INTRODUCTION TO ARCHEOLOGY

By Robert J. Hoard

DEFINITIONS, DERIVATIONS, AND RESEARCH DIRECTIONS

Archeology can be defined as the scientific study of past human cultures using methods and techniques centered on the surviving physical evidence of those cultures. As most, if not all, of these past peoples had no known system of writing, the traditional elements of historic research, such as documents, records, and maps, are usually nonexistent. Archeological evidence normally consists of lost or discarded utensils, tools, structural remains, and butchered animal bone. The archeologist uses this evidence to interpret and explain various forms of human activity and adaptation and to reconstruct past cultures for the historical record. Ultimately, the archeologist hopes to bring about a better understanding of the processes of human cultural development.

Archeology in North America is generally considered to be a sub-discipline of a broader field, anthropology. Anthropology is a discipline that seeks to study humanity in its entirety: physical, cultural, social, linguistic, and historical. Thus, it includes studies of humanities similarities and diversity, both physical and cultural, now as well as in the past. Archeology differs from general anthropology in that it is specifically directed toward humanities past. It also differs in that archeology deals largely with “faceless” people who left no mark in the historical record. Archeology is concerned primarily with groups and processes, rather than with individuals and specific historical events.

Although archeology is a part of anthropology, it is closely related to many other disciplines in the social and biological sciences, as well as in the humanities. The historical emphasis in archeology is obvious and accounts for its close ties to history, paleontology, and historical geology. As is true for anthropology in general, archeology derives theories of human development and organization from social sciences, such as psychology, sociology, philosophy, political science, economics, and geography. The biological sciences, including zoology and botany, provide the basis for an understanding of the ecological setting in which early people lived as well as providing insights into human evolution. Chemistry, physics, statistics, and computer science aid the archeologist in attempts to establish chronologies, determine environmental factors, and handle the sometimes overwhelming mass of data collected at archeological sites.

The basic concepts of archeology are derived from many sources, resulting in a unique disciplinary outlook. Archeologists use a terminology that has very explicit meaning in an archeological context, but these same terms are often misunderstood because of their general usage. While it is not possible to deal fully with all the concepts and terminology of archeology in this short essay, there are a few concepts and terms which must be understood.

Culture is one of the first concepts encountered by the beginning anthropologist. A standard dictionary definition for this term states that “culture” refers to a sense of refined taste and sensibilities in the artistic aspect of life, but this definition simply does not suffice for the anthropologist. The concept of culture is a central organizing principle in anthropology, and while anthropologists argue about nuances of definition, the term is understood to refer to the shared, learned, and patterned behavior exhibited by all human groups, past and present. It thus refers to the integrated pattern of human behavior that includes thought, speech, action, and artifacts and depends upon the capacity of people for learning and transmitting knowledge to succeeding generation. Culture, in this sense is a distinctly human phenomenon.

The archeologist, while fully aware of the abstract concept of “culture” presented above, often uses the term in a slightly different way to describe specific groups of people. For the archeologist, “a culture” is represented and defined by the unique nature of the remains left behind by the members of that culture. The reoccurring nature of similar archeological remains found at different locations (sites) allows the archeologist to recognize the spatial extent and other characteristics of past cultures. Various taxonomic systems, such as the Midwestern Taxonomic system or the Willey-Phillips Cultural- Historical Integration system, are used to define specific cultures and specify the inferred relationships between cultures.

The site is the basic unit of archeological research. An archeological site is simply a place where cultural activity took place in the past and left a material presence, which can consist of several types of evidence, ranging from the obvious to the nearly intangible, including artifacts, soil disturbances, structural remains, and ecofacts. An artifact is simply a material object that has been made, modified, or used by people. Thus, in one sense the site itself is an artifact. Portable artifacts that often provide evidence of a site include chipped or ground stone, bone, shell, pottery, and burned earth. Structural (or non-portable) artifacts, such as postholes, ditches, pits, and fireplaces, can also indicate the presence of a site, and these are referred to as “features.” Ecofacts, such as pollen grains or rodent bones, which may or may not be a direct or intended result of human activity, can provide important clues about prehistoric environments and seasonal utilization of a site.

All archeological sites have at least one component. A component is a manifestation of a single cultural entity at an archeological site. It is quite possible to have multi-component sites, since in many cases a single area was inhabited by successive groups of people over a long period of time. In this latter case, stratigraphy may be present. Stratigraphy refers to the vertical layering of deposits (whether rock, soil, or cultural debris) in strata, with the oldest deposits normally found at the bottom of the column and the younger at the top.

Two concepts that underlie all archeological research are cultural continuity and culture change. The fact that humans have an antiquity that goes well beyond recorded history seems obvious today, but it is a concept that took many years to be accepted. The idea that humans have undergone profound biological and cultural changes is also an important concept. Cultural continuity, a concept referring to the establishment and long-term use of certain cultural patterns by a particular group or groups, allows archeologists to recognize and characterize cultural diversity between groups. This continuity can be altered through cultural change, occurring because of invention or innovation, environmental changes, diffusion of new traits from other areas, or through a combination of these forces. Studies of the kinds of change, rates of change, and the cumulative nature of change, are of extreme importance in archeology. They point out the interactions between groups, explain diversity and similarity, and shape understanding of culture process.

STAGES IN ARCHEOLOGICAL RESEARCH

The popular conception of the archeologist as someone who spends most of his time excavating sites is inaccurate. A great deal of work must precede and follow any large-scale archeological excavation, and several important questions must be asked before the excavation takes place. Is there a need to excavate this particular site? What can be learned from the site? What will be the disposition of the artifacts, and who will write up the information from the site? Typically, an archeological site will not be excavated unless it is in imminent danger or is believed to contain information that can solve a particular archeological question.

Archeological research is carefully planned and is normally conducted in distinct sequential stages. The first step is the archeological site survey, which is the process of finding and recording archeological sites. The surveyor should make an effort to acquire some basic knowledge about the archeology of the area to be surveyed. The physical and cultural characteristics of the archeological sites previously discovered in a particular area can obviously provide the surveyor with clues as to the location of additional sites. Archeological site survey, then really begins in the office. The archeologist should combine an understanding of the cultural history of the region with a detailed study of available maps and aerial photographs to delimit areas of archeological potential. Knowledge of the technological limitations of a particular cultural group and the environmental limitations within which that group functioned can also provide clues as to where sites might be found. During the Middle Ceramic period, for example, hoe agriculture or horticulture was a common subsistence practice for many prehistoric groups. Because of this, many Middle Ceramic villages are located near easily cultivated bottomland areas rather than on the upland where the rough prairie sod resisted even the attempts of early European American farmers.

The next step is the actual excavation of an archeological site. This should begin

with carefully controlled testing designed to determine the physical extent of the site and its potential for full-scale excavation. Archeological excavation is not something that should be taken lightly. During the excavation of an archeological site, the site itself is as effectively destroyed as if it were subjected to natural erosion or intentional destruction.

The saving grace for the archeologist is that methods and techniques have been developed for recovering the information contained in an archeological site. This allows the archeologist to reconstruct most if not all of the cultural activities that took place at that particular site. This is done through careful recovery of the artifacts, as well as by exhaustive documentation of the location of these materials and their relationship to other cultural features and to environmental and ecological features. It takes a lot of time, equipment, and specialized knowledge to effectively conduct an archeological excavation. Again, it is important to note that the archeological site itself is an artifact of human activity. It contains the contextual data that allows a theoretical reconstruction of the human activities that once took place at that location. As most excavations result in site destruction, the archeologist must make as complete a description as possible of the site while it is being dug. The resulting records, whether they are notes, photographs, sketches, or maps, will be the only source remaining for reconstructing the former occupation of the site once the excavation has been completed. These notes, therefore, are a record not only of the results of the excavation, but also of the techniques that were used to achieve these results.

To the archeologist, the artifacts recovered during the excavation are often of less interest than the context in which these artifacts are found. This is why professional archeologists are adamant in their statement that archeological excavations should be carefully directed and monitored by a trained archeologist. Most nonprofessionals lack the time to become truly familiar with excavation techniques and lack the money and personnel to conduct an excavation that will yield a maximum amount of data. Since no archeological excavation is perfect, it is necessary to take the greatest care possible during the recovery process.

The full complexity of an archeological excavation is hard for many people to comprehend because archeologists use common tools, aided by notebooks and cameras, to conduct their activities. It is true that with the exception of a few sophisticated machines, such as ground penetrating radar instruments and magnetometers, archeologists do indeed work with tools that can be purchased at nominal cost in an ordinary hardware store. However, the methods and techniques with which these tools are employed differ significantly from those used in ordinary excavations. As one archeologist aptly put it, “It ain’t ditch digging.”

Many people think that site excavation is the most exciting part of archeology, as it implies discovery, perhaps the discovery of something spectacular. Although it is true that excavation may be exciting, today excavation is regarded as a last

resort rather than as a first objective. Even careful excavation of archeological sites destroys those sites forever. Sites should not, therefore, be squandered on personal whims and certainly not for personal gain. Archeological sites are nonrenewable resources, which archeologists are trying to preserve. Furthermore, a systematic excavation takes a great deal of time, money, and expertise. Archeologists intend to excavate only those sites that they believe will provide information that illuminates specific aspects of prehistory. The only justification for excavating a site, whether it is a long-planned archeological excavation or a salvage excavation, is that new information can be secured.

CURATION AND PRESERVATION OF SPECIMENS

Curation, the long-term storage of artifacts, often begins in the field. Certain fragile materials, such as bone, shell, or floral remains, may require special chemical or physical treatment even before they are removed from the soil. However, most curation activities take place in the archeological laboratory and include such processes as washing and cataloging specimens, stabilizing fragile materials, restorating broken artifacts, preliminary identification, and the permanent storage of materials with suitable environmental controls. Also included are such specialized activities as the processing of micro fauna and micro flora by water flotation and fine sieving. An archeological excavation can produce thousands of artifacts and ecofacts, and each individual item requires a specific treatment. A relatively easy method for the preserving, cataloging, and curating of archeological specimens is included in another section of the handbook.

Many beginners are surprised to learn that archeologists devote more time to the analysis, description, an classification of archeological specimens than they do to actually collecting the specimens in the field. The technical description of artifacts can focus on several different subjects, such as the functional, formal, or cultural type of the specimen; the graphic or statistical characteristics of the artifact or assemblage; and the functional use of the artifacts as determined through ethnographic analogy, archeological context, or replicative experiments. The analysis of specific objects or assemblages can include microscopic observation as well as various physical/chemical techniques, such as radiocarbon dating. Certain analyses may require specialists from other fields, such as geologists, paleobotanists, and ceramicists.

Throughout these stages in archeological research, archeologists obtain and analyze data. After this is done, the archeologist enters into what is perhaps the most challenging aspect of archeological research: the interpretation of the raw data. As Hole and Heizer note in their book, *Prehistoric Archeology* (1977:250),

> Archeological data consists of mud, clay, stone, bone and fibrous objects, an so they will remain unless they are given a cultural interpretation. Then they become bricks, pottery, projectile points,

remains of meals, and basketry, used and discarded by living peoples in the normal routine of gaining a livelihood.

The individual artifacts or ecofacts are elements of broader cultural and environmental patterns that can be reconstructed only partially, given the limitations of survival of archeological data. Nevertheless, the problems that archeologists attempt to solve cover nearly the full range of human behavior. Cultural reconstruction can involve such diverse aspects of culture as subsistence practices, economic systems, settlement patterns, religion, social relationships, and intellectual thought. Culture-history reconstruction also can be undertaken; that is, attempts can be made to reconstruct, totally or in part, the actual history of a particular cultural group. In this sense archeology may be viewed as a historical study that has the capability of extending history back in time, far beyond the earliest written records. But archeology, as a part of anthropology, is also concerned with more theoretical questions about the human condition. This is reflected in current archeological writings by an interest in culture change and culture process or processual interpretation.

The end product of archeological research consists of reports of surveys and excavations, syntheses of these reports for particular areas or periods, and publications dealing with cultural reconstruction and processual interpretation. Public-oriented byproducts of archeological research include museum displays, actual site preservation, and interpretive displays.