

THE IDEA OF EXPERIMENTAL ARCHEOLOGY
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Anyone who has collected Indian arrowheads or seen ancient, chipped stone artifacts, in museum collections invariably finds himself wondering how these stone tools were made, and how and why they were used. This is particularly true when they are well made. Stone tools are so remote from the existence of today's average American that it takes an imaginative effort to picture a person making and using these implements. Most efforts of this sort fail because there is so little recorded about their fabrication and function. In truth, they boggle the mind.

For some, stone tools of ancient man are merely curios. But to archeologists, anthropologists, and students of lithic technology they represent fossilized human behavior. Archeologists have come to depend heavily upon these surviving stone tools for their interpretations of ancient cultures.

When considered in terms of the whole span of human culture-history, the discovery and use of metals in a relatively recent and rapid development, having occurred within the last 10-000 years along with such other major developments as agriculture and urban life. Since present evidence indicates that tool-using man has existed for approximately two million years, this means that stone, tools of wood, and bone have predominated for approximately 99.5 per cent of human history--and, of course, of these artifacts it is mainly those of stone that have survived to be studied and examined by scholars. Even after the invention and spread of metals, there remained some isolated societies that continued to make and use stone tools. A few of

these, like the Australian Desert Aborigines and certain groups of New Guinea natives, still use stone tools today. Thus, stone tools provide archeologists with one of the most important bodies of evidence of human behavior over most of the span of human culture-history.

Scholars today have three main avenues open to them for finding out how ancient stone tools were manufactured and used:

1) Stratigraphic excavation. This remains the most orthodox archeological approach, and it is still one of the best. Through careful, systematic excavations, archeologists often find stone tools and waste materials in association with dwellings, campsites, butchered animal bones, or other features that give clues to their manufacture and function. For example; there was the 1926 discovery at Folsom, New Mexico, of the now-famous Folsom fluted point. This is a distinctive type of stone projectile point (a variety with a channel flake removed longitudinally from each face), which was found embedded among the fossilized bones of extinct bison (*Bison Antiquus*). The main point to consider here, however, is that archeological excavations necessarily destroy the site where they are carried out. It is always incumbent upon the archeologist to keep detailed records in the form of notes, photographs, and drawings of each layer he uncovers, since he will destroy the site as he proceeds to dig deeper layers out.

2) Living archeology. Sometimes called ethno-archeology, this approach involves the study of contemporary societies where stone tools are still manufactured and used. It also includes research into historic sources that give early accounts of people who made and used stone artifacts. Unfortunately, references in historic documents about this sort of behavior are limited. Even more important, the impact of Western technology throughout the world has

been so great during the nineteenth and twentieth centuries that there are few traditional societies anywhere that still do this, most of them having long since abandoned stone tools for metal ones. This line of research has the quality of a race against time, as scholars try to find and study these groups before they completely abandon the art of stone chipping.

3) Experimental archeology. Recent work has shown that controlled experimentation can often provide information about the use and manufacture of stone tools that is simply not available in any other way. By attempting to make exact counterparts of known types of ancient stone artifacts, the experimenter, through both his successes and failures in the laboratory, reconstructs the possible way in which such artifacts were made/ By using these artifacts in a variety of ways and with a variety of materials (again, always under controlled conditions) and by examining the results, usually under a microscope, he can infer the possible ways in which the ancient tools were used.

Experimental stone-working archeology has proved useful, for it allows the experimenter to view the results of applying force to flint-like materials. He can then analyze and evaluate the character of both the flake and flake scar whether made by intent or miscalculation.

Experimental flint knapping archeology also demonstrates the importance of recovering the flaking debris that results from the manufacturing stages. Then the flakes may be related to the stages of fabrication from inception to completion; or from the rough stone to the completed product.

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