

The Emergence of Archaeology as Scientific Discipline

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1. Definition of Archaeology

It might be useful to mention of definition the archaeology, since the various definitions of Archaeology might reflect the emergence and the growth of archaeology itself. The word "archaeology" was first used to mean ancient history in general. By this definition, the contents of archaeology are derived from various collections of old manuscripts (Daniel, 1967 : 1).

Robert J. Braidwood mentioned in his book *Archaeology and What They do*, that Archaeology is the study of the things men made and did, in order that their whole way of life may be understood. By this definition, an archaeologist is interested in things and in the way they may be used to reconstruct the ways of life of past people.

Sir Leonard Woolley, an English scholar, in his book *Digging up The Past*, stressed to the prime duty of the field archaeologist is to collect and set in order material with not all of which he can himself deal at first hand.

Another English Archaeologist, Sir Mortimer Wheeler, in his book *Archaeology from the Earth*, pointed out that apart from the problem whether archaeology is to be described as an art or as a science, archaeology is dependent on multitude of sciences and is itself increasingly adopting the methodology of natural science. Furthermore, he said that archaeological excavator is not digging up things, but he is digging up people.

Grahame Clark, Professor of Archaeology at The University of Cambridge, in his book, *Archaeology and Society*, defined archaeology as the systematic study of antiquities as a means of reconstructing the past. It is likely to be involved

in the flow of time. The prehistoric archaeologist, particular, is confronted by historical changes of altogether greater dimensions than those with which the historian of liberate civilizations is concerned, and has to face demands on his historical imagination of commensurate order (Clark, 1960 : 17-37).

Professor Stuart Piggott, in his book *Approach to Archaeology*, pointed out that archaeology is branch of historical study. In his opinion, the word "history" covers all inquiry into the human past, from the earliest times (prehistory) to a few generation ago.

According to Gordon R. Willey and Jeremy A. Sabloff, archaeology is the study of human cultural and social past whose goals are to narrate the sequent story of the past to explain the events that composed it. The discipline attempts to achieve these goals by excavating and analyzing the remains and monuments of past culture and the contexts in which they are found (Willey and Sabloff, 1974: 11). By this definition they are aware that archaeology has an alliance with history and anthropology. Both archaeology and history deal with the human past, concerned with the narration of the past and with its explanation. They pointed out that the differences between archaeology and history is primarily laid in method rather than philosophical outlook. Archaeology which relies on the material remains and monuments, need that distinctive methods and techniques of their excavation and preservation, while history reconstructs the past with the aid of textual references that were coexistent with the past. To elucidate the human past, the two disciplines converge to contribute, as in those cultures where contemporary written records are few in number, selective in subject matter, or imperfectly trans-

lated, and where it is necessary to supplement them with the archaeological recovery and interpretation of artifacts and monuments. On the other hand, archaeology is also concerned with attempting to reconstruct the lives of the societies by using the artifacts. In this case, archaeology is not merely of economic and social history, but also by working on preliterate societies, of the findings of social anthropology. The main purpose of social and cultural anthropology is to seek the explanation of the ways in which cultural and social forms come into being, function, and change, or an understanding of process. An archaeologist also studies the mentality and actual physical characteristics of the supporters of his cultures, since artifacts are made by and for people and since societies are constituted by individuals. In this case, archaeologist joins with physical anthropology. At this point there is some philosophical distinction between archaeology as anthropology and archaeology as history. Historians have dealt with the past particularistic or idiographic terms, while archaeologists tend toward comparative generalization or nomothetic terms. On the other hand, historians such as Spengler and Toynbee, were interested in explaining the past in general comparative terms, while archaeologists often have been and are concerned with the specific event rather than the generalization that may be drawn from a comparison of events (Willey and Sabloff, 1974 : 12).

By this definition, Willey and Sabloff suggest that the object of archaeology are both narration and explanation, that it is both allied to history and anthropology, and that its procedures are particularizing (idiographic) and generalizing (nomothetic). Furthermore, they said :

" For Although all of these dualities are conceptually separable, they are not mutually exclusive. On the contrary, they are inevitable related. This interrelationship plain is to be recognized in the simple fact that to explain past event it is necessary to describe and to plot them in space and in time and that, conversely, such events can not to be described sat-

isfactorily until they are some extent understood" (Willey and Sabloff, 1974 :12)

2. Archaeology before the Renaissance

It began with number of individual collectors who displayed some interest in antiquities. In the sixth century B.C., the princess Belshalti Nanner, sister of Belshazzar, had special room in her house for her collection of local antiquities, and that her father, Nabonidus, the last king of Babylon, engaged in antiquarian research, and dug at Ur. In the fifth century B.C., Herodotus made ethnographical observation and some of his travels brought him into contact with barbarians surviving from prehistory. As the father of anthropology as well as the father of history, Herodotus displays as much interest in the costumes of the Egyptians, Scythians, and other "barbarian" peoples as he does in Greek and Persian political history. Although the Chinese left much information about barbarious peoples, the search for more was never organized. R.H. Lowie, in his book *The History of Ethnological Theory* (page 13) argued that a Chinese compilation of A.D. 52 preserved a folk memory of technological succession of stone, bronze, and iron. But it does not mean that archaeology began at A.D. 52 (Daniel, 1967 : 22, 23). The closest approach to an anthropological study in Greek after Herodotus was Megasthenes in the third century B.C. He described the substantial sections on Indian customs and beliefs as well as descriptions of the country and of Indian plant and animals. Like Herodotus, Megasthenes was a classical writer. There are many other Classical Writers, such as Cornelius Tacitus (A.D. 98). who wrote an ethnographic report among the peoples of Germany (Rowe, 1965: 4- 5).

During the Middle Ages, the intellectual climate was not favorable to comparative studies. European Christians were much concerned about religious differences but only for the purpose of the suppressing them. Other cultural difference were assigned little importance; it was differences in the character and mo-

ality among individuals which were considered significant. Not much information on differences among men could be obtained from this period.

In the 13th century, however, the Europeans had their attention drawn to the peoples under the Mongols, by Giovanni Dee Piandel Carpini and Willem van Rubroek. A few years later Marco Polo wrote an ethnographic information about Kublai Khan. Roger Bacon, who lived from about 1214 to about 1292, in his book, pointed out that the customs of men are different in different regions, and the differences are determined by the astrological influence of the planets (Rowe, 1965: 6-8). From this point, it is clear that until the 13th century, Archaeology and anthropology were still on the way toward being a discipline.

3. Archaeology during the Renaissance

The first differences which were recognized as a significant to a general understanding of mankind were the cultural and linguistic difference between Classical antiquity and what was then the present. The Renaissance studies of Classical antiquity not only stimulated a general interest in differences among men, they also provided models for describing such differences. The Renaissance studied Roman customs and institutions, Classical Latin and Greek, and in archaeology, the Renaissance began to study the ancient monuments of Italy and Greece. The Renaissance findings, for the first time, gave western European man a comparative point of view about cultures in other countries. Before the Renaissance, Europeans were no more sensitive to differences of time than they were to differences in space. The cultural contrast between antiquity and the present gradually came to be recognized. The Renaissance learned to see antiquity at the "perspective distance" (Rowe, 1965: 9).

Francisco Petrarca (Petrarch) (1304-1374) in this first leader in the Renaissance concerned with literary form (Roman literature). His friend, Giovanni Boc-

caccio (1313-1375) wrote treatises on Classical mythology and topography (Voight, 1894: 159-180). Another friend of Petrarch, Giovanni Dondi (1318-1389), a physician and mechanical engineer is the first man who made systematic observations of anthropological monuments in 1375 (Sarton, 1948: 1676-1677).

Then, with many new resources available, the foundations of modern scholarship were laid by Ciriaco de Pizzicollini (1391-1452) and Biondo Flavio (1392-1463). Ciriaco de' Pizzicollini was the founder of the discipline of archaeology. In 1421 he studied the Latin inscription on the triumphal arch of Trajan at Ancona and was inspired by the idea that archaeological monuments could provide a more direct a more direct testimony of antiquity than the literary tradition. He devoted the rest of his life to studying ancient monument in the field, copying inscriptions and recording ancient sculpture and architecture in Italy, Dalmatian, Greece, Turkey, and Egypt. He regarded the monument and the literature as two kinds of evidence complementing one another. (Rowe, 1965: 10).

Biondo Flavio also made important contributions to Renaissance linguistics and archaeology, and he was the first to undertake the systematic study of Ancient Roman Culture. Between 1444-1446 he wrote the first archaeological monograph, entitled: *Rome Restored*. He also wrote *Rome Triumphant*, the study of ancient Roman culture, include section of religion, government, military organization, life and customs. There were also frequent comparisons with the customs and institutions of the author's own time which reflect the beginning of an archaeological point of view (Rowe, 1965: 11).

The significance of the Renaissance to the history of Anthropology as well as the history of Archaeology is that it created a "perspective distance" at which antiquity or anymore recent culture might be seen whole and observed with a respect that would make it an acceptable object of study.

The perspective of anthropology owes much to the experience of Europeans in the great voyages of discovery, but it did

not originate in the observation of contemporary differences. The Renaissance studied also the Classical antiquity, but only asked advice of the past in order to handle the problems of the present, and it was born in comparison. The enthusiasm of the Renaissance for Classical antiquity had the further effect of cracking the shell of ethnocentric prejudice which had traditionally isolated the men of the west. Notwithstanding, the Renaissance point of view about other cultures was the seed idea for both archaeology and anthropology. The conception of cultural difference in time (the absence of archaeology) was extended to the acceptance of contemporaneous cultural differences in geographic space (a primary tenet of Anthropology) (Willey and Sabloff, 1974: 12).

4. Archaeology after the Renaissance

a. Before the 19th century

After the Renaissance, archaeology as humanistic antiquarianism took two courses, local antiquaries and broad antiquaries. The local antiquaries course was followed by some scholars from Northern Europe, especially in England, France, and Scandinavia. Among of them are William Camden, John Aubrey, Edward, and William Stukeley (Daniel, 1967: 24-35).

William Camden (1551-1623) was first a master at Westminster School in England. He studied the antiquities and wrote *Britannia*, the first general guide to the antiques of Britain, in 1586. In 1600, in his new edition of the *Britannia*, he added to it illustrations of Roman coins and of Stonehenge, the first step toward real archaeological illustration. John Aubrey (1626-1697) was an antiquary full of delights of field work. He has the first person to bring Avebury and Stonehenge into a context of archaeology and prehistory. His *Monumenta Britannica* still lies unpublished in the Bodleian Library in Oxford.

Edward Lhwyd (1660-1708), was a friend of John Aubrey. He traveled extensively to Wales, Cornwall, Bas-Bretagne,

Ireland and Scotland, studying and recording natural history, languages, antiquities, customs, and published the first volume of *Archaeologia Britannica* in 1707. He had also published the first figured catalogue of fossils. In his travel to Ireland in 1699, he wrote an account of the archaeology and natural history of Celtic parts of the British Islands and France. He visited the great prehistoric tomb of New Grange, north of Dublin.

William Stukeley (1687-1765). Like many other antiquaries and proto archaeologists of the seventeenth and eighteenth century, William Stukeley used written sources to interpret the past. Like Lhwyd, he was an accurate field archaeologist and had made observations of basic archaeological character.

The other course was followed by Giovanni, Edward Daniel Clarke and such dilettanti. Giovanni Belzoni (1778-1823) who traveled to the Classical world and the Near East and brought the treasures of these lands back to rich patrons in northern Europe. He published his book in 1820 *Narrative of the Operation and Recent Discoveries within the Pyramids, temples, Tombs and excavations in Egypt and Nubia*. Edward Daniel Clarke (1769-1821) was Professor of mineralogy at University of Cambridge and Librarian to the University. He traveled to the Aegean and the Near East, and brought back a statue from Eleusis, Athens (Daniel, 1967: 42-45).

When Napoleon invaded Egypt in 1798 he transported with his army a large body of scholars, artists, antiquaries, and scientists. This event led to the work of men like Denon and Champollion who studied Egyptian antiquaries and hieroglyphs. He felt that a serious and organized approach to the study of the past through archaeology was beginning, and the antiquaries and dilettanti, the travelers and the tomb robbers, were soon to give way to professional archaeologist (Daniel, 1967: 45).

Other investigations that made advance in the development of archaeology came from the geologist and the scholars who were interested in the antiquity of man. In 1785 James Hutton in his book

Theory of Earth, pointed out that of stratification of rock was due not to floods and other supernatural calamities, but to processes still going on in seas and rivers and lakes. Hutton's reasoning was carried forward by William Smith "Strata Smith". By using fossils as evidence, he argued that the rock was much older than 6,000 years. It implies the reaction against the idea of Archbishop Ussher, in his conception about the Genesis, that the first man was created in 004 B.C.

In 1797, John Frere discovered several hand-axes and other implements of flint at Hoxne, in the country of Suffolk. It is important because those implements were found "in situ" according to their strata. Based on stratigraphy, John Frere argued that those remains dates from half million years ago. The succeeding investigations were carried out by Buckland and Father Mac Enery. Buckland, a geologist, excavated Goat's Hole Cave near Paviland in South Wales, and found skeleton of a young man associated with implements. These implements showed the similarity with the discoveries in the caves of Mendip Hills (Southwestern England). He did not believe that these implements came from, antediluvium. Father Mac Anery found some flint implements at Kent's cavern, in Devon and these implements associated with the remains of rhinoceros and other animal bones. He gave these remains to Buckland, and from these data, Buckland made conclusion that the implements belonged to ancient Britons and the animal bones showed the extinct animals.

2. Archaeology in the 19th. century

Originally, in the 19th. century, archaeology embraced the study of ancient history, in the meaning of the study of history or ancient cultures by archaeological techniques. The label prehistory was first coined by a French scholar named Tournal in 1833, but came into widespread use in the middle of the 19th. century to refer to the archaeology of the periods before literate history. Archaeology straddles many well established areas of academic inquiry, including anthro-

pology, history, philosophy, and the natural sciences. In this case archaeology can be suggested as a "discipline", using the scientific method of archeological research imply discipline, using the scientific method and detailed analysis in the laboratory. Even though an archaeologist studies the martial remains of man in the past, in the framework of anthropology, history, or other disciplines, archaeology it self is really a distinct discipline, combining a battery of field, laboratory, and quantitative research methods oriented toward the study of man in the past, using interpretative techniques and theoretical concepts that are specially designed for this task (Fagan, 1975: 6-7).

The growth of antiquities collection brought the problem of arrangement and classification, that led more directly to what can be called the first systematic archaeology. In 1819, J.C Thomsen from the National Museum in Copenhagen coined the "Three-Age" system. This system was predicated on the belief that the ancient inhabitants can be characterized by the use of stone, bronze, and iron implements. Thomsen believed that the classification of "three-age" system corresponded to a sequence of chronological defined periods, and to go on from the identification of stone, bronze, and iron materials to stylistic differences in weapon and tools that could be correlated with the three ages. His work was continued by his friend, J.J.A Worsae (1821-1885) who laid the basis of the chronological seriation from the material remains found in the burial site (Willey and Sabloff, 1974: 13).

In 1836-1837, the French scholar, Baucher de Perthes has made investigations at Somme Cannal and found flint artifacts in conjunction with bones in deep geological strata. His discoveries aroused a storm of opposition, both religious and scientific, however, the idea proved to be the beginning of palaeolithic archaeology.

By 1860, with the support of Sir John Evans and others, the scientific world has accepted Perthes discoveries. The dimension of time, which has begun to transform antiquarianism into archaeol

ogy with "three-age" system, was now seen in all implications for man's history and prehistory. Moreover, the presence of archaeological materials in different geological strata, introduced the vital concept of stratigraphy to the emerging archaeological discipline.

It's worth noting the statement by Charles Lyell in his "Principles of Geology" was very important to Darwin's conception in his *Origin of Species*. Lyell coined the principle of uniformitarianism and said: the central geological idea that strata could only be interpreted correctly by assuming that the agencies that formed them had operated at uniform rate and in a uniform way. Charles Darwin adopted this idea in his book *The Origin of Species* but he still refused to discuss the relationship of evolution to man. Eight years after T.H. Huxley's *Evidence as to Man's Place in Nature*, Darwin in his *Descent of Man* talked about the relation between man and general evolutionary theory. There was the new way of thinking about uniformitarianism and evolution.

From biological evolution the idea of progress was extended to the history of human societies and cultures; and two of the founders of anthropology, E.B. Tylor (1832-1917) and L.H. Morgan (1818-1881) saw in this principle of cultural evo-

lution and in the findings of archaeology with its Three-Age system and its demonstrated great antiquity of man, the data from which to construct a model of the human social and cultural past. It indicates the emergence of archaeology as a science.

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