

1-13-1972

Archeology is a Science

Siegfried H. Horn
Andrews University

Follow this and additional works at: <http://digitalcommons.andrews.edu/hisban-general-publications>

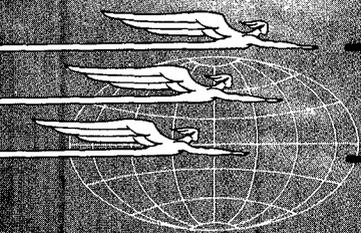


Part of the [History of Art, Architecture, and Archaeology Commons](#)

Recommended Citation

Horn, Siegfried H., "Archeology is a Science" (1972). *Publications*. 2.
<http://digitalcommons.andrews.edu/hisban-general-publications/2>

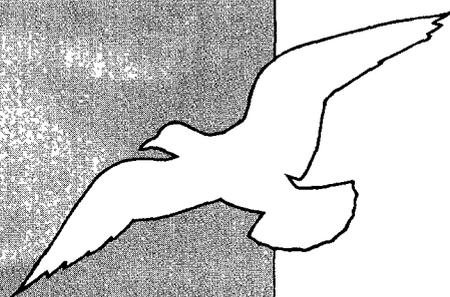
This Popular Press is brought to you for free and open access by the General at Digital Commons @ Andrews University. It has been accepted for inclusion in Publications by an authorized administrator of Digital Commons @ Andrews University. For more information, please contact repository@andrews.edu.



Review

THE ADVENT REVIEW AND SABBATH HERALD • WEEKLY INTERNATIONAL EDITION

January 13, 1972
Vol. 149 No. 2



“All the paternal love which has come down from generation to generation through the channel of human hearts, all the springs of tenderness which have opened in the souls of men, are but as a tiny rill to the boundless ocean, when compared with the infinite, exhaustless love of God.”

My Life Today, p. 289

ARCHEOLOGY IS A SCIENCE

By SIEGFRIED H. HORN

[The two preceding articles have dealt with the history of the Biblical city of Heshbon, the history of the Andrews University Heshbon Expedition, and the organization of this expedition. The present article discusses briefly the methods employed in our archeological work.]

PALESTINIAN archeology is about a century old. The pioneers in Palestinian archeology were not professionals in the field of excavations; in fact, none existed anywhere when they carried on their work. Many errors were made before methods were developed that

Siegfried H. Horn is professor of archeology and history of antiquity at Andrews University, Berrien Springs, Michigan.

produced the greatest possible returns for the money, effort, and time spent in excavations.

It was Flinders Petrie, the father of scientific excavations in Egypt, who initiated pottery chronology into Palestinian archeology. Since in Palestine, unlike in Egypt or Mesopotamia, few written ancient documents have been preserved that can be used for dating archeological strata or occupational and structural remains, Petrie looked for something else that could serve as a time clock. Noticing during his 1890 excavation of *Tell el-Hesi* that much of the pottery material was

similar to the pottery of Egypt, that can be dated on the basis of documentary evidence, he began to set up a corpus of Palestinian pottery. This system of using pottery for dating ancient remains has been refined, especially by William F. Albright, for many years unquestionably the undisputed master of Palestinian archeology, so that today pottery experts can produce dates for any excavated material in Palestine with a margin of error that is seldom greater than 50 or 100 years.

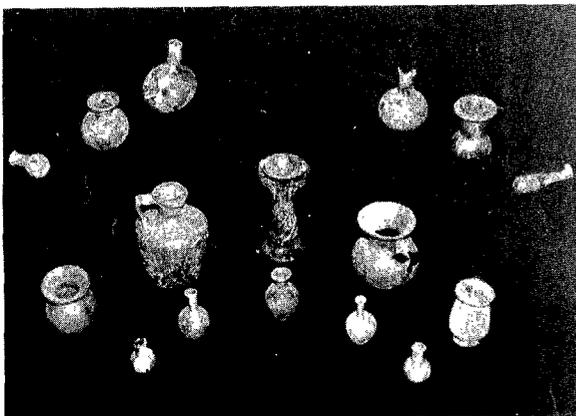
Andrew Reisner's excavations at Samaria gave to Palestinian archeologists methods of painstaking and exact recording, and Kathleen Kenyon demonstrated at Jericho sophisticated methods of stratigraphic digging developed in Europe. All this work has been further refined by succeeding excavations and continues to be improved by every reputable expedition.

The result of these methodological refinements is that a modern expedition, generally speaking, moves less dirt than those that worked half a century ago and covers less ground areawise, but obtains a much greater proportion of historical information than did its predecessors.

From the previous article of this series the reader has already learned that a modern archeological expedition, such as the one that excavated Biblical Heshbon, is a rather elaborate organization, having a staff consisting not only of archeologists but also of geologists, anthropologists, pottery experts, to name only a few areas of specialization. In fact, the ideal expedition should also have on its staff mineralogists, paleozoologists, paleobotanists, magnetometrists, and scientists in other disciplines, but this is not always feasible for financial and other reasons. However, the host government requires that an expedition have at least professional archeologists, architects, and photographers on the staff before it will issue an excavation permit. Furthermore, there is a moral pressure exerted on every archeologist by his professional peers that forces him to employ generally accepted scientific methods in his work.

Stratigraphic Excavations

Before actual digging begins, each area designated to be excavated is divided into plots (which are called "squares") of a manageable size—from 15 to 25 feet square, oblong, or even trapezoidal in shape, depending on the topography or terrain of the mound. One-yard-wide catwalks, called balks, are left between the squares. These are



Left: Numerous glass vessels were found at Heshbon. Below: A church from the Byzantine period, a typical basilica-type structure, already partially uncovered in 1968, was further excavated in 1971.



sharply and perpendicularly trimmed as excavations proceed and serve as controls. All features that a balk intersects can be seen in the balk in cross-section, be it a plaster floor, a dirt layer, a wall, a refuse pit, or a water channel. If features are encountered within a square that do not reach to a balk, auxiliary balks are left standing until those features and their relationship to other features that reach a main balk have been established.

The reader should understand that in a Palestinian mound many layers of debris are found that represent past occupation periods. They lie one above the other like the layers of a cake. The earliest layers are at the lowest level, and the latest are closest to the surface. The accumulation of these layers in the course of a city's history is owing to the fact that the ancients usually did not remove the debris of a destroyed city or house when they rebuilt, but simply leveled off the debris of previous structures and erected the new buildings on top of it. In this way a city grew gradually in height.

However, in Roman times, when monumental buildings of great dimensions were erected in cities such as Heshbon, the builders did remove

the layers of debris of past ages and put the foundations of their buildings on bedrock. Because of these Roman building habits, clearly evident in the acropolis area at Heshbon, we were frequently surprised and disappointed to find that occupation evidence of early periods had already been destroyed in ancient times.

The strata of debris are, however, not always found lying in a nice horizontal, layer-cake fashion. Some parts are thicker than others, and some lie higher than others. Occasionally layers are interrupted by intrusive pits or foundations of buildings of a later period. For this reason excavations have to be carried out cautiously and carefully. Probes have to be made, and layers are peeled off in three-foot-wide strips so that notice can be made of any change in texture or color of the soil. As soon as the soil changes, the pottery associated with the new material is put into a different bucket and the information is noted in the record book.

A great amount of an archeological supervisor's work is recording. All observations and measurements taken must be recorded, because any evidence that is not recorded is lost forever. An archeologist is a de-

stroyer by nature of his profession, for he must remove remains of one period before he can discover and study the earlier, underlying layer. For this reason it is essential that he record by written word, drawings, and architectural plans, as well as by photographs, every bit of evidence before it is removed. The reader will see from this explanation that an archeologist's responsibilities are grave and manifold, his duties varied and sometimes even boring.

What is said about the occupational layers found in the course of excavations applies with equal force to any objects discovered. Many objects cannot be dated unless their context is known, and if their exact provenance and origin are unknown they cannot shed light on the history of the site from which they come. Hence it is essential that the exact spot where a certain object is found be recorded, as well as the number of the pottery bucket with which it is associated. This is especially important with regard to coins, for many of them bear dates and can support or even refine the dates arrived at from pottery analysis. If, for example, a dated coin is discovered, but its exact provenance is not recorded, that coin may become a valuable museum piece or collector's item, but it fails to make a contribution to the historical understanding of the site where it was found.

In some cases objects are so important that they are photographed *in situ*, at times repeatedly at the various stages of excavation, before they are removed; and some are so delicate or fragile that experienced personnel are called upon to remove them. For example, we found an antelope horn in such an advanced stage of decay that it fell to pieces wherever it was touched. It was therefore necessary to remove the surrounding dirt with a pen knife, a camel hair brush, and dental instruments. After on-site photographs had been taken, liquid paraffin was applied to strengthen its fabric so that it could be removed. All this work was carried out by the chief archeologist assisted by the anthropologist, without the help of local workmen or area and square supervisors.

It is only through the application of these various rules of practical field archeology that an expedition can produce maximum results that are of lasting value in reconstructing the history of an excavated site. [Next Week: Results of the 1971 Expedition.]

Money in Bible Times—12

THE PROCURATORS

By KENNETH L. VINE

a. Pontius Pilate (A.D. 26-36)

While there were several procurators, the Bible student is interested in two in particular, Pontius Pilate and Antonius Felix. The "Kodrantēs" (farthings) of Pilate (Matt. 27:2ff.) are scarce and are of two main types: (1) the *lituus* (shepherd's crook) on the obverse and a wreath containing the date on the reverse, and (2) three ears of barley on the obverse and a *simpulum* (small ladle) on the reverse. Both bear inscriptions stating they were minted in the reign of Tiberius Caesar. No doubt many of these were in Judas' purse.

b. Antonius Felix (A.D. 52-60)

Felix desired a "more perfect knowledge" of Paul's Christian "way" of life (Acts 24:22-27) and with his wife Drusilla, listened to Paul's message. Impressed to the point of trembling, he sent Paul away with the statement, "Go thy way for this time; when I have a convenient season, I will call for thee."

Illustrated is the most common

"Kodrantēs" of Felix, minted in the reign of Nero and containing crossed shields and lances on the obverse, with the palm tree and date on the reverse.



Coins of Pontius Pilate



Coins of Antonius Felix