



The Archaeologist at work

How Science
Deciphers Man's Past

By
CLARK WISSLER



THE AMERICAN MUSEUM OF NATURAL HISTORY

MAN AND NATURE PUBLICATIONS

The Archaeologist at Work

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HOW SCIENCE DECIPHERS

MAN'S PAST

✦ A 3400-year-old safety pin, of bronze



The Archaeologist's Articles of Faith

A. That wherever man disturbs the earth as laid down by nature, the scar remains forever, or at least until nature re-deposits that portion of the earth's surface. Nature alone can wipe the slate clean, ready to record the next series of human events.

B. That when a group of people lives for a time upon the same spot, a deposit of refuse or debris accumulates, mostly ashes and bones, among which are scattered lost and discarded useful objects. If this deposit has not been disturbed unduly, the oldest objects will lie near the bottom, the latest at the top. If the original community abandons the site, nature spreads a coat of soil over all, and when another community makes the same site its home, a second layer of telltale refuse is laid down upon this black-soil cover,

and so on, ad infinitum.

C. If the same people live on the same spot for centuries, the tools and other products of their workmanship—artifacts in the archaeologist's language—will show significant changes from the bottom of the refuse upward. Especially is this evident among those which are ornamented. The idea that we alone of all peoples and ages progress, or change, is pure conceit. It is the universality of change in the ways of human living which makes archaeology possible; these changes register the march of time.

D. Human communities are never isolated for long. They watch their neighbors and imitate them. So the order of artifacts in one refuse heap can be checked by another in a near-by site.

A rapid trip through the story of archaeology reveals how the Sherlock Holmeses of science have developed methods for solving the greatest mystery story of all

By CLARK WISSLER

*Curator Emeritus, Anthropology,
American Museum of Natural History*

A SKILLED archaeologist is the Sherlock Holmes of anthropology. The uncanny use he can make of faint traces in the earth where unknown human beings once lived is more fascinating than detective fiction. We believe you will enjoy looking in upon archaeologists at work.

The archaeologist has confidence in his methods. Some of his basic articles of faith are given at left.

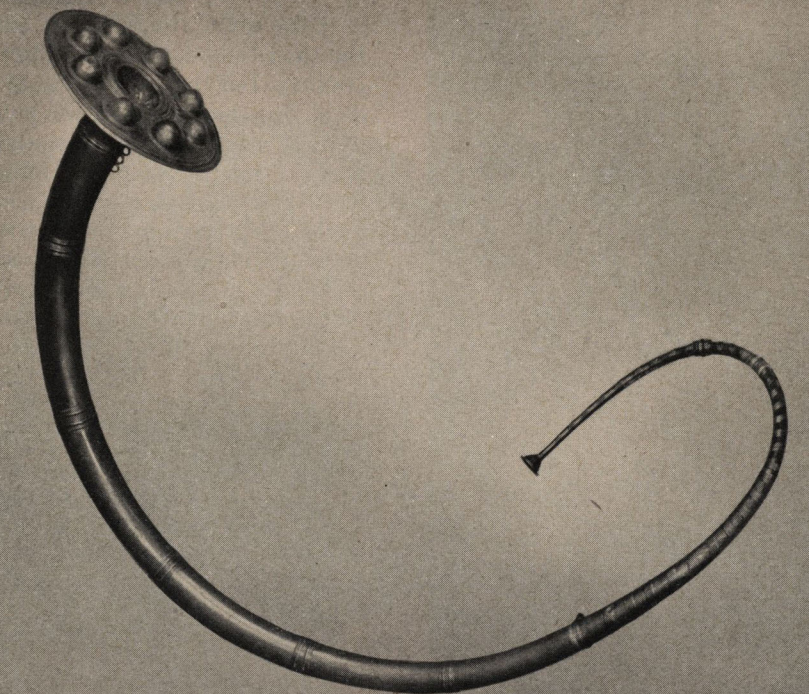
With these principles in mind, the archaeologist faces his job, which is to discover what types of community living have existed in the world, where they existed, and in what time order. If the reader can keep these simple statements in mind he should have little difficulty in understanding the remainder of this article and in interpreting the pictures.

When Archaeology Became a Science

ABOUT 1830, C. J. Thomsen, curator in a Danish museum, was busily receiving and cataloguing curious objects turned in by laborers digging peat for fuel. These objects were of iron, bronze, and stone. There were axes of these three substances, shields of bronze, and swords of both iron and bronze, not to mention hundreds of small objects. In course of time, Thomsen began to wonder which of these objects were invented first. He knew that peat deposits were built up slowly from the bottoms of ponds and swamps.

One day it occurred to him that the depths of the objects found in the peat should tell the story. After keeping such records for a few years he had the answer: iron above, bronze objects next below, stone near the bottom. He published a paper about as long as this article telling how he knew once and for all that the historic age of iron in Europe followed a prehistoric age of bronze, and that the latter was preceded by an age of stone. On that day scientific archaeology was born. Armed with such a logical tool of crystal truth,

the archaeologist could revolutionize the knowledge of man and the way of thinking about him.



A. M. N. H. Photo

THE MOST PRIZED Bronze Age relics are large bronze trumpets in such perfect condition that folk music can be played upon them. This one is in the American Museum of Natural History

✦ CROSS SECTION of a peat bed showing relative positions of objects belonging to the Iron, Bronze, and Stone Ages of Denmark. This principle of stratigraphy is the scientific basis of archaeology, first demonstrated by C. J. Thomsen in 1836

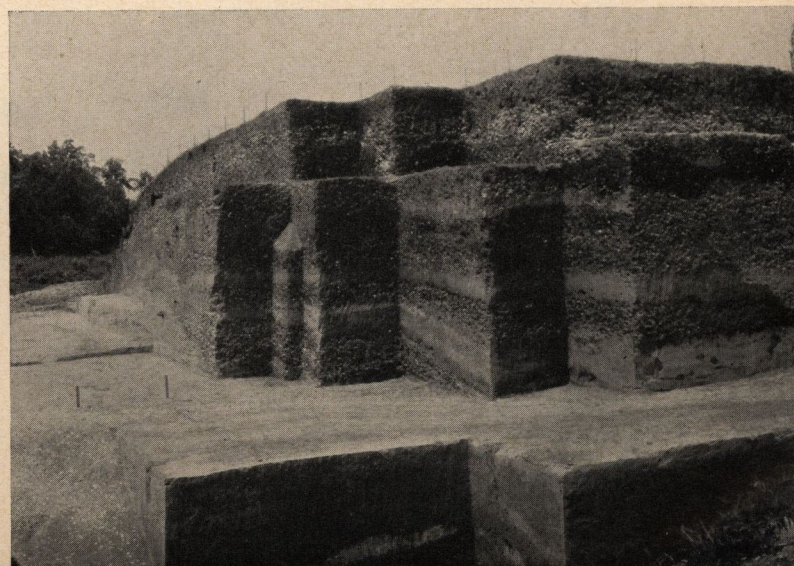
✦ SECTIONS IN A SHELL HEAP showing alternate layers of shell refuse and sand. The man-made shell layers indicate time sequence from below upward. (Pickwick Basin, Tennessee River, Ala., T.V.A. Project, excavated by Major W.S. Webb)

PRESENT FLOOR

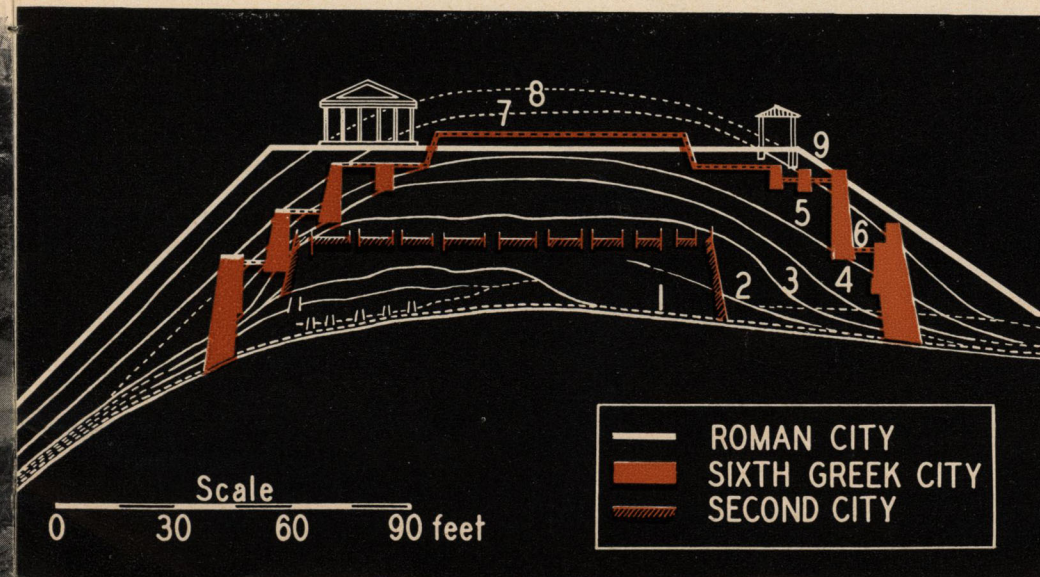
IRON TOOLS

BRONZE TOOLS

STONE TOOLS



✦ THE NINE CITIES OF TROY excavated by Schlieman in 1870-1875, the first use of scientific methods in a large site. His Sixth City proved to be Homer's Troy, 1500 B. C. See, *Troy, a Study of Homeric Geography*, by Walter Leaf. Also, *The Discovery of Man*, by Stanley Casson



Pottery as a Time Marker

BEFORE 1912 many museums and amateur collectors had ransacked ruins of cliff-houses and prehistoric Pueblo Indians in New Mexico and Arizona, because they were rich in beautiful pottery. The burning question was, when were these ruined structures built? The professors who lectured on the archaeology of the Old World were enthused by Thomsen's discovery of time sequence—Stone Age, Bronze Age, Iron Age—but here in New Mexico were neither bronze nor iron—merely things made of wood, bone, shell, stone, and pottery. The most conspicuous was pottery. In the neighborhood of every ruin one could see bits of broken pottery upon the ground—potsherds of many colors, all mixed together in profusion. Most of these sherds were of



A. M. N. H. Photo

POTSHERDS from a room in the Pueblo Ruin at Aztec, New Mexico. Over 2700 sherds were found in the debris filling this one room. Sorting and assembling revealed eight nearly complete vessels and parts of 423 others from which restoration could be made. The ruin was excavated by Earl H. Morris for the American Museum of Natural History

➤ ABOUT 40 POTSHERDS from excavations at Sambayequ, Peru, appeared to belong to the same vessel. After a study of these and a number of broken vessels from the same site, a restoration was made in the American Museum of Natural History by Mr. Paul Richard, as shown at right.

The procedure was to place each sherd in its proper position according to shape and decoration. The sherds making contact at any point were fastened with "Duco." The empty spaces were filled in with plaster, which appears in the photograph as the lighter areas

thumbnail size and so numerous that a quart could be gathered in a few minutes.

There was a young curator in the American Museum who thought there should be some way to find the answer as to the age of the ruins. He consulted the then famous archaeologists of the country, but they said it could not be done, that they had tried and failed. Yet his faith was stubborn. He spent several seasons going about among these ruins. At first, he dug industriously within the walls of promising ruins, where he often found fine unbroken pots such as collectors prized, but the answer was not there. Then he noticed that immediately outside each ruin there was always a pile of ashes where the tidy

prehistoric housekeepers dumped the sweepings from the family hearth, including other trash and especially potsherds.

This young curator was N. C. Nelson, now the Museum's distinguished senior archaeologist. We suspect that by this time the reader has guessed what Nelson had in mind; he believed that if he could find even a small section of an ash heap undisturbed by his pot hunting predecessors, the answer would be forthcoming. So Nelson went up and down the country picking up samples of the different kinds of sherds scattered round about a ruin, and doing a careful job of digging wherever he found the proper spot. In 1916 he published a short paper containing a time



A. M. N. H. Photo

sequence scheme for five types of pottery common to a large group of ruins in New Mexico. The consistent position of each pottery type in refuse heaps made the time sequence certain.

The effect of Nelson's paper can be easily imagined. It gave scientific archaeology in America a new birth. The younger archaeologists in the museums of the country were enthusiastic. What they saw was a new research tool, which if carefully used, could not fail. Ingenious guesses need not be regarded; let the potsherds speak for themselves. More and more field work would eventually solve the problem. Arizona and New Mexico soon became the main field for archaeological research; 20 years after Nelson's discovery of the basic scientific method an average of 40 archaeologists were making yearly excursions to that area.

In 1914 the American Museum initiated the use of a supplementary method for dating ruins. Professor A. E. Douglass, University of Arizona, was using growth rings of the Big Trees of California and other large trees to date changes in the annual rainfall. When rainfall is abundant trees grow thick rings, in dry years, thin rings. Many of the ruins in Arizona and New Mexico contain large ceiling and floor beams, sections from the trunks of trees. It occurred to the writer that if these could be dated by Douglass, the ruins could be dated. Douglass thought he could do it, if sample cuttings from logs in ruins could be sent to him. Earl H. Morris, then a staff archaeologist for the American Museum, was requested to collect the samples. The method worked from the start. Today the actual cutting years are known for beams in several hundred different ruins. The oldest so far is a small structure near Flagstaff, Arizona, dated 217 A.D.

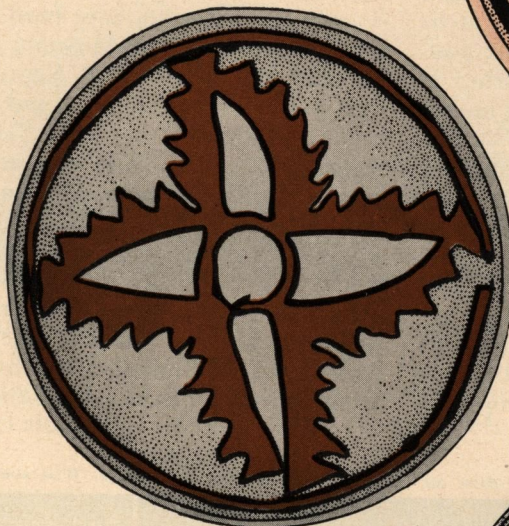
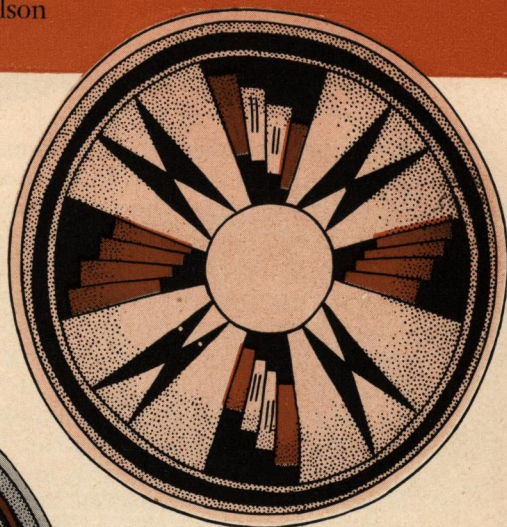
The tree-ring method did not antiquate the value of potsherds, because the timbers in many ruins have decayed. Further, once tree-ring dates are found for a type of pottery, they can be transferred to the records secured by excavation. Finally, where tree-ring dates were to be had, it was observed that the durations for many pottery styles ranged from 75 to 150 years. This in turn gave a check upon time estimates in places where no wood survived. So it is easy to understand why archaeologists pay so much attention to potsherds. They aptly speak of them as "the fossils of culture."

Five Culture Periods in the Pottery of New Mexico.

N. C. Nelson

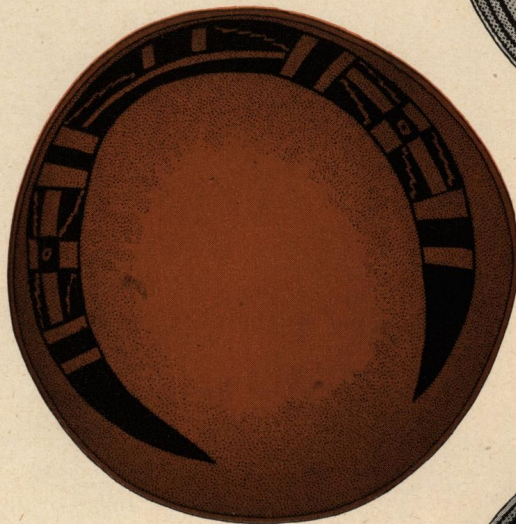
In this instance the key to chronology was discovered to lie in color and surface finish, not in shape or design.

→ Modern Ware. Black-on-pink and black-and-red-on-pink. 1680-1850



← Historic Two-color Glazed Ware. Brown or green on either gray, red, or yellow. 1450-1680

→ Three-color Glazed and Painted Ware. Black-glaze-and-red-paint on either gray, yellow, pink, or red. (?) - 1450



← Two-color Glazed Ware. Black or brown on either red, yellow, or gray. Date not known

→ Two- and Three-color Painted Ware. Black on either white or red, and black-and-white on red. Date not known



Caves and Shell Heaps

MOST people believe the first human beings were cave dwellers. This is more fanciful than true, but there is no denying that archaeology has learned a lot by the study of rock shelters and the entrances to caves, for the reason that such ready-made shelters were indestructible and so were occupied off and on by whatever people happened to be around. They were ideal defense positions against unfavorable weather as well as against animal and human enemies. Roomy rock and cave shelters were doubtless fought over time and again. Today archaeologists seek them because they contain precious beds of refuse, accumulated in orderly sequence and conserved, from which the past can be reconstructed.

Many of these shelters had such high ceilings that there was room to build up deep deposits of refuse. In Europe, for

example, there are one or more cave shelters, the refuse in which reveals in time order all the main periods in the Old Stone Age, the New Stone Age, the Bronze Age, and the Iron Age. Rock and cave shelters are less conspicuous in America, but when found are highly prized by archaeologists. Several classic studies have been published by the American Museum, as for example Mammoth Cave, Kentucky, by Curator Nelson in 1915, and such caves as Cerro Sota and Fell's Cavern, Straits of Magellan, Chile, excavated in 1937 by Assistant Curator Junius Bird and his capable wife.

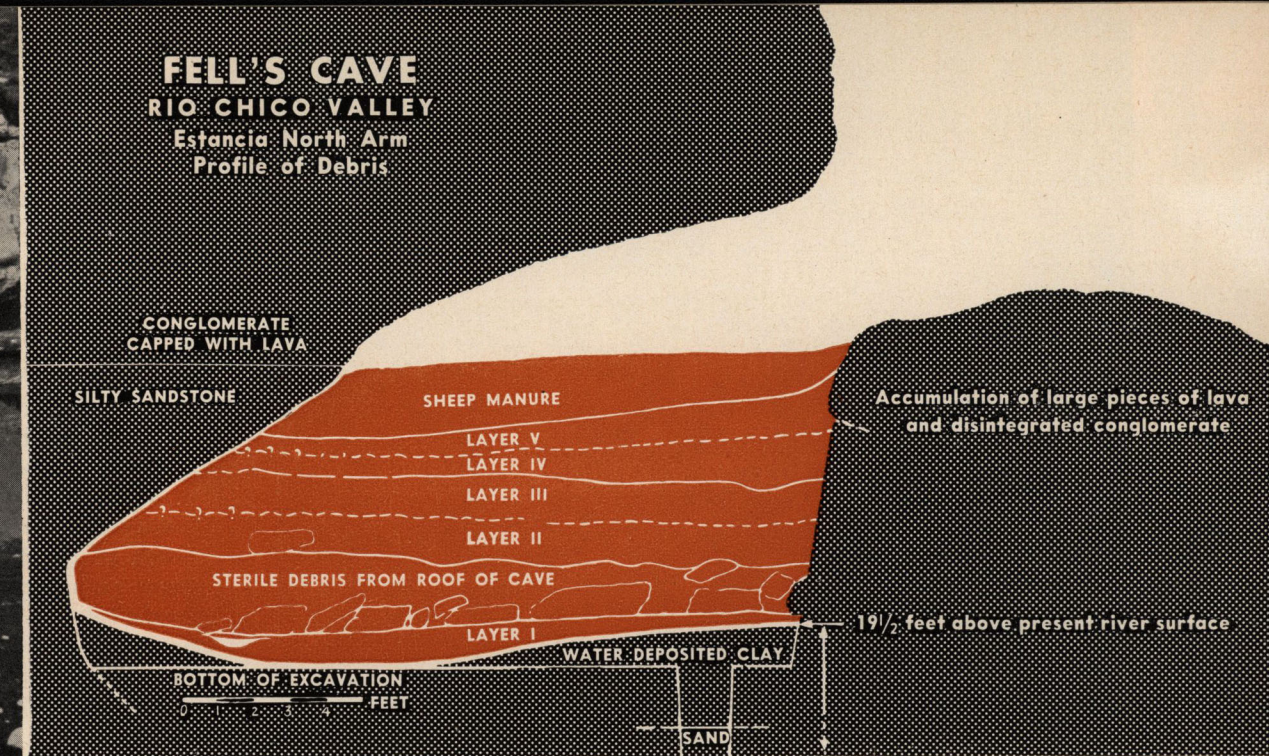
Yet if America does not lead the world in cave deposits, it does possess a grand series of shell heaps. These refuse heaps or kitchen middens line our coasts from Newfoundland southward, around the West Indies, down the east

coast of South America to Cape Horn, thence up the Pacific side to Panama and on northward to the Arctic Circle and beyond. Shell heaps are not unknown inland. They are found, for example, along the Tennessee and the Ohio rivers, in fact, wherever edible fresh-water shellfish are abundant. Some shell heaps, or shell mounds, are of amazing size. The largest so far reported in the United States is about 30 feet high and covers 35 acres.

The reader need not be told how such shell mounds originate; they accumulate around the primitive cabins of shellfish eaters, together with bones, pottery, and discarded implements. As the level of refuse rises, new cabins will be built on the higher levels, and so on. Excavations in a large shell mound near Oak Hill, Florida, by Curator Nelson, showed that the Indians who started the mound did not make pottery, but eventually crude pottery does appear, which passes through several successive styles, culminating in ornate pottery.

It is expected that an archaeologist will save samples of the shells and bones for identification, to determine which of the animals are still living, which extinct. But for time sequences the chief dependence is upon the relative positions of the artifacts found in the refuse.

HAD EUROPEAN CAVE MAN lived in the same shelter for 50,000 years the debris would tell this story. Cultural changes are the archaeologist's key

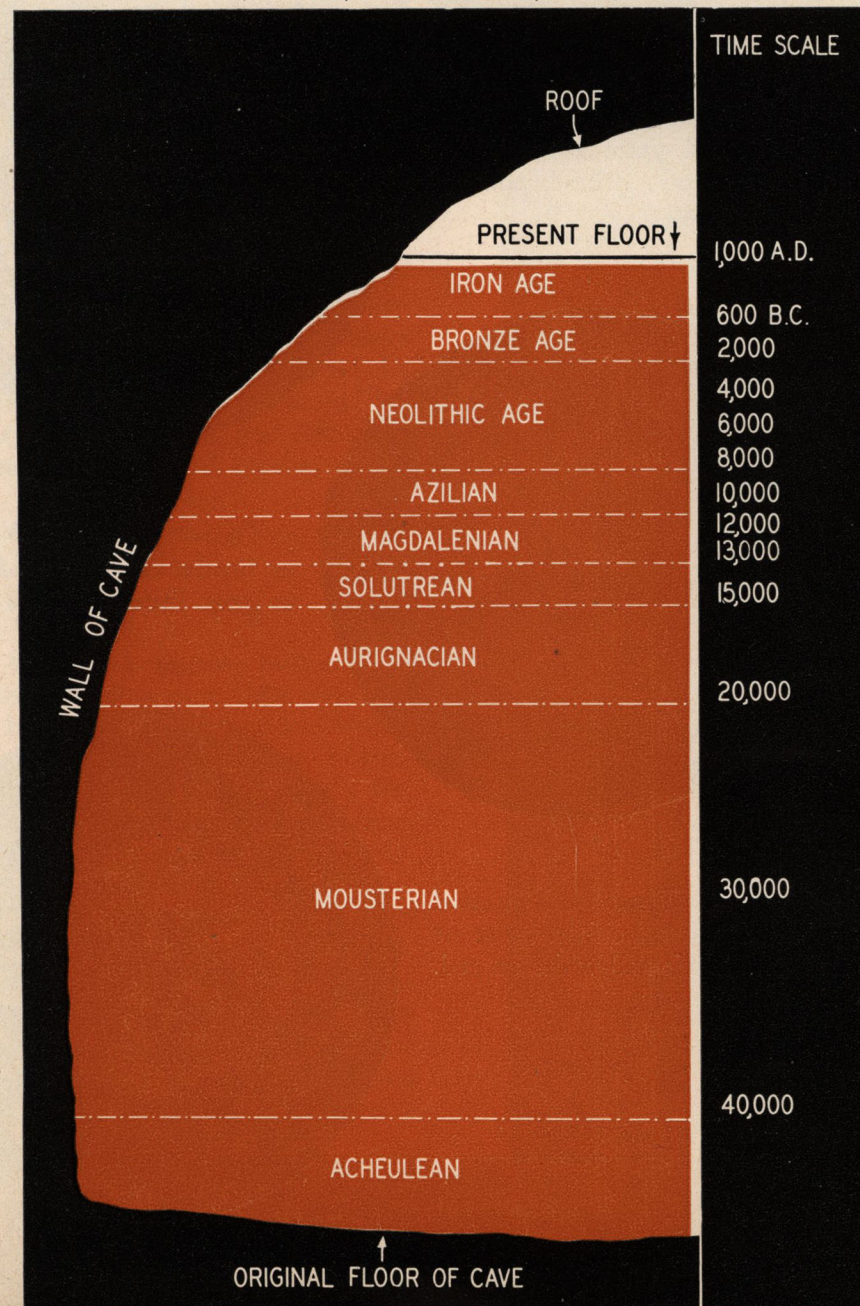


A. M. N. H. Photo

↑ A CAVE IN SOUTHERN CHILE excavated by Junius and Margaret Bird, American Museum of Natural History. In the last layer in this cave were found artifacts and human bones associated with the bones of extinct animals

↑ FIVE PRE-COLUMBIAN PERIODS of occupation revealed in a Chilean cave. In Layer I were bones of the extinct wild horse and the sloth, the first sure evidence that man lived in South America before these animals disappeared

After Sir Arthur Keith; Courtesy William H. Wise and Co.



↓ NOT A CAVE but a cross section of an Ohio mound under excavation. Several burials have been exposed by clearing of the mound floor. They were covered with log tombs, the decay of which caused a settling in the original fill

Ohio State Museum photo





Chicago University Field Station

↑ WORKING OUT A SKELETON is an exacting test of skill. Tiny trowels, awls of small sizes, fine brushes, and a hand bellows are the important tools. Shellac or other fixing solutions should be at hand

Why Burials Are Important

ARCHAEOLOGISTS are fond of digging up the prehistoric dead. People who do not like archaeologists often show their contempt by calling them "grave robbers." Two important kinds of information come from graves. The skeletons tell us much about the people who lived at the time and place, and the man-made objects in the burial give information as to their mode of life. If time sequences are known for some of these objects, a given skeleton can be dated relatively. The better preserved skeletons can be distinguished as male and female; even the age at death can be determined within an average error of five years. The most thoroughly excavated prehistoric cemetery in America was connected with the Pecos ruins in New Mexico. More than 1800 skeletons were excavated. The ages at death were determined for a large number, the details of which cannot be given here, but we note that while a few of these Pecos Indians lived longer than 80 years, only

20 out of every 100 reached the age of 55 years. In a modern white community 50 out of every hundred live to be 55 years of age or more.

The successful removal of a skeleton often calls for unusual skill and an inordinate expenditure of time and patience. In damp ground bones may be so soft as to defy movement until hardened by drying or by special treatment with fixing solutions. An inexperienced digger may tear away a skeleton without being aware of its presence. Since the teeth are less likely to take on the color of the damp soil, a bungling amateur may report that he found no bones, merely a few teeth.

Burial is an old, old custom. The most important invention is fire, but archaeology shows that burial is almost as old and that with it came the custom of placing tools, weapons, and food in the grave. It is usual to infer from this that the belief in a life after death is still older.

Digging in a Village

AS AN example of the right way to work in a village site we have selected excavations by the Rochester Museum, Rochester, New York, directed by Dr. William A. Ritchie. Three field photographs are reproduced by permission of the author. The site of a former prehistoric village was located near the town of Brewerton at the eastern end of Oneida Lake, New York State. Refuse and burials resulting from this village covered a flat about three acres in extent. Eight trenches were used in exploratory excavations, and two "test blocks" were carefully worked out. Some 1700 recognizable stone artifacts were uncovered. There was some pottery but it was all on or near the surface, so it is clear that the first generations to occupy the site did not make pottery. Further, they lived there long enough to make some changes in the kinds of stone implements they used.

The scientific objective

The reader may wonder why all this trouble. Doctor Ritchie has specialized in the prehistoric cultures of New York State. In the United States archaeologists identify cultures and classify them systematically. Doctor Ritchie saw in certain sites from the same part of the State what he suspected were traits of a new culture. Objects picked up from the surface made him hopeful that this site at Brewerton might qualify as a type for such a new culture. His excavations indicated that he was on the right track. In the high-sounding language of the profession, he named it the Robinson site, or component, in the Brewerton Focus, Laurentian Aspect, Northeastern Phase, Woodland Pattern. If you had any doubts as to archaeology being a science, this should silence you. Should you wish to know what all this means, you must consult the technical books on the subject; it is as intelligible to an archaeologist as (robin) *Turdus*, syn. *Merula migratorius* is supposed to be to an ornithologist. Doctor Ritchie's achievement is about equivalent not merely to the discovery of a new species but a new genus as well.

Incidentally your curiosity may be appeased by outlining the standard scheme of archaeological classification, as:

Component (Site): Associated complexes of artifacts found in a village site or in a camp site.

Focus: A group of components or sites which approach identity in their dominant types of artifacts.

Aspect: A group of foci with important similarities.

Phase: A group of aspects with fundamental similarities.

Pattern: A few artifact types, widely distributed, common to a large number of components.

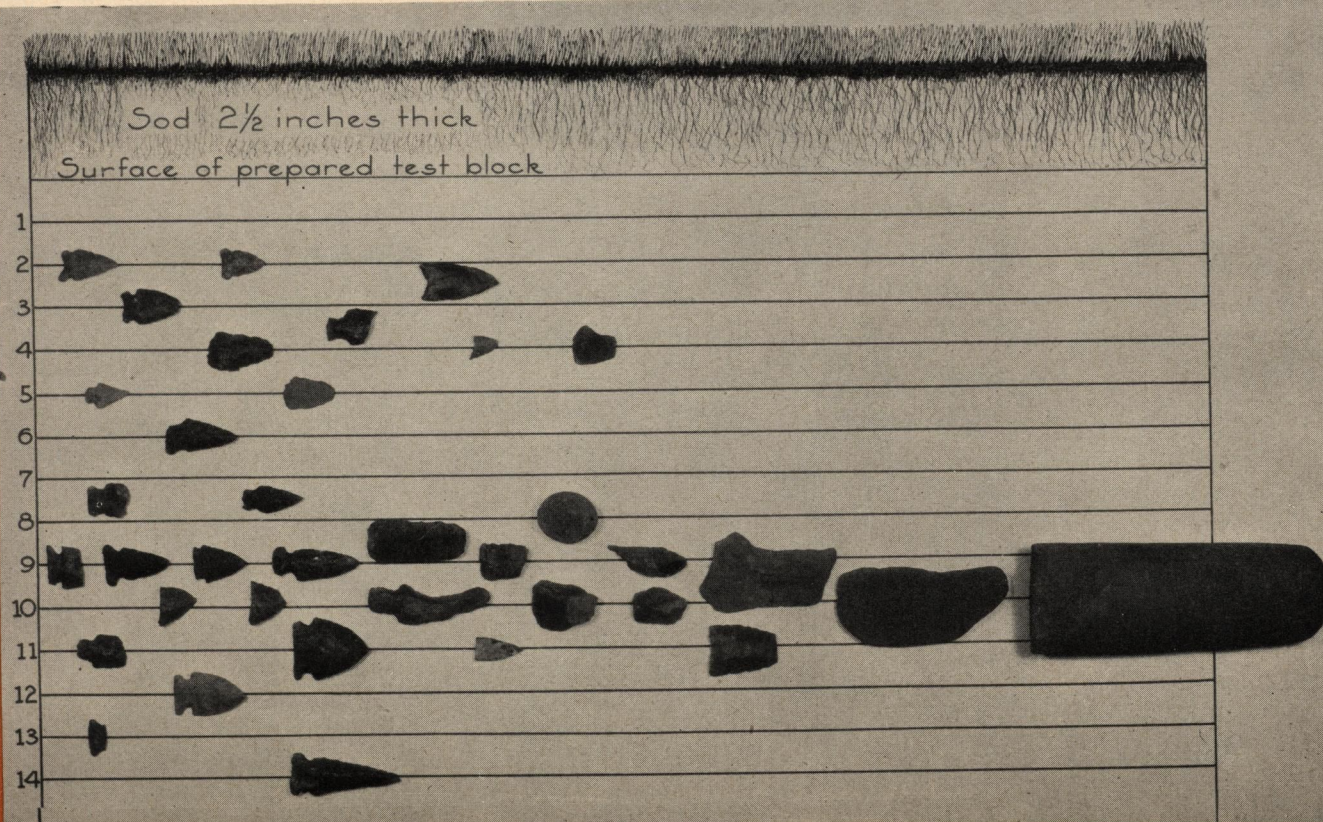
(Above, right) TEST BLOCK No. 1 has been cut around for careful excavation. The sod has been removed and stakes set to guide the excavators

→ REMOVING THE EARTH in horizontal layers. Holes at the side mark storage pits beneath the village refuse

↓ WHEN ALL ARTIFACTS were arranged in order, it was clear that most large projectile points lay below the ten-inch level, most small points above. Similar differences for other artifacts were noted, showing the general time sequence in culture during the period of occupation. Pottery occurred on the surface only



Photographs by courtesy of the Rochester Museum





Post Holes

↑ POST HOLES reveal the layout of houses, defense palisades, scaffolds, etc. To overlook them when digging is inexcusable. With practice they are easily dissected out. In this instance there seem to have been two successive houses on the same site

↓ BY SLICING down below the original house floor the depth and direction of the post holes can be shown. The parallel lines have been marked according to the intersecting lines on a plan of the site, for ease in reading the photograph

Chicago University Field Station

Major W. S. Webb



Stakes

→ THE POSITIONS of all objects uncovered are plotted on the base map in relation to stakes previously driven into the ground. Exploration of a burial ground begins with the digging of trial trenches, usually at right angles, as at right. Test blocks are then selected for thorough excavation. In this instance the burials were in a part of the accumulated village refuse, probably because graves were easily dug therein

→ THE TRENCH at this stage shows burials partly worked out. A careful record will be kept as the material is removed and studied. This is the same site as above on Seven Mile Island, Tennessee River, worked under the T. V. A. Archaeological Project by Major W. S. Webb, Director, 1936-38

→ IN THE REFUSE of this village site there were many pits. The archaeologists cut around these so as to leave the original blocks for dissection and study. Some pits were lined with clay but were found filled with loam containing a few artifacts of stone, copper, and galena. This is at Pickwick Basin, Tennessee; Major W.S. Webb, Director

→ VILLAGE SITES are explored by removing the debris down to the original hard surface of the ground. The material is carefully peeled off in thin horizontal layers. For the most part small trowels are used. (Chicago University Field Station)



1 ARCHAEOLOGISTS must be patient, industrious, and resourceful. Major W. S. Webb's trenches and camp were flooded one night. Records were damaged and equipment lost, causing delay and extra work. (Tennessee River T. V. A. Project)

2 MRS. JUNIUS BIRD on shift at Palli Aike cave in Chile. Dry caves preserve perishable materials, but the fine powdered dust rises with every step, and masks must be worn. As the debris is removed it should be screened to save tiny objects

3 MR. AND MRS. BIRD found peace-time gasoline shortages in southern Chile an aggravation. The expedition Ford responded to both wind and man power, but ultimately a yoke of plodding, time-consuming oxen was found the best solution

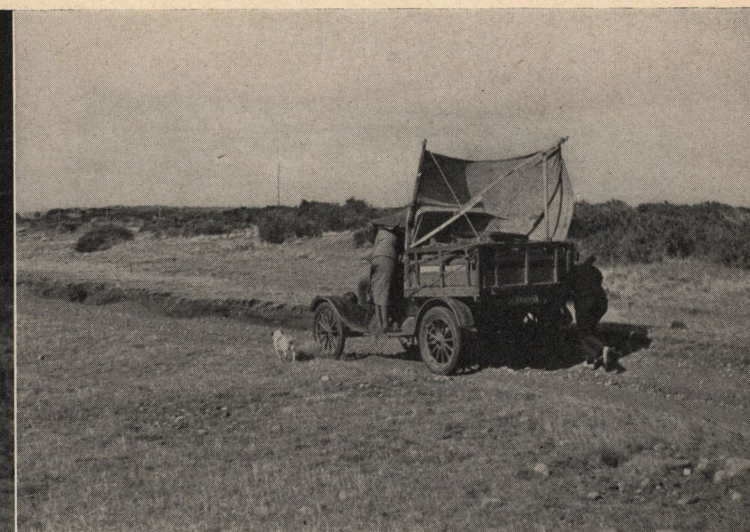


1



A. M. N. H. Photo

2



A. M. N. H. Photo

3

→ ARCHAEOLOGY can recover lost history. Jamestown, Virginia, was settled in 1607, but the town was destroyed in 1698. Recent excavations by an archaeologist have given new information. Foundations of forgotten houses with cellars filled with debris were uncovered. The streets of the old town were traced. (Archaeologist, Jean C. Harrington, National Park Service)



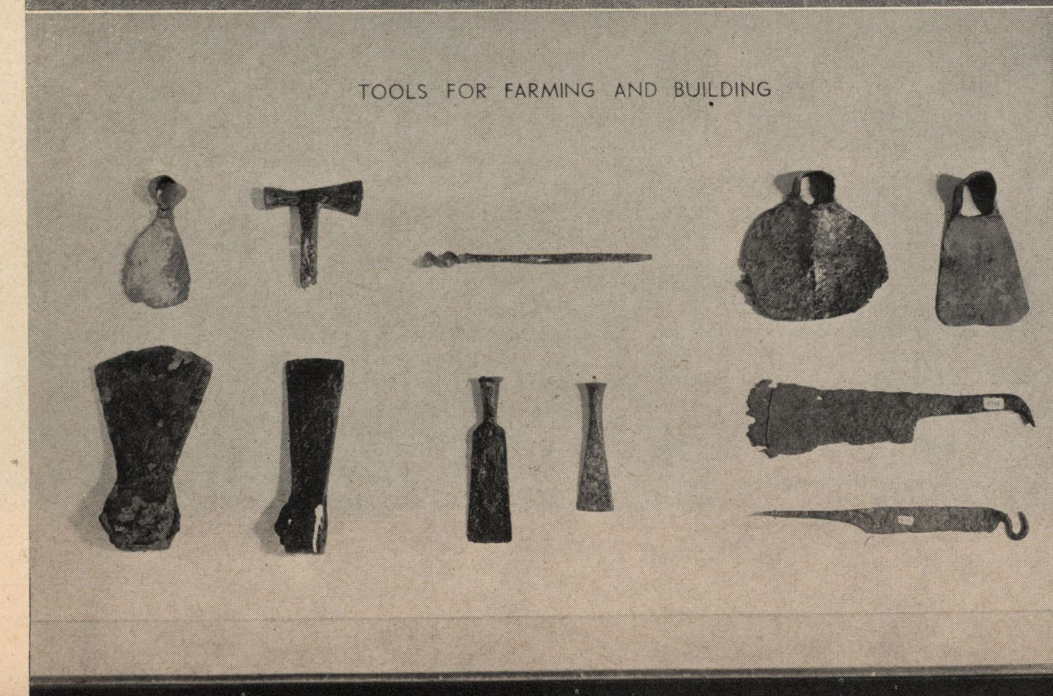
→ THOUSANDS OF POT-SHERDS and objects of glass, iron, and stone were uncovered. These were cleaned and repaired in the laboratory at Jamestown. Most of the objects were brought from England between 1607 and 1698, so this dates them, even though their history in England has been lost



← TYPICAL OBJECTS from excavations at the site of Jamestown. The number and variety of glass wine and rum bottles is impressive. Household pottery is abundant. Clay tobacco pipes of many styles were found. Some fine decorated tiles probably came from Holland

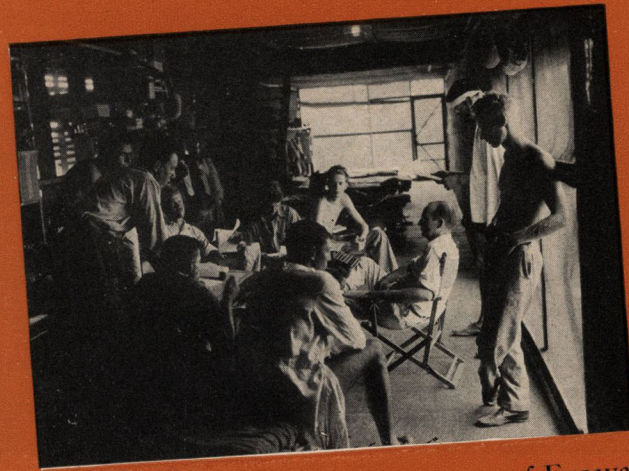
EQUALLY INTERESTING are the objects of iron and steel (*at bottom*). The National Park Service has used archaeological methods in St. Augustine, Florida, Roanoke Island, North Carolina, and many other historic sites. In Canada archaeologists have found the correct locations for a number of old fur trading posts. Recently archaeologists from Harvard began excavations in Plymouth, Massachusetts. Obviously the future will see our own history greatly enriched by archaeological research

TOOLS FOR FARMING AND BUILDING



National Park Service Photos

Step By Step



1 **PLANNING THE PROJECT:** the Director of Excavations and graduate students in conference, Chicago University Field Station. After a careful examination of a site a detailed plan for its excavation must be made. A temporary building may be erected as a field laboratory, where drawings can be made, notes and photographs filed, conferences held, etc.



Major W. S. Webb

2 **A VIEW OF THE SITE:** two mounds before excavation. If a mound has not been cultivated or otherwise greatly disturbed, it will be covered by trees and underbrush. This coverage must be cleared away before excavations begin



Chicago University Field Station

3 **THE SURVEY.** Before digging, a survey must be made to establish the horizontal and vertical planes needed to record the positions of all objects found. Meanwhile, clearing of the surface may be under way

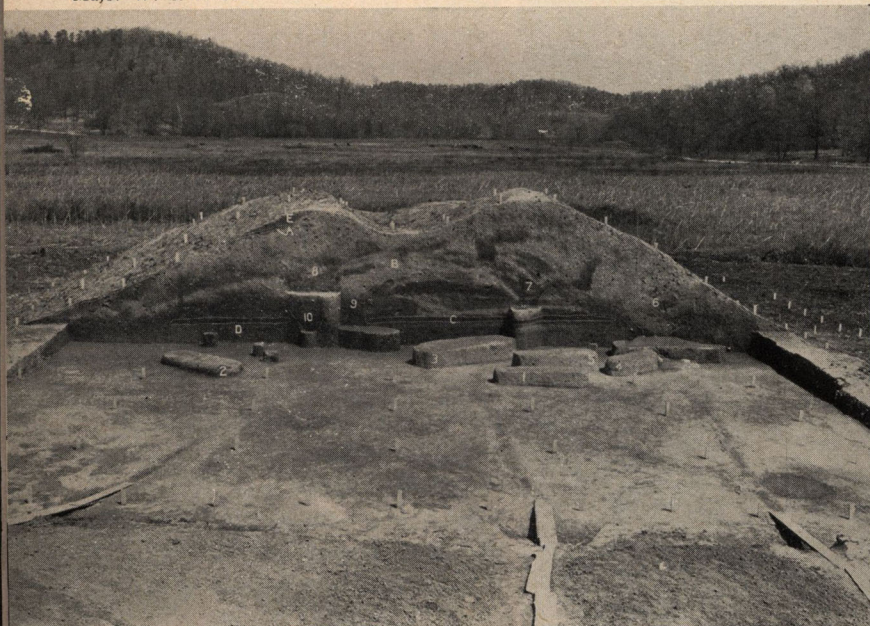


Major W. S. Webb

4 **THE BASE PLAN** of the mound is divided into squares marked by vertical stakes. These are driven down as excavation proceeds. Usually each stake is numbered to assist in recording the objects found

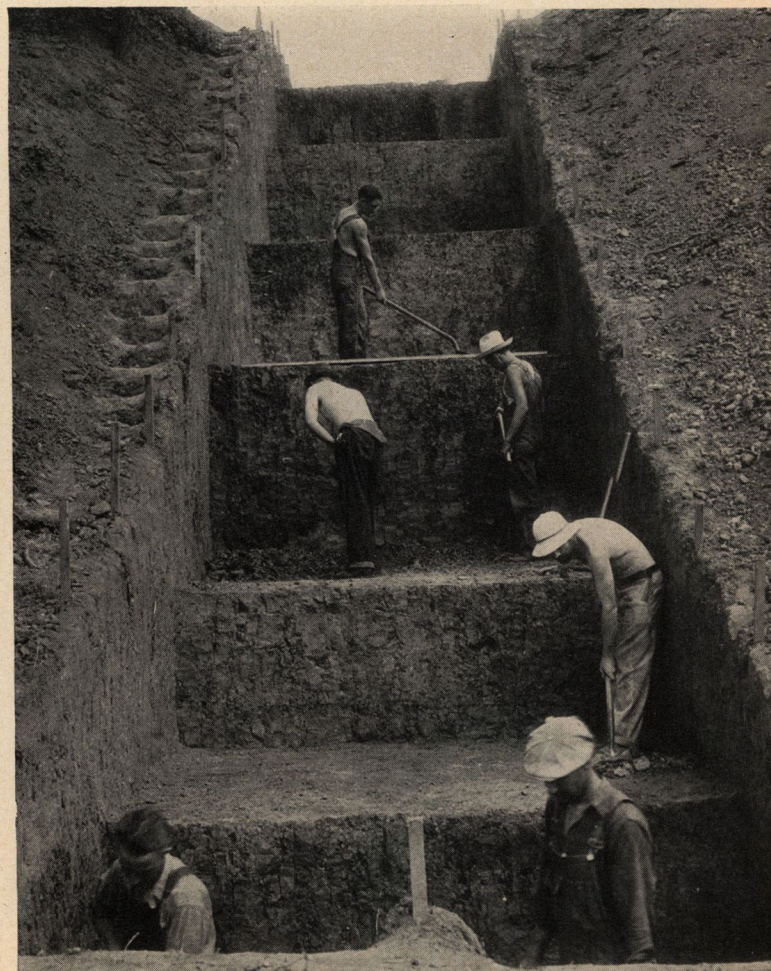
5 **EXCAVATION UNDER WAY:** a view showing a cross section of a mound. The blocks of earth contain burials to be worked out later. The base of the mound is shown in the foreground

Major W. S. Webb



6 **AN ALTERNATIVE METHOD:** step-trenching a mound instead of beginning at the base. The planes defined in the survey plan must be followed to record objects found. Note the stakes

Chicago University photo



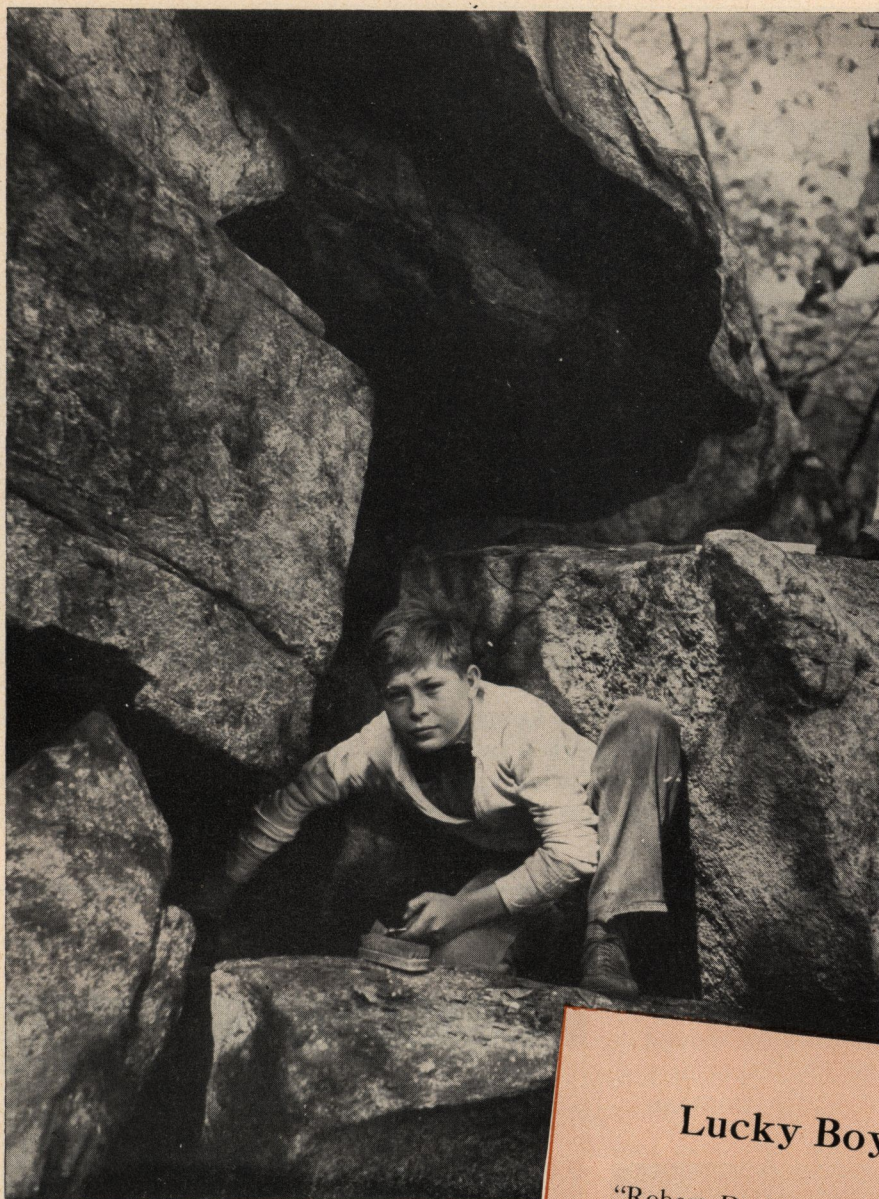
7 **THE MOUND CLEARED AWAY.** The original floor of the mound usually approximates the basal horizontal plane. The stakes, now at a much lower level, are still in their original relative positions

Chicago University Field Station photos



8 **CLEANING THE SPECIMENS:** students of archaeology washing potsherds before assembling them in their original order as excavated for determining time sequences





Trailside Museum photo

What to Do When You Discover A New Site

IN SOME of the pictures you may note post holes which have been cleaned out to show the positions and sizes of the posts originally standing there. These holes tell us something about the buildings once occupying the site. Even a piece of matting may leave an imprint in the earth which can be worked out to reveal the weaving technique. H. C. Shetrone, Ohio's leading mound expert, is able to trace out the individual loads of earth dumped down by the carriers in building the mound, even finding the imprint of a basket which one of them failed to empty. Not all archaeologists are so skilful, but many of them are. It is clear that an ignorant careless digger would not only fail to see these impor-

tant things but would destroy all traces of them.

The archaeologist is pleased when so many people take an interest in his subject, but he cannot be happy over their enthusiasm to dig things out, because he knows too well how blind they will be to what should be recorded. We hope the reader has acquired some idea of the responsibility he assumes when he digs into a rock shelter or a prehistoric grave.

We have but space enough to mention how a boy, Robert D. Scott of Fort Montgomery, New York, noticed a small hole in the face of a cliff. Entering, he found himself in a small cave, upon the floor of which he saw bits of pottery. He reported his find to the archaeologist in the Trailside Museum at Bear Mountain. Young Scott was rewarded by assisting in the excavations, was heralded in the press as "the luckiest boy in the United States," and duly praised for his good sense in not trying to dig out the "relics" secretly. The *New York Times* made his achievement the subject of an editorial (May 11, 1941), reprinted below:

← MASTER SCOTT finds door to a hidden cave

Lucky Boy

"Robert D. Scott is 13 years old and in the seventh grade of the Fort Montgomery grammar school. At this moment he is the luckiest boy in the United States, having just done what every normal boy in the United States wants to do. He found a hidden cave with a treasure inside. Nobody had been in that cave for unknown hundreds of years. Robert wormed his way through a boy-sized hole, which had been left when an ancient earthquake closed the entrance. Inside he found Indian pottery, arrowheads, medallions of slate once worn around Indian necks, and an old pipe of red clay.

"It seems a shame to reveal the location of Robert's cave, but its picture has already been in the papers. It is not far from the Bear Mountain bridge. Archaeologist

James D. Burggraf of the Trailside Museum believes that it was used by Algonquin fishermen before the time of Columbus. To an archaeologist it is tremendously exciting to get evidence that the Algonquins were in this part of the Hudson Valley before the Iroquois pushed in and established a kind of corridor between the two great sections of the Algonquin race. The Iroquois, in short, weren't old settlers at all. They happened along after the pioneering was finished.

"Robert would be richer if he had found a couple of kegs of pieces of eight. But Indians are more fun. They teach a useful lesson, too. Robert can tell his elders with some assurance that ten or twenty years of big noises in Europe or China aren't all there is in the history of the human race. If we have to go back to living in caves it won't be the first time. We can stand it."

From the New York Times

Additional Information on Archaeological Methods

THE following publications have been selected to give more detailed information as to the techniques of archaeological excavation and the interpretation of the data. Some of them contain instructive photographic reproductions of trench-sections, artifacts, and diagrams of stratigraphy.

Antiquity and Migrations of the Early Inhabitants of Patagonia. By Junius Bird. The Geographical Review, Vol. 28, No. 2. 1938

The Discovery of Man. By Stanley Casson. New York. 1939

Man Makes Himself. By Gordon V. Childe. London. 1936

Rediscovering Illinois. By Fay Cooper Cole and Thorne Duell. Chicago. 1937

The Su Site, (New Mexico). By Paul S. Martin. Field Museum of Natural History, Chicago. Vol. 32, No. 2. 1943

Digging in the Southwest. By Ann Axtell Morris. New York. 1933

Digging in Yucatan. By Ann Axtell Morris. New York. 1931

The Aztec Ruin, (New Mexico). By Earl H. Morris. Anthropological Papers, American Museum of Natural History. New York. Vol. 26, Part 1

Chronology of the Tano Ruins, New Mexico. By N. C. Nelson. American Anthropologist N. S. Vol. 18, 1916, pp. 159-180

Contributions to the Archaeology of Mammoth Cave and Vicinity, Kentucky. By N. C. Nelson. Anthropological Papers, American Museum of Natural History, New York. Vol. 22, Part 1. 1917

Chronology in Florida. By N. C. Nelson. Anthropological Papers, American Museum of Natural History, New York. Vol. 22, Part 2. 1918

Two Prehistoric Village Sites at Brewerton, New York. By William A. Ritchie. Research Records of the Rochester Museum of Arts and Sciences, No. 5, Rochester, N. Y. 1940

The Mound Builders. By Henry Clyde Shetrone. New York. 1930

An Archaeological Survey of the Norris Basin in Eastern Tennessee. By William S. Webb. Bureau of American Ethnology, Bulletin No. 118. Washington, D. C. 1938

An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi and Tennessee. By William S. Webb and David L. DeJarnette. Bureau of American Ethnology, Bulletin No. 129. Washington, D. C. 1942

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