

institutional existence in a plethora of local societies and conservation groups as well as in national bodies such as the Association for Industrial Archaeology, with its headquarters at Ironbridge. This organization produces its own journal, *Industrial Archaeology Review*, which maintains a high standard of coverage of current research. It is hardly too much to claim that through the application of archaeological perceptions and skills to the interpretation of industrial monuments, the understanding of the British Industrial Revolution has been, if not revolutionized, at least provided with a dimension that it previously lacked.

[See also INDUSTRIAL ARCHAEOLOGY; IRONBRIDGE.]

■ Frederick Engels, *The Condition of the Working Class in England in 1844* (1845). Arnold Toynbee, *Lectures on the Industrial Revolution in England* (1884). Paul Mantoux, *The Industrial Revolution in the Eighteenth Century* (1928). T. S. Ashton, *The Industrial Revolution 1760–1830* (1948). R. M. Hartwell, *The Causes of the Industrial Revolution in England* (1967). David Landes, *The Unbound Prometheus*, (1969). P. Mathias, *The First Industrial Nation* (1969). R. M. Hartwell, *The Industrial Revolution and Economic Growth*, London, (1971). R. A. Buchanan, *Industrial Archaeology in Britain* (1972). R. A. Buchanan, *The Power of the Machine* (1992).

R. Angus Buchanan

BRONZE AGE. See THREE-AGE SYSTEM.

BRUGH NA BÓINNE. See BOYNE VALLEY.

BURIAL AND TOMBS. Cultural practices with regard to treatment of the dead can be an important window into the past. Just as there are no singular or unitary set of beliefs with regard to treatment of the corpse, to time of mourning, or to the afterlife in the contemporary world, many variations in patterns of mortuary activity are found in antiquity. Variability in mortuary practices exists both within and among cultures and is useful for both descriptions of single cultures and comparisons among societies.

Prehistoric mortuary practices are extremely diverse. The remains of individuals may be found in cemeteries, in funerary structures, below the floors of houses, or within garbage. Individuals may have their final resting place directly in the ground, in a tomb, on a scaffold, or in water; people may be interred by themselves or with others. Corpses may be immediately deposited in the archaeological record or processed in some way first; thus, interments may be "primary" or "secondary." And, bodies may be interred with or without offerings.

Regardless of where they are encountered, the investigation of human remains are best undertaken by specialists fully aware not only of procedures for careful investigation and analysis but also of their legal responsibilities. Excavation of human skeletal remains may not always be possible. Laws and traditions concerning the appropriateness of digging and analyzing human remains are somewhat divergent. In certain areas, nearly immediate reburial of human bone is undertaken following excavation; in other situations, skeletal material may be the source of continued study.

Human burials have been used to infer many different aspects of ancient life including health and demography, status differentiation, belief systems, and ethnic differences; however, there are no absolute correlations between burial customs and specific cultural practices. Peter Ucko (*World Archaeology* 1 [1969]: 262–280) used ethnographic examples from contemporary societies to demonstrate that there may be several possible reasons for a specific mortuary practice

and that common assumptions about mortuary activity may be incorrect. For example, a lack of grave offerings may not always be an indicator of low material wealth; increased tomb size may not necessarily correlate with high status. Nevertheless, analysis of mortuary activities can provide an extremely useful means for viewing ancient cultures.

There are many classifications of mortuary information and variability. Important clues for the interpretation of mortuary patterns may be found in several areas—from analysis of the osteological remains themselves to a consideration of the manner of "disposal" of the corpse to a study of grave offerings. Analysis of human remains is particularly significant for biological information. In the arid conditions of ancient Egypt or in the frozen tundra of the Arctic where organic remains are likely to be preserved, analyses can be conducted to ascertain diverse information regarding blood type, DNA, and/or the presence of parasites. When all that remains of a human corpse are fragmentary pieces of bone, even determinations of an individual's sex, age at death, or evidence of disease may prove difficult. However, new techniques of analysis are making it possible to look at increasingly complex issues, even with poorly preserved bone. Human remains also are critical in establishing how many individuals are present in an interment and how the corpse(s) was/were prepared after death—whether the deposition of the body was primary, closely following death, or secondary, succeeding activities such as defleshing, cremation, or exposure to the elements.

Intentional symbolic burial has often been equated with the existence of human culture and belief systems. Early hominid skeletal remains of *Australopithecines* (dating from 1 million to 4.5 million years ago) have been found in situations that do not suggest intentional interment. Finds are generally of incomplete individuals. It has been suggested that South African *Australopithecine* finds at sites like Swartkrans, where some bones may actually show evidence of carnivore tooth marks, were preserved in underground caves only because these remains were dropped by predators. The first examples of intentional burials have been correlated with *Neanderthals and date between 125,000 and 40,000 years ago at sites such as La Chapelle-aux-Saints, France, where a grave filled with flint tools and animal bones contained an adult male with a bison leg on his chest, and La Ferrassie, France, where the graves of two adults and six children were found in close proximity and may represent a family cemetery.

Excavations at more recent sites generally lead to larger samples of skeletal remains and greater possibilities for using these interments to make statements not about the existence of human culture, but about the nature of the culture itself. In certain cases burial analysis may indicate that there was little if any social distinction among people other than that correlated with age, sex, or possibly lifetime skills. Even in these cases, however, osteological materials and burial patterns have been used to show ethnic distinctions, kinship relationships, and residence patterns.

Burials are not always correlated with single individuals or single events. Numerous examples exist worldwide of staged burials and so-called double funerals, in which individuals are not immediately interred in their final resting places. Secondary burial may accompany a secondary funeral, held either a short time or many years after an initial interment. Factors determining the timing of these events may include practical considerations such as the length of time necessary to accumulate the finances to pay for a

second ceremony or for flesh to decay from the bones. In certain cultures, however, secondary burial may be an episodic communitywide event. All of the individuals who have died during a given period of time (often years) may be buried together in a communal grave in conjunction with a specific ceremony.

Studies formulated to identify social stratification have focused primarily on differentiating among grave offerings and/or on distinguishing differences in the effort or energy expended in the entire mortuary process. Such studies have used burial information to demonstrate both the contemporary and the temporal variability in mortuary activity that exists within single cultures. Burial information also has been used to identify the existence of rank or stratified, as opposed to egalitarian, societies and to examine changes in social differentiation over time.

The Maya area of Mesoamerica provides a clear demonstration of the large amount of variability of mortuary activity that can exist not only within a single culture area but also within a single site or even within a single residential group. The Classic Maya (A.D. 250–950) had a series of possible ways of dealing with a corpse. Human remains have been found in contexts that do not indicate intentional burial, such as when burnt and broken human bones are discovered in garbage (possibly suggesting cannibalism). Sometimes bodies are intentionally placed in trash or directly in construction layers. Human remains are also found intentionally interred in a variety of containers, ranging from simple graves to cists to crypts to tombs. Individuals within Maya tombs are often accompanied by elaborate grave offerings, including jadeite, shell, and pottery artifacts. The percentage of individuals that were interred in the most elaborate tomb contexts vary site by site, but generally include only a small portion of Maya society. An increase in the number of individuals interred in tombs (as well as in the number of tombs themselves) occurred during the Late Classic Period (A.D. 550–950) at Caracol, Belize, and has been correlated with increased prosperity among this population, in contrast to its neighbors. Multiple individuals were often placed inside a single burial chamber at Caracol, and single tombs were used repeatedly; thus, the increased proportion of this kind of burial may also correlate with the massive population increases noted for the site during this era.

Perhaps the best-known examples of burial in tombs derive from ancient Egypt. Excavations have shown that the tombs of the pharaohs were extremely elaborate funerary monuments, the construction of which was often begun by a specific ruler years before his death. While the tombs of Egyptian rulers have been popularized worldwide, recent scientific excavations have focused on the burial patterns of other members of Egyptian society. Although the use of tombs may have been limited to the most high ranking of individuals in early dynastic history, by 1300 B.C. the artisans who created the pharaoh's tombs were building their own (albeit less elaborate) chapels and tombs in their village outside of Thebes; at about the same time, temple-tombs were also being constructed for administrators, army officials, and craftsmen in the area around Memphis. Many of these tombs have scenes and texts painted on their walls that have been extremely useful for interpretations concerning day-to-day activities in ancient Egypt as well as for explicating beliefs concerning the Egyptian afterlife.

Finally, studies of mortuary activity have not been limited to the physical excavation of burial sites, but have also

been conducted without digging through viewing variation visible in monuments such as burial markers. The study of gravestones in eighteenth- and nineteenth-century New England by James Deetz and Edwin Dethlefsen (*Natural History* 76 [1967]: 29–37) is not only an example of the potential use of style as a dating tool but also a demonstration of mortuary activities that both correlate with and reflect wider societal patterns and changes.

[See also HUMAN REMAINS, ANALYSIS OF; MEGALITHIC TOMBS; MORTUARY ANALYSIS; PALEOPATHOLOGY; REBURIAL AND REPATRIATION; URNFIELDS.]

■ R. Chapman, I. Kinnes, and K. Randsborg, *The Archaeology of Death* (1981). S. C. Humphreys and H. King, *Mortality and Immortality* (1981). M. Bloch and J. Parry, *Death and the Regeneration of Life* (1982). J. O'Shea, *Mortuary Variability* (1984). J. Romer, *Ancient Lives* (1984). G. Martin, *The Hidden Tombs of Memphis* (1991). P. Metcalf and R. Huntington, *Celebrations of Death* (1991). D. Chase and A. Chase, *Studies in the Archaeology of Caracol, Belize* (1994).

Diane Z. Chase

BYZANTINE CULTURE

Byzantine Decorative Arts
Byzantine Fortifications
Ancient Synagogues
Byzantine Monasteries

BYZANTINE DECORATIVE ARTS

Byzantium's decorative arts developed within the context of the late Roman world. The variable starting points assigned to Byzantine history reflect this essential continuity, which maintained Roman artistic means and ideas and only gradually defined a distinctive artistic style. The earliest phase of Byzantine material culture (fourth through seventh centuries) has received the greatest archaeological attention, as a result of excavations conducted at classical sites that were continuously inhabited into Byzantine times. Lacking comparable study of Byzantium's Dark Age (eighth through ninth centuries) and later years (tenth through fifteenth centuries), traditional scholarship has focused on the artistic production of Constantinople and has emphasized formalist approaches to the study of later Byzantine art. Recent scholarly interest has also included the cultural life of small settlements in the provinces and their interaction with neighboring states. Special attention has been paid to understanding how the arts functioned within contemporary society and the relationship between visual and literary images.

Byzantine decorative arts encompass objects used in daily life as well as in civil and religious ceremonies. The most common artifacts are ceramic and glass vessels, lamps, and other domestic objects. On archaeological sites, the best-dated Byzantine objects are fine red-slipped ceramic tablewares, which in the early Byzantine period originated in north Africa, western Asia Minor, and Cyprus. Common forms include broad dishes and plates stamped with vegetal and animal images and religious symbols. The subsequent development of glazed wares led to distinctive pottery styles that flourished in the east Mediterranean during the tenth through fifteenth centuries. Regional workshops produced wares with different patterns of incised and glazed decoration representing fanciful animals and floral motives as well as stylized human figures. Thin-walled glass vessels for table use were manufactured throughout the empire. Small oil-burning lamps usually