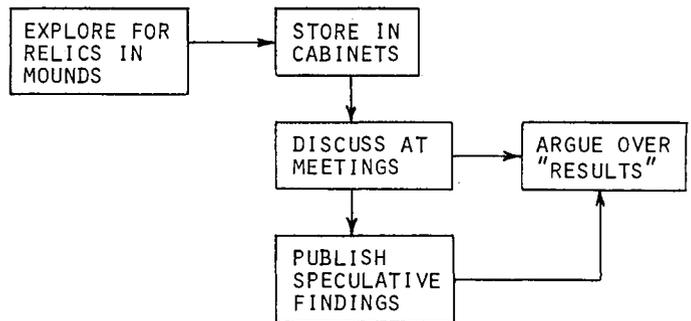


Figure 1. Strategy employed by most researchers during the period of Pioneer Investigations, 1870-1920.

the work accomplished tended to be casual and localized, it did stimulate public interest and foster the growth of scientific investigations. It is important to keep in mind that this period began at a time when there were no trained archeologists as such and no courses in anthropology at Iowa colleges and universities, and no framework in which to work.

Keyes described the literature of the early period as "rather barren," stating that "Most of the early work fell far short of scientific standards and all of it together was insufficient to give any idea of the prehistoric culture areas of the State" (1929:136). The primary reason for this failure was the preoccupation of the early workers with the "Mound Builder" problem. As the mound problem was bypassed, concern for other archeological resources increased. The important steps in this change in research emphasis are outlined in Figure 2.

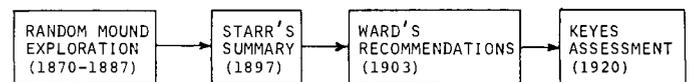


Figure 2. Important steps in the changing research orientation of the pioneer archeological period in Iowa.

Although exploratory work done during the period of Pioneer Investigations centered heavily on the "mound problem," it did provide a sizable mass of heterogeneous data. A communications network developed among those engaged in society activities and conferences, and it provided impetus for professionalization through specialized training. It also stimulated public awareness and interest, and aroused concern for the preservation of sites and artifacts. Nevertheless, the popular picture of prehistory across the nation was still much distorted by the turn of the century (see Silverberg, 1968). The thinking in Iowa at this time was voiced by B. F. Gue in his "History of Iowa":

It is not improbable that as these antiquities are further explored, additional light will be thrown upon the history of this race of people [the Mound Builders] who preceded the Indians in America. That they existed in great numbers, and through a period of many thousands of years, cannot be doubted. That they were assailed by warlike invaders coming upon them from the north and west is generally believed. That the earthworks found along the rivers were erected as protection against enemies there can be little doubt.

How long they resisted the invaders can never be known. The terrible conflicts may have lasted through several generations, as they were gradually dislodged from their strongholds and forced southward. They may have slowly perished before the resistless onslaught of the invaders until the remnants of the once numerous race became the hunted "cliff dwellers," who sought a last refuge in the sides of the deep gorges where some of the cliff houses have been preserved. It is generally believed that the remote ancestors of the North American Indians were the conquerors of the "Mound Builders" (Gue 1903:19-20).

Nevertheless, one of the main accomplishments to ultimately come out of the pioneer archeological period was the slow realization that the "Mound Builders" were not a separate race. This made the next logical step possible—that of examining all evidences of human occupation (Keyes, 1920:361). Gradually field methods were perfected during the early period from the crude and uncontrolled excavations of the 19th century and standard terminology, typology and reporting procedures began to develop. Most of the advances were spearheaded by eastern institutions such as the Smithsonian Institution, the American Museum of Natural History and Harvard University (see Holmes, 1903, 1914; Moorehead, 1910; Nelson, 1914; and Kidder, 1915, for example), but workers in Iowa were aware of these developments.

THE KEYES-ORR PERIOD, 1921-1950

... the whole question of mounds and mound builders is seen in a new perspective and the whole subject of American archeology acquires a new unity and a new breadth.

Charles R. Keyes, 1920

Charles R. Keyes and his assistant, Ellison Orr, dominated the archeological scene in Iowa during the second period. Keyes was a full-time professor of German language and literature at Cornell College, Mt. Vernon, Iowa. According to M. Wedel (1959:1), "His early interest was only that of lively minded curiosity, but more frequent and widespread examination of artifacts and sites intensified his interest." His thoughtful descriptions and interpretation attracted the attention of the State Historical Society of Iowa. The Society placed Keyes in charge of the Iowa Archeological Survey in 1921 and he began bringing together all existing information (Keyes, 1925). He devoted his summers to survey and traveled extensively in the state. Much of the early work of the Survey involved searching and compiling, but very little digging. Keyes' strategy was that of the empiricist. He believed that every bit of data that could be gleaned "would

help foot up the sum total of the knowledge which is being sought" (1925:340).

In piecing together the archeological jigsaw puzzle, Keyes began preparing a bibliography and summary of the literature. By 1925 he had assembled 500 titles. He collected clippings from local newspapers and made various efforts to locate unpublished information by writing letters, giving public lectures on archeology and visiting with people in the field. He was assisted by Benjeman F. Stambaugh, Superintendent of the State Historical Society, who sent out letters to individuals and members of the Society in an effort to obtain further archeological information.

In order to facilitate reporting, Keyes attempted to acquaint the public with evidences they might expect to encounter (1925:345-348). His categories included village sites, caves, shell mounds, burial mounds, cemeteries, trails, spirit places, petroglyphs, stone dams or fish traps, and stone quarries—quite an advance over the materials sought by workers in the Pioneer Period! Further, Keyes began a more concentrated effort toward popularizing archeology with the publication of an article entitled "Prehistoric Man in Iowa" in *The Palimpsest* (1927). There he tried to dispel the lingering Mound Builder myth, presented ethnographic and linguistic data bearing on Iowa cultures and named and defined the kinds of sites the public should report, adding enclosures, agricultural plots, caches, pits, workshops and boulder effigies to his previously published list.

The approach Keyes outlined was the "direct historical approach" used elsewhere by F. H. Cushing, A. C. Parker and Cyrus Thomas. The approach, which attempts to link prehistoric remains to historic "tribes, stocks and cultures" by means of comparing traits and artifacts in a temporal and spatial context, was later developed by Collins (1927), Strong (1935) and W. Wedel (1938). Using this method, Keyes attributed Woodland remains in Iowa to the Algonkian stock and discussed the relationship of other materials across the state. Keyes named the Oneota, Mill Creek and Effigy Mound cultures at this time (1927:224, 226, 227). According to M. Wedel (personal communication, November 13, 1974), he also used historic documents to suggest a link between the Oneota and Historic Iowa.

In 1928 Keyes published another popular article aimed at increasing public awareness of prehistory. The following year an article entitled "Some Methods and Results of the Iowa Archeological Survey" appeared (Keyes, 1929). It contained a summary of the prehistoric cultures he had defined and notes on the number and distribution of sites across Iowa. Interstate communication was improving during this time. Various professionals such as J. B. Griffin, W. C. McKern, L. A. Wilford, W. R. Wedel and W. H. Over made on-site visits and exchanged information. This ultimately led to the founding of the Plains Anthropological Conference in 1931.

By 1934 the broad outline of Iowa archeology had emerged and Keyes was ready to begin excavating in areas with which he had become familiar. The first project was conducted on Woodland and Oneota materials in Allamakee County. The project was directed by Keyes, who spent part of his time in the field, with Ellison Orr serving as assistant supervisor. Although Keyes had known Orr for a number of years, this marked the first time Orr worked for the survey in any official capacity. Orr was well qualified for the position since he had located numerous sites in northeastern Iowa and assembled a large collection from the area over a 50-year period. Work at this time was made possible by the federal

Emergency Relief Administration and later the Works Project Administration. The 1934 project, known as Federal Project 1047, was described in popular form in *The Palimpsest* (Keyes, 1934:332-338).

In 1938 MacKinley Kantor financed the investigation of two Woodland mounds near Webster City. Mildred Mott, then a graduate student at the University of Chicago, served as director. At the same time Orr began digging 10 Woodland mounds and 12 earthlodges with a W.P.A. crew in Mills County. The next year found Orr conducting extensive excavations at two Mill Creek sites in Plymouth County, again utilizing a W.P.A. crew. These projects are outlined briefly by Keyes (1940).

Additional work was conducted on archeological sites by amateurs in various parts of the state, but few reports are available. During the late 1920's and early 1930's, Nestor Stiles, Cherokee; A. A. Christiansen, Storm Lake; and Rev. F. L. Van Voorhis, Sutherland, were all actively collecting artifacts and data in the northwestern part of the state. Stiles and Van Voorhis carried on correspondence with Keyes, keeping him advised of their progress.

In 1938 Van Voorhis retired from the ministry and moved to Alta. Shortly thereafter he began excavating two earthlodges at the Chan-ya-ta Site, a Mill Creek component in Buena Vista County. Following this project, Van Voorhis continued his interest in archeology, giving lectures and making surface collections until his death in 1953. An unpublished manuscript is on file at South School, Storm Lake.

In northeastern Iowa Dr. H. P. Field, a long-time associate of Ellison Orr, was assembling surface collections from that area as early as 1927. Dr. Field has remained active through the years in the archeology of his region as well as in the Iowa Archeological Society, founded in 1950. In southwestern Iowa Paul Rowe filed his first archeological report on ceramics of the Glenwood area in 1922. He continued to assemble and publish information on southwestern Iowa until his death in 1968. Rowe's long-time associate, Donald D. Davis, has also contributed a great deal to our knowledge of archeology in southwestern Iowa.

As a result of 20 years of field work, Keyes published two outlines of Iowa archeology in the early 1940's. His first (1941) was more complete, containing a summary of work accomplished by the Survey. Both articles summarized the five archeological cultures that had emerged from his studies, and the second (1942) included a useful map showing the distribution of the cultures. These were designated Woodland, Hopewellian, Oneota, Glenwood and Mill Creek. These same cultures were presented again in 1951 in a popularized, updated version of the 1927 discussion of tribes, stocks and different kinds of sites. Aside from some minor accounts (Keyes, 1934, 1935, 1937, 1943, 1944, 1949), very little of Keyes' results were generally available until monographs were prepared by W. D. Logan (1958) and M. M. Wedel (1959) covering Keyes' excavations on Woodland and Oneota respectively.

Extensive files exist at the State Historical Society in Iowa City that have remained relatively untouched, although a few archeologists (e.g., M. Wedel, Logan, Ruppé and McKusick) have had access to them. Ten volumes of Orr's writings (1934-1939) were available for a period of time on microcards (Orr, 1963), but have since gone out of print. Some of Orr's other investigations of sites and artifacts have been published (1914, 1922, 1927, 1931). Additional Orr

materials have been located recently and are now being transferred to microfilm by the Iowa State Historical Society. Not until all Keyes-Orr material has been transcribed and made available can archeologists in Iowa make full use of their accumulated data so essential to modern research.

Most of the reports prepared during the Keyes-Orr Period were descriptive in nature. The objective was to assemble and classify as much data as possible and to interpret it for science and the lay public. Keyes' strategy is outlined in Figure 3. His methodological tools included controlled survey

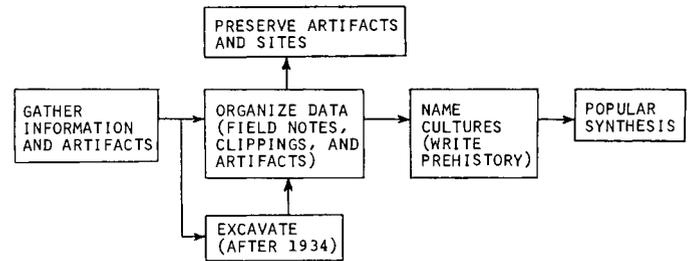


Figure 3. Strategy used by Keyes, 1921-1950.

and excavation, use of the "culture area" concept, the Midwest Taxonomic System, and, at times, the direct historical approach. He contributed much to the popular understanding of archeology in Iowa through his correspondence, radio broadcasts, lectures and *Palimpsest* articles (see Keyes, 1930, for example). Keyes, along with Orr, was influential in a long-term effort leading to the acquisition of Effigy Mounds National Monument. This notable achievement was finally realized in 1949 (Logan and Ingmanson, 1951). Keyes' long and distinguished career is not as well known as that of Ellison Orr. Generally speaking he has not received proper recognition for his years of dedicated service. After Keyes' death in 1951, obituaries appeared in the *Journal of the Iowa Archeological Society* and *Proceedings of the Iowa Academy of Science* (Ennis, 1951, 1952a). W. J. Petersen, editor of *The Palimpsest*, also published a short sketch of Keyes' life (1951). The following year a partial bibliography of Keyes' works was published by Ennis (1952b). Certainly an expanded statement of Keyes' life and archeological pursuits would be a welcome addition to the literature.

Ellison Orr's career is better known, having been summarized first by Keyes (1945). Orr's obituary was written by H. P. Field (1951), and more recently McKusick has published his "reminiscences" (Orr, 1971).

Keyes and Orr placed more emphasis on compiling and synthesizing than they did on the development of theory. They were faced with the problems of systematizing random data into archeological cultures, tying historic tribes to archeological discoveries, and determining their relationship to groups recognized outside the state. Keyes' reign with the Iowa Archeological Survey had many beneficial effects on the development of pre- and protohistoric studies in the state. Toward the close of the period, archeology emerged as a respectable, disciplined and important pursuit in the minds of many Iowans. Most would agree with Ennis (1952:51) that "In a real sense Doctor Keyes was the 'founding father' of Iowa archaeology."

THE CONTEMPORARY PERIOD, 1951-1975

. . . we know in general what occurred, but not how and why.

Wilford D. Logan, 1951

The Iowa Archeological Society

The Iowa Archeological Society was founded the year before the deaths of Keyes and Orr—thus fulfilling one of their long-held hopes. The Society became the catalyst for amateur-professional cooperation and provided a much needed vehicle for communication and interaction in dealing with Iowa archeology. William J. Kennedy, Superintendent of Effigy Mounds National Monument, working in cooperation with H. P. Field, Wilford Logan and others, helped to organize the Society. The first annual meeting occurred on November 9, 1951, in Iowa City. It was a joint meeting held in conjunction with the Iowa Society of the Archeological Institute of America, and was organized by A. K. Fisher and David B. Stout, both of The University of Iowa. The emergence of the Iowa Archeological Society marks the onset of the contemporary era of research in Iowa.

Late in 1951 W. D. Frankforter, Sanford Museum, in cooperation with A. C. Thompson, Clinton Lawver, C. H. D. Smith and others, organized the Northwest Chapter of the Iowa Archeological Society and initiated excavations at the Phipps Site north of Cherokee. Frankforter and his co-workers conducted survey and salvage in the area, guided public discussions, held field trips and designed exhibits on the archeology of the western part of the state.

In 1952 Paul Beaubien, National Park Service archeologist from the Omaha office, and Wilford Logan, Effigy Mounds, began excavating effigy and conical mounds in and near the Monument. In all of the early projects that were conducted, the public was encouraged to participate. As interest in pre-history increased, Iowa Archeological Society members in northeastern Iowa began a project on their own at Spike Hollow Rock Shelter near Waterville, and with Logan's assistance, the Northeast Chapter was organized.

Local activity in other areas of the state was either continuing from the preceding period or being newly initiated. Two enthusiasts at Iowa State University in Ames hosted the annual meeting of the Iowa Archeological Society in 1953. These men, R. W. Breckenridge and C. S. Guynne, had been doing limited archeological work for some time. Their activities resulted in the formation of the Central Iowa Chapter (later disbanded). Paul Rowe and Donald D. Davis became increasingly active in southwestern Iowa during this period.

In 1954 the activities of the Iowa Archeological Society were shifted to Iowa City under R. J. Ruppé, who had joined the Department of Sociology and Anthropology at The University of Iowa in 1952. By 1955 membership in the Iowa Archeological Society had climbed to 140 as the organization struggled for recognition and support. During the middle 1950's Ruppé and his students worked on a number of sites in widely scattered areas across the state and several students began working on master's theses.

Up to this point archeology had been largely a "good will" effort, but by 1957 enough work had been accomplished to make the financial needs of Iowa archeology glaringly apparent. Sites were being destroyed at an alarming rate. Further, several of Ruppé's students had received their degrees and were moving elsewhere. Operating funds for field school

activities and salvage programs were almost nonexistent. Even publication of Society materials was difficult to finance on the basis of memberships alone. For a period of time, separate Keyes and Orr funds were initiated to help sustain the publications program of the Iowa Archeological Society. Neither was very successful. The Northwest Chapter raised funds to support salvage near Correctionville in 1957, and in Iowa City, the Old Gold Alumni Development Fund provided small grants for the operation of Ruppé's field schools and salvage programs. The Old Gold grants helped keep Ruppé's students occupied, but did little to further Iowa archeology generally.

Ruppé expressed disappointment with the legislature in 1957 for its failure to name a state archeologist and provide needed financial support for archeology (1957:2). After two more years of difficulty and uncertainty, the Iowa Senate passed legislation in April of 1959 establishing the position of State Archeologist. The office was not funded immediately, and although Ruppé was named the first State Archeologist, he moved to Arizona before the office had completed its first contract. Ruppé was openly critical of both the state and The University of Iowa for failure to provide needed support for archeology (1960b:2-4).

With Ruppé's departure the Iowa Archeological Society moved its headquarters back to Effigy Mounds, where Earl Ingmanson assumed responsibility for publication of the Society's *Newsletter*. This arrangement worked until Ingmanson was transferred to Georgia in 1962. Then Society business was taken over by Ruppé's replacement, Marshall McKusick, who moved to Iowa in 1960. McKusick began to build the state program and published several theses written by Ruppé's students in the *Journal of the Iowa Archeological Society*. Then the Society became relatively inactive until the Sanford Museum began to reissue the *Newsletter* in 1965. It was soon moved back to Effigy Mounds, where Garland Gordon assumed the editorship of both the *Newsletter* and *Journal* until he left the state in 1968.

Soon after Gordon's departure D. R. Henning took over the Society's *Journal*, moving it to the University of Nebraska, where it remained through 1974. The *Journal* is presently edited by R. C. Mallam, Luther College, Decorah. The *Newsletter* was moved to Ottumwa in 1969, where D. G. Spears served as editor until 1972, when it came under the joint editorship of Gary and Betsy Valen at Indianola.

In recent years new chapters of the Iowa Archeological Society have been formed, including the Southeast Chapter (Ottumwa), the Central Iowa Chapter (Fort Dodge), the Quad Cities Chapter (Davenport) and the South Central Chapter (Mount Ayr). Much of the history of the Contemporary Period is contained in past issues of the IAS and NWIAS newsletters (see Anderson and McAlister, 1971, 1972, for recent bibliographies).

Since the early 1960's there has been a tendency for the *Journal* to become more technical, and the gap between amateur and professional archeologists has widened. Amateurs were excluded from the state program and left to fend largely for themselves. This tendency has been reversed to a degree since the state-wide survey has been transferred to the State Historic Preservation Office, and A. D. Anderson has actively encouraged amateurs to participate by turning in site locations and pertinent data in support of state preservation goals.

Through the years membership in the Iowa Archeological Society has increased gradually from 110 members in 1951 to 273 in 1974. There is presently an increasing eagerness on

the part of lay archeologists to participate in correspondence courses and field work leading to certification and to get involved in the preservation of artifacts and sites in a serious way. The problem is how to do these things with the limited finances of the Society. Perhaps it is time to integrate the goals and needs of the lay public into the state program.

Research on Various Archeological Cultures

Given the data base of the Keyes-Orr Period, contemporary researchers were able to investigate sites in a way that would fill out the chronology and develop a body of knowledge around each of the cultural periods. Often these studies were conducted with only the broadest problem orientation. Many sites were opened simply because they were interesting, while others were dug as salvage projects or to train students. The results of these efforts are outlined below, beginning with the earliest cultures.

Pre-Ceramic Cultures

Keyes rarely mentioned the existence of pre-ceramic cultures. It was not until the Contemporary Period that the terms "early man" and "Archaic" came into use in Iowa (Logan, 1951). The presence of early materials was established on the basis of surface finds that compared favorably with excavated sites elsewhere. Paul Rowe (1952a, 1952b) illustrated lanceolate projectile points from southwestern Iowa. Clovis points were found on the surface by amateurs across the state and several were illustrated in early issues of the Society's *Newsletter*. These points were commonly referred to as "Folsom points" by Ruppé and others.

Although Mallam (1971) has provided a synthesis of the Clovis material found in two northeastern counties, little has been added to our knowledge of the Clovis period in Iowa to date. One surface site in Cedar County which may represent a cache has been described by A. Anderson and Tiffany (1972). Agate Basin points have been recovered from the surface in several localities in western Iowa (D. Anderson and Shutler, 1974:167) and it is believed that Horizon III at the Cherokee Sewer Site may represent a buried Agate Basin component dated at 8,500 y.b.p.

Agogino and Frankforter (1960) reported the Simonsen Site near Quimby as a Paleo-Indian manifestation, but later Frankforter (1961) correctly placed Simonsen, Hill, Logan Creek and Turin with the Archaic. The first report of suspected Archaic material in Iowa was published by Ruppé (1954), although the site was never documented. The discovery of deeply buried human skeletons at Turin in 1955 aroused considerable interest. The site was first investigated by W. D. Frankforter and later visited by a number of specialists including H. M. Wormington, J. L. Champe, W. R. Wedel, E. M. Davis, R. J. Ruppé and F. Fenenga, and the story was covered in *Life* magazine (September 19, 1955). Partial findings were published (Ives, ed., 1955b; Frankforter, ed., 1955; and A. Anderson, 1957a), but no final report was prepared. Although the skeletons are not as ancient as first suspected, they represent the oldest human remains yet reported in Iowa, dated at 4,720 y.b.p., and provide the only example of Archaic burial practices and physical type in the state.

During 1958 Frankforter investigated the Hill Site (1959) and Frankforter and Agogino excavated a portion of the

Simonsen Site (Agogino and Frankforter, 1960; Frankforter and Agogino, 1959; and Frankforter and Agogino, 1960), providing evidence of an early campsite in southwestern Iowa and a bison kill in the northwestern part of the state. In 1963 work was done on Casey's Mound in Webster County by Flanders and Hansman, but the report was never printed and now it cannot be located. Frankforter returned to the Simonsen Site in 1965 to aid Northwest Chapter members with salvage operations, in the course of which additional materials from the lower level (Zone 7) were recovered. Included in this series of finds is one of the earliest stone axes in North America (Beals, 1965).

Brown (1967a), working for Smithsonian Institution River Basin Surveys, excavated a portion of the Lungren Site in Mills County, where he found Archaic material similar to that from the Hill, Turin, Simonsen and Logan Creek sites. Some additional Archaic materials have been reported in connection with survey activities (see Caldwell, 1961:140, and Gradwohl, 1972:121, for example). More recently work at the Cherokee Sewer Site conducted by R. Shutler, D. Anderson et al. (1974) has provided information on the Archaic in cultural horizons dated ca. 6,000 and 7,400 y.b.p. The work at the Cherokee Sewer Site marks the first use of the interdisciplinary approach on early cultures in Iowa. The presence of numerous early projectile point types illustrated in the Iowa Archeological Society *Newsletter* and in private collections indicates that we are only beginning to realize the potential of our resources on the early horizons.

Woodland Cultures

In the early 1950's Wilford Logan began to continue Orr's 1946 work in an attempt to identify different Woodland manifestations and to clarify relationships in support of the interpretative program being developed at Effigy Mounds (Logan, 1952-53). Paul Beaubien (1952) assisted with work on the relation between Effigy Mounds and Hopewell, in the course of which he excavated several different types of mounds. He discussed these relationships in two articles (1953a, 1953b), wherein he presented the conclusion that the mounds were constructed by different cultural groups over a long period of time, and suggested there had been a gradual transition between Hopewellian and Late Woodland cultures.

Work on other Woodland materials was carried on in Jackson County at Sullivan Rockshelter by F. Cassidy, University of New Mexico. His report first appeared in *El Palacio* but was later reprinted in the *Iowa Journal* (1954). Additional work at the site was conducted by W. Cahill, University of Minnesota. In 1955 Ruppé's students worked with Woodland burials in Boone County (Ives, ed., 1955c); the Malone II Rockshelter, a Woodland-Oneota site (Henning, 1957a, 1957b); at a Woodland site designated 13LA15 (Scholtz, 1958); and at 13LA2, a Woodland village site near Toolesboro (Ruppé, ed., 1958).

In 1958 Logan completed his doctoral dissertation, making available a considerable amount of information on Woodland ceramics including materials excavated in the Keyes-Orr Period. Ruppé (1960a) reported on the salvage of a Middle Woodland burial site near Mount Pleasant; Scholtz (1960) described exploratory excavations on a Middle Woodland site in southeastern Iowa. Much of the work was conducted

on a small scale and never reported in detail. It served more to train students how to dig than to provide systematic knowledge about the past.

A few years later Brown (1967b) reported on Woodland sites tested in Rathbun Reservoir and provided valuable data. Additional information on Woodland materials has been contributed by A. Anderson (1971), Logan (1971) and Straffin (1971b). R. Alex has completed his master's thesis at The University of Iowa on the Rock Run Rockshelter in eastern Iowa (1968), while Gradwohl and his students have carried out survey and salvage in Redrock, Saylorville and Ames reservoirs, where quantities of Woodland materials are found. Presently R. C. Mallam, Luther College, is completing his doctoral dissertation at the University of Kansas on the origin and development of the Effigy Mounds culture of northeastern Iowa. The avian remains from the Woodland sites have been analyzed by Hofer (1973) as part of his master's thesis at the University of Wisconsin. Presently M. Jaehning and D. Benn, also of the University of Wisconsin, are preparing doctoral dissertations on Woodland sites in Jackson County.

To date, practically nothing has been added to our knowledge of the Sterns Creek and Missouri Bluffs manifestations found in extreme western Iowa. They are assumed to be Late Woodland and may be ancestral to certain Late Prehistoric cultures. The present status of Sterns Creek archeology has been summarized by Tiffany (1971).

Great Oasis

The Great Oasis manifestation was first discussed by Lloyd Wilford following his excavations in 1941 at the Low Village Site in Murray County, Minnesota (n.d.a., n.d.b., 1945). The first work on Great Oasis in Iowa was done by D. R. and A. E. Henning at the Beals Site in Cherokee County in 1965 (A. E. Henning, 1967). There Great Oasis remains were recognized between Woodland and Mill Creek components. The final report on this project is pending.

Great Oasis materials were excavated earlier by Flanders and Hansman (1961) and Knauth (1963), but these sites were then considered to be Woodland. The first Great Oasis house structure was exposed in 1967 by Drexel Peterson (1967). The site, known as the Broken Kettle West Site, was later investigated by D. Henning, who dug three additional houses in 1969. Details on these excavations are also pending. Results of the paleoecological analysis by Baerreis and his students have appeared in print (Baerreis, ed., 1970; Helskog, 1972).

D. Henning published distributional information on the Great Oasis culture and summarized its artifact assemblage (1971a). Subsequently, in 1971 he excavated sites in Minnesota at and near the Great Oasis type site. A 1972 survey conducted by the University of Nebraska and the Sanford Museum in Plymouth County in the proposed Perry Creek Reservoir area disclosed numerous Great Oasis sites indicating a fertile field for future research. The Larson Site is of particular interest since it has Great Oasis and Mill Creek materials mixed (McAlister, 1972). D. Henning has conducted the preliminary investigations here, and tested a few other sites nearby. Ultimately the temporal and cultural relationships between Great Oasis and Mill Creek may be clarified.

Other data on Great Oasis have been gathered by Gradwohl in reservoir surveys in central Iowa. Presently D. Peter, Iowa State University, is completing his master's thesis on a Great Oasis/Woodland site in Boone County. An analysis of seeds recovered from the Meehan-Schell Site has been prepared as a master's thesis by B. Mead (1974) at the University of Wisconsin. Additional salvage has been undertaken by the Northwest Chapter in cooperation with the Sanford Museum at two Plymouth County sites. One involved possible Great Oasis physical remains (Anderson and Baerreis, 1973) and the other was a Great Oasis campsite in the Perry Creek Reservoir area (Williams, 1975). Radiocarbon data suggest contemporaneity of Great Oasis, Mill Creek, Oneota and possibly Late Woodland, opening the door for fruitful studies of cultural contact, cultural ecology and adaptive strategy in northwestern Iowa. A useful summary of the Late Prehistoric cultures has been provided by D. Henning (1973) but it remains in manuscript form.

Glenwood

Continuity with the Keyes-Orr Period was provided by amateurs Paul Rowe and D. D. Davis in the Glenwood area. Both worked for years with Ruppé and his students, providing information and assistance. Furthermore, employees who conducted excavations on the grounds of the Glenwood State School beginning in the 1940's were also cooperative. A. Anderson (1954) has analyzed some stone tools from the area and Ives (1955) has set up ceramic types. A. Anderson (1957b) and Davis (1959) conducted exploratory excavations on Glenwood house sites. Later much of the early work was combined by A. Anderson in his master's thesis (1961).

Lionel Brown, working for the Smithsonian Institution River Basin Surveys, conducted survey and excavation in the Pony Creek drainage and provided a reappraisal of the Glenwood sequence and its relationship to the Nebraska phase (1967a). Additional reports were prepared by A. Anderson (1970), some of which remain in manuscript form. Zimmerman (1971a) wrote his master's thesis under A. Anderson; he discussed problems of taxonomy relating to the Glenwood culture. Another master's thesis has been prepared by D. J. Johnson, Department of Geology, The University of Iowa, on mammalian remains associated with Glenwood houses (1972). At present Zimmerman is engaged in a computer assisted settlement-subsistence simulation for his doctoral dissertation at the University of Kansas. John Hotopp, State Highway Archeologist, is also writing a doctoral dissertation on Glenwood. His work is based on salvage operations conducted in the Glenwood area.

The Glenwood "culture" is part of the Nebraska phase consisting of early and late subdivisions which extend from Doniphan, Kansas, up the Missouri River to Homer, Nebraska. Work on the Nebraska phase has been accomplished in recent years by Gradwohl (1969), Wood and his associates (Wood, ed., 1969) and D. Henning and his students at the University of Nebraska.

Mill Creek

The study of the Mill Creek culture began in the Contemporary Period with Lawver's speculations on Mill Creek

horticulture and his Mandan-Mill Creek comparisons (1952a, 1952b). In 1952 Frankforter and members of the Northwest Chapter of the Iowa Archeological Society began excavations at the Phipps Site. This project continued until 1955, when they were joined by Ruppé and his students from The University of Iowa. Some brief reports of their activities appeared (Ruppé, ed., 1955; Ruppé, 1955, 1956; Ives, ed., 1955), but no project summary or statement of results has ever been published. Fortunately materials are so abundant in Mill Creek sites that some degree of specialization developed within the group and Ruppé's students assumed responsibility for different projects for their master's theses. These were later published by McKusick (Flanders, 1960; Ives, 1962; Fugle, 1962). A discussion of the avifauna from the Phipps Site was also published (Hamon, 1961). In 1957 Ruppé initiated work at the Wittrock Site in O'Brien County, which was continued in 1957. Results have not been made available.

The University of Wisconsin became involved in the Mill Creek area in 1963 when the Department of Anthropology and Center for Climatic Research tested several Mill Creek sites in cooperation with the Sanford Museum. The objective of the project was to gather data pertinent to the problem of climatic change, specifically the shift from the Neo-Atlantic to the Pacific climatic episode. The preliminary results of this interdisciplinary study appeared a few years later, first on microcards and then in the *Iowa Journal* (Baerreis and Bryson, 1967; Henning, ed., 1968, 1969). Additional reports have been prepared at the University of Wisconsin and are awaiting publication.

McKusick reopened Ruppé's excavations at the Wittrock Site in 1965 to test different parts of the village including the stockade. The report on this project is pending, although Semken (1971) has published on the small mammal remains. Perhaps when the Wittrock Site is adequately reported in the literature the lingering myth that the site is a "Norse" village will be dissipated.

In 1969 D. Anderson published a summary of the Mill Creek literature and discussed the taxonomic history of the complex. Later that year Zimmerman conducted salvage operations at the Skadeland Site in a Sanford Museum-The University of Iowa project (1971b). Vis and D. Henning have published a revised seriation of the Little Sioux phase (1969), a study based on Vis' master's thesis prepared at the University of Missouri. D. Henning (1971b) is also the author of an article on the origin of Mill Creek based on a paper given at the Wartburg Symposium held in 1970.

A project was launched by the University of Wisconsin and the Sanford Museum at the Brewster Site in Cherokee County in 1970 as a continuation of the climatic and environmental research initiated in 1963. The ceramic analysis was undertaken by D. Anderson as a doctoral dissertation at the University of Colorado (1972). Reports on the lithic materials (D. Anderson, 1973), seeds (Stans, 1972), carbonized wood (Conrad and Koeppen, 1972) and fish (L. M. Alex, 1973) have also been issued. The animal bone and bone artifacts from the site are being analyzed by J. Dallman, University of Wisconsin, who is preparing a dietary study for his doctoral dissertation, utilizing materials from several Mill Creek sites.

The University of Wisconsin has initiated studies on the related Over focus in South Dakota. R. A. Alex is analyzing materials from the Mitchell Site for his doctoral dissertation, which should be useful in assessing Mill Creek-Over rela-

tionships. More recently J. A. Tiffany, University of Wisconsin, excavated several house structures at the Chan-ya-ta Site in Buena Vista County. This project, which will serve as Tiffany's dissertation, represents a further extension of the climatic and environmental studies which have been conducted by the University of Wisconsin for over a decade.

Oneota

Keyes and Orr produced a considerable amount of information on Oneota materials, particularly those to be found in northeastern Iowa. Mildred Mott Wedel (1959) described the excavated material as related earlier. Further study of Oneota sites was carried on by the personnel at Effigy Mounds and by members of the Northeast Chapter of the Iowa Archeological Society during the early years of the Contemporary Period. In 1957 D. Henning reported excavations in the Malone II Rockshelter in northeast Iowa, where an Oneota component was found overlying Woodland materials (1957a, 1957b). For a master's thesis at the University of Chicago, Mildred Mott (Wedel) made a detailed historical and archeological analysis of the northeast Iowa region which revealed that the geographical extent of the Orr focus Oneota material coincided with that of the Ioway Indians and with no other tribe. Moreover, temporal and other considerations were congenial with this conclusion. She was thereby able to confirm with more authority Keyes' tentative postulation of this identification (Mott, 1938). Discoveries were made near Correctionville in the 1950's, where three large sites came under the scrutiny of the Northwest Chapter. This work was ultimately written up by D. Henning (1961) in his master's thesis at The University of Iowa.

Studies of the physical remains of Oneota peoples were conducted by Davis (1958), Bray (1961), D. Henning and Peterson (1965), Bass and Berneking (1965) and D. Anderson (1971). Other investigations on Oneota materials have been reported by Clark (1971), formerly of Luther College; Straffin (1971a), formerly of Parsons College; McKusick (1973); D. Henning (1970); and Harvey (1971). The Henning and Harvey syntheses are the result of their doctoral studies completed at the University of Wisconsin.

Additional Oneota studies are presently being conducted by Gradwohl and his students at Iowa State University. A new phase of Oneota found in central Iowa has been tentatively identified by Gradwohl (1967) and termed the "Moingona." N. Osborn's master's thesis on the Clarkson Site in Warren County (Moingona phase) is presently in preparation. In recent years, R. C. Mallam, Luther College, has been involved in the recovery of Oneota materials in northeastern Iowa.

Historic

Relatively little Historic archeology has been conducted in Iowa. Proto-Historic Oneota remains thought to be related to the Historic Ioway have been described by M. Mott (1938) and others (see D. Anderson, 1973b, for a review). M. B. McKusick has investigated a number of Iowa forts and has conducted excavations at Fort Madison and Fort Cherokee. McKusick and J. Vincent have each prepared lengthy manuscripts on Iowa forts, but neither has been published.

David Gradwohl has taken a special interest in recording historic sites in central Iowa, with pottery kilns receiving particular attention. One of his students has already completed a master's thesis on the Clayport Kiln (Reynolds, 1970). Theses on the Moingona and Noah Creek kilns are presently in preparation by A. Shroeder and B. Shulte.

Additional work on historic structures has been conducted at the Jesse Hoover blacksmith shop, West Branch, and at the Gardner Cabin near Spirit Lake by A. Anderson. The discovery of the steamboat *Bertrand* at De Soto Bend in southwestern Iowa in 1968 represents an important landmark in historic archeology. The fortuitous discovery of thousands of well preserved artifacts in the wreckage of the *Bertrand* has led to advances in preservation methods and knowledge of Civil War period artifacts. The cargo included agricultural and mining supplies, household paraphernalia, clothing, bottled and canned foods, alcoholic beverages and weapons (see Petsche, 1970, 1974; Switzer, 1974, for example). The *Bertrand* project was conducted by the National Park Service in cooperation with the discoverers of the steamboat, the Bureau of Sport Fisheries and Wildlife and other agencies.

Archeological Site Surveys

Site location surveys have been conducted in widely scattered areas of the state. Included are areas where dams, roads and other construction projects have threatened archeological resources. Other areas, primarily those in close proximity to interested institutions, have received spotty reconnaissance. In the early years of the Contemporary Period, Logan, Beaubien and others conducted surveys of the Effigy Mounds area. Later Ruppé and his students worked in different regions, particularly in eastern Iowa, while Frankforter, aided by Nestor Stiles and members of the Northwest Chapter, recorded sites in the northwestern part of the state. John Vincent, another of Ruppé's students, reported on materials from Cedar County (1960).

More organized reconnaissance began in the Coralville Reservoir area in 1956 (Caldwell, 1961) and was accompanied by some limited testing of sites. Work on endangered areas continued at Rathbun Reservoir (McKusick and Reis, 1962; Hoffman, 1965; Brown, 1966) and at Saylorville Reservoir (Ashworth and McKusick, 1964; Brown, 1966). Subsequently Gradwohl has conducted more extensive survey and salvage in the Red Rock, Saylorville and Ames reservoir areas (Gradwohl and Osborn, 1972, 1973a, 1973b, 1974).

During the last few years, a considerable amount of survey work has been accomplished along highway right of ways by highway salvage archeologists John Hotopp and his predecessors James Boyland and Adrian Anderson, working through the Office of the State Archeologist. Small-scale surveys have also been undertaken in recent years along the Floyd River (Anderson, 1970), the Big Sioux River (Lindsay, 1970) and the Maple River (Brenner and Brenner, 1971). The Sanford Museum and the University of Nebraska cooperated in surveying the Perry Creek Reservoir area in Plymouth County under the auspices of the National Park Service in 1972. Other small-scale surveys have been undertaken across the state by various institutions and individuals.

The Historic Preservation Officer now has taken over the state-wide survey formerly conducted by the Office of the State Archaeologist. This has provided the basis for improved communication among professionals and has greatly increased the ability of the lay public to participate in site location

and preservation in a meaningful way. Members of the Iowa Archeological Society have been encouraged to contribute sites and accompanying data for inclusion in the state-wide survey with good results.

Popular Syntheses

The first popular synthesis of Iowa archeology since Keyes (1927) was written by Logan (1951). Ruppé (1953-54) added to Logan's account, and later wrote a popular summary published in the *Iowan* magazine. This series of articles was reprinted in the *Iowa Journal* (1955-56). It was particularly informative to the public since it not only discussed current thinking, but featured contemporary field work.

Mildred Mott Wedel (1961) and M. B. McKusick (1964a) publicized the archeology of northeastern Iowa in *The Palimpsest*. McKusick later published a projectile point guide (1963) and a semi-popular book encompassing the prehistory of the entire state (1964b). More recently Herold (1970) has popularized the Hopewellian cultures of eastern Iowa, and D. Anderson (1975) has published a popular prehistory of the western part of the state.

Methodological Developments

Very limited methodological advances were made in Iowa during the 1950's. Most of the methodology used by researchers was imported and, in turn, relayed to amateurs as a means of conducting basic investigations. This fact is born out by Logan's (1953) article on how to conduct an archeological survey and report sites. Frankforter (1953) argued for use of a standard trinomial site numbering system, and Soday's field manual was reprinted in two parts (1959a, 1959b).

Later Ruppé made suggestions regarding the preparation of archeological reports (Ruppé, ed., 1960), and Banks (1962) described a method of illustrating newsletters. Throughout, amateurs were encouraged to participate in research (see A. Anderson, 1967, for example). While the approach involving lay archeologists is valid and far from fully developed, the fact remains that Iowa archeologists contributed little to the development of methodology on a professional level during the first decade of the Contemporary Period.

The picture has changed somewhat in the last 15 years. Interdisciplinary work on climatic change in northwestern Iowa has attempted to maximize recovery of data and exploit the range of micro- and macro-materials. These projects have, by example, contributed significantly to the archeological results obtainable in the region (see D. Henning, ed., 1968, 1969; Baerreis, ed., 1970; Baerreis, 1971; Shutler, Anderson et al., 1974, for example). Other instances of exemplary methodology include Parson's (1962) study of soils at Effigy Mounds, Gradwohl's use of reconnaissance units in survey (Gradwohl and Osborn, 1972), Mandeville and Flenniken's (1974) work with thermal pretreatment of chert, Flenniken's (1974) functional analysis of grooved abraders and Zimmerman's pending computer simulation of settlement and subsistence systems for the Glenwood culture.

A large number of radiocarbon determinations pertaining to Iowa's prehistoric cultures have been processed by the radiocarbon laboratory in the Center for Climatic Research, University of Wisconsin, under the direction of Dr. Margaret Bender. These dates, which are published in issues of the journal *Radiocarbon*, are invaluable in chronological studies.

Changing Research Emphasis

Researchers during the Contemporary Period have contributed significantly to the data base developed by Keyes and Orr and have assisted with the further, more detailed ordering of cultures in time and space. Traditionally American archeologists have been primarily engaged in reconstructing culture history. Prior to 1960 very little effort was expended in Iowa in areas dealing with prehistoric lifeways and cultural process. Landmark studies (e.g., Steward and Stelzer, 1938; Kroeber, 1940; Krieger, 1944; Taylor, 1948; and Spaulding, 1953) had little recognizable effect on archeological work in Iowa, although several of Ruppé's students did make use of statistical methods, seriation and the unit concepts of Willey and Phillips (1955).

Throughout the Contemporary Period, research in Iowa has continued to be primarily inductive in nature, following the general outline of the empiricist model discussed by Fritz and Plog (1970). This approach is diagrammed in Figure 4. The basic idea is the same as that underlying the work of Keyes and Orr. That is, if description is accurate and complete, it can solve problems.

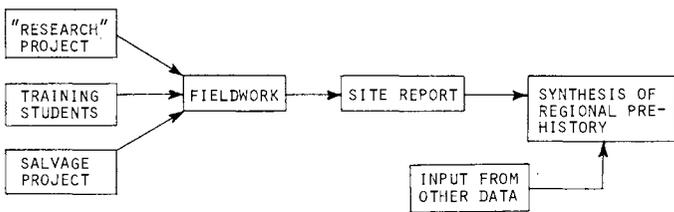


Figure 4. Empiricist strategy that prevailed in Iowa archeology during much of the Contemporary Period. (Modified after King, 1971:257.)

In the early 1960's the "new" archeology appeared on the national scene (see Leone, ed., 1972, for a summary). Its proponents argued that the ultimate goal of archeology should be the formulation of laws of cultural dynamics. Toward this end there has been an attempt to develop scientific methods and techniques into a unique body of archeological theory. Extinct cultures began to be viewed as evolving systems in which sources of variability, form and interrelationships could be examined and explained. Implicit in the "new" approach is the rigorous testing of hypotheses using deductive as well as inductive reasoning and the verification of results through the use of independent data. In short, the new school holds that traditional research can provide a first understanding, a sense of the problem and an initial classification, but to progress beyond this stage it is necessary to elaborate theory and method along different lines.

The "new" archeology has been steadily gathering momentum in American archeology and this trend can be seen in Iowa in an increase in studies dealing with ecology, subsistence and settlement patterns, seasonality and technology. All Iowa studies to date fall short of "explanatory research design" in the strict sense discussed by Fritz and Plog (1970:410-411). The closest thing Iowa has in terms of the explicit approach would seem to be the climatic and environmental research projects conducted by Baerreis, Bryson and their associates. The positivist model implicit in these studies and identified with the "new" archeology is diagrammed in Figure 5.

The polarizing of empiricist and positivist approaches has caused a conflict of values elsewhere (King, 1971). The problem stems from the fact that, since new and traditional

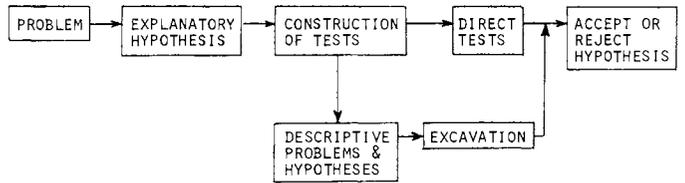


Figure 5. Positivist strategy currently gaining acceptance in the Contemporary Period. (Modified after King, 1971:257.)

approaches differ, researchers engaged in hypothesis testing are in competition with the "traditionalists" for funding and archeological resources. The same problem could develop in Iowa. If four or five institutions all had contracts to salvage a major reservoir without any overall coordination or battle plan, many different kinds of data would be collected, but it would not be likely that the data from these different projects would be adequate to answer any but the most general questions. The solution to the problem lies in coordinating the efforts of archeologists to reduce or remove conflicts of interest.

We must recognize that archeology is now swinging toward the positivist end of the spectrum and that the construction of "models" is the current research style, but we must not forget the contribution of the empiricist viewpoint. The fact that all research entails interplay between induction and deduction is of basic importance (see Levin, 1973, for a discussion).

In Iowa there is plenty of room for empirical studies. Many areas are so poorly known that basic site location and preliminary testing are needed before patterns can be perceived that can be subjected to deductive testing. The lay archeologist is expected to be increasingly helpful in this regard—particularly if technical training programs can be implemented. There are two important considerations in blending the traditional and new approaches. First, we must ensure that empirical studies are not conducted at the expense of more rigorous problem oriented research, and second, in employing the positivist model researchers must guard against seeking only proof, ignoring contradictory evidence.

In general it is safe to say that Iowa archeologists have been reluctant to jump head first into the new archeology. On the whole they tend to be less radical and less dogmatic than certain archeologists elsewhere. For this author, Mayer-Oakes (1974) and Willey and Sabloff (1974) present realistic appraisals of the new versus the traditional archeology. In the words of Willey and Sabloff:

A discipline deeply divided between polarized schools of thought . . . could easily suppress or delay the rise of productive "middle-ground" thinking. In considering this we should not forget that another dogmatism, that of the anti-evolutionary, anti-environmentalist philosophies which long dominated American anthropology, did little service to American archeology. In contrast, European prehistory of the same period, free from such a stultifying atmosphere, produced the seminal works of Gordon Childe and Grahame Clark. If history has its lessons, it might be well to reject that part of the "new archeology"

that threatens to become the "new dogmatism" (1974: 196-197).

In Iowa the most important consideration when it comes to planning and funding large-scale or long-range projects is that all parties work together to develop the kind of data needed to solve problems. This calls for the development of a state-wide plan with explicit procedures to provide for long-range recovery of information in systematic terms. Unfortunately this plan has not yet been developed.

OUTLOOK FOR THE FUTURE

Many a valuable piece of information is coming to light, and then passing from view as the years roll by.

Duren J. H. Ward, 1903

Research

If the problem of diminishing archeological resources has been bad in the past, it is almost overwhelming now. This makes it imperative that a state-wide plan be developed to facilitate problem oriented research. All practicing archeologists should cooperate in such an endeavor to avoid squandering our resources needlessly. This will not only make it possible to provide meaningful input into environmental impact statements related to emergency situations, but it will enable archeologists to work on the program rather than the project level. Constant communication between agencies and institutions is critical to a balanced attack, as is a greater utilization of the interdisciplinary approach.

The state-wide plan should not be limited to the organization of research; it should reach out into areas of preservation, popular interpretation and public participation. There are some positive signs. The State Preserves System, established in 1965, is now functioning adequately. The recent reorganization of Iowa's three historic programs under one State Historical Board and the pending reorganization of the Office of the State Archeologist show an ongoing commitment on the part of the state to fund historic, proto-historic and pre-historic studies and preservation of artifacts and sites. Close cooperation among these agencies will ensure the smooth flow of state and federal monies that are being made available in response to increased needs.

In the future we must work toward maximizing the data we already have. There are a number of unpublished theses and dissertations on Iowa archeology at universities in Iowa, Wisconsin, Nebraska, Kansas and Colorado. Several reports have been filed with the National Park Service, the Highway Commission and other agencies resulting from contract work. These must be made available if they are to be useful. By the same token, archeologists need improved access to the wealth of material gathered by Keyes and Orr. At present, relatively little of this has been released beyond limited circles.

Public Archeology

If archeology is to be fully developed in Iowa, it will be necessary to enlist the interest and support of the general public—including Native American groups. After all, most archeological work and most archeologists themselves are ultimately supported by tax money. The public is entitled to have the results of archeological research in terms it can understand. Further, the public should be allowed to partici-

pate in a meaningful way. This calls for the establishment of improved information centers and field representatives who can act as consultants on behalf of the public.

The need for increased communication with such agencies as the Iowa Archeological Society and the Iowa Local Historical and Museum Association seems obvious. Lay archeologists have expressed a desire to have correspondence courses, field schools and other activities that would lead to some kind of official certification (Arkansas has a model program of this nature). The amateur societies cannot be expected to develop programs such as these on their own. They will need the assistance of professionals and the state program.

One of the state's greatest needs is a modern museum devoted to Iowa's prehistoric and early historic cultures—not an attic, but a living interpretive visitor center spotlighting Iowa archeology, coupled with an adequate repository for the processing and storage of the range of materials recovered from archeological sites in the state. The need to store and protect archeological collections has been summed up quite well by Lipe:

I submit that we should be even more concerned about the future indefinite preservation of our records and collections than about the preservation of our published works, however important the latter may be to scholarship. Libraries are, in general, doing a much better job of maintaining collections of books than museums are of maintaining collections of artifacts and site records. Furthermore, published works are likely to grow more and more obsolete through time and to receive less and less attention, whereas the basic records and collections are likely to grow more important and to be frequently consulted through time, as our supply of actual sites dwindles. Yet in some parts of the country, archaeologists are still throwing away large parts of their collections after they have been given an initial study. The assumption would seem to be that all possibly relevant information, now or in the future, has been extracted by this first study. Even archaeologists who do not share this assumption, which seems to me patently false, are often forced to throw away materials by the fact that their storerooms are full, and they have no foreseeable possibilities for getting more storage space. And this is a one-way street. The only direction that the need for storage facilities will go is up.

Part of our archaeological conservation campaign, then, must be to convince our museums and museum-like institutions, and their financial backers, of the importance of the storage function. The museum's role as a keeper is at least as important to society as its role as a displayer, yet the latter usually receives the most support (Lipe, 1974:238-239).

Archeology in Elementary and Secondary Schools

Learners in Iowa history classes are not exposed adequately to the state's rich prehistory. The documentary films recently produced by the Office of the State Archeologist are a start, but what is needed now are discussions with the State Department of Public Instruction that will lead to the development of educational television, learning packets, film strips and other teacher aids. These should be prepared by specialists in the education field in cooperation with archeologists. To be most useful, these materials should be designed with the state's educational goals in mind. Further, they should be conceived in performance terms (with evaluation

measures) and should provide the basis for behavioral modifications that will foster an understanding and appreciation of our archeological heritage. After all, we are counting on tomorrow's citizens to continue our work in what R. B. McMillan (1972) has already called archeology's Eleventh Hour.

ACKNOWLEDGMENTS

I am grateful to Mildred M. Wedel and Richard Shutler, Jr., for reading drafts of this manuscript. Mrs. Wedel's insights and suggestions based on her long experience were particularly helpful. David M. Gradwohl, Nancy M. Osborn and David A. Baerreis provided source material and assisted in various ways. By listing the above names I do not wish to imply that these individuals necessarily endorse the views I have expressed herein. This paper should be viewed as a provisional and oversimplified outline of a complex development that has taken place over a long period. The bibliography is not intended to be inclusive. There are doubtless significant omissions in all periods. Considerably more work will be necessary if the history of archeology in Iowa is to be fully developed. I wish to thank Mrs. C. H. D. Smith for her efforts in typing the final draft of this paper.

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