COMPARISON OF COMPOSITIONAL ANALYSES
OF IRON AGE CERAMICS FROM TWO SITES IN JORDAN


Abstract

Iron Age pottery, including Late Bronze/Early Iron Age I collar rim storage jars, Iron Age II black burnished bowls, unique cult pieces, cookware, and the regular repertoire from two sites (Tell Hesban and Tell el-‘Umeiri) is examined using petrographic analysis and Instrumental Neutron Activation Analysis (INAA). We compare the results of each study with the morphological categories based on vessel shape and surface finishes to learn about change and continuity of clay bodies and organization of the ceramics industry in ancient Jordan.

Introduction

Mineralogical and chemical analyses of pottery excavated at Tell Hesban was carried out to examine diversity of raw materials within and between the long span of habitation and use of the site from the Iron Age I to recent times. To specifically investigate the regional Iron Age I and II ceramics industry, we compared sherds excavated at Tell Hesban and Tell el-‘Umeiri (Figure 1). Relative proximity of the two sites, located southwest of Amman in the Madaba Plains region, permits a regional assessment of pottery manufacture and distribution for central Jordan.

Material and methods

Hesban pottery J. Sauer excavated and collected during the initial excavation seasons provides the basis for our compositional analysis. The material is currently part of the collection at Canadian University College in Lacombe, Alberta, on study loan from Andrews University.

Our original criteria for selecting Hesban sherds was to sample the widest range of vessel types, fabrics, and firing patterns based on macroscopic appearance of the clay bodies. An earlier, preliminary petrographic analysis of sherds from Tell el-‘Umeiri (London et al. 1991), also guided our Hesban sherd selection.

The sherds submitted for Hesban petrographic analysis include 310 sherds from Tell Hesban (Petrographic Hesban samples (PH 1-291 and PH 298-316)) and six sherds excavated at Tell el-‘Umeiri (PH 292-297). Thin section analysis of 230 sherds,
In-flight Group 2

In the event that the mission scenario involves flight C-130s, the 99 km band is used with the exception of a few narrowband frequencies. The exceptions are the 16 to 19 GHz bands which are limited to the following frequencies: 22, 24, and 26 GHz. The In-flight Group 2 consists of these bands only, with the exception of the 16 to 19 GHz bands. The In-flight Group 2 consists of the following frequencies: 22, 24, and 26 GHz. The In-flight Group 2 consists of the following frequencies: 22, 24, and 26 GHz.

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Figure 2. INAA Group 2: burnished bowls and interpretive ceramic shapes.

The INAA Group 2 contain some new materials possibly used in vessel manufacture. This is a heat-shock effect on INAA Group 1. The cooling process is not a representative of the inductive phase. The INAA Group 3 indicates a high iron phase. All samples, except Sample 2, contain some clays. Sample 3 does not reach the site. No iron Age bowls or iron Age samples or shapes from Hh. Hh 294 and Hh 292. All samples from Group 3 indicate one iron Age II fig. 1b and Roman Period bowls.

Figure 1: INAA Group 1: collected from the site.
INVA Group 4

Discussion

Despite these results, there is some uncertainty about the dietary habits of Group 4. Some studies have suggested that the consumption of specific foods, such as meat, varies between groups. Further research is needed to better understand the dietary habits of Group 4.

INVA Group 3

A comparison of compositional analysis of bone fragments from different locations in Jordan showed significant differences in the bone composition across regions. This suggests that the diet and nutrient intake varied among different groups.

INVA Group 2

The study of bone composition can provide valuable insights into the dietary habits of ancient populations. By analyzing the bone composition, researchers can gain a better understanding of the nutritional status of past populations.

INVA Group 1

The bone composition analysis also revealed differences in the dietary habits of Group 1. It was found that the bone composition differed significantly between Group 1 and other groups, suggesting that the diet and nutrient intake were unique to this group.

INVA Group 0

Finally, the bone composition analysis showed no significant differences between Group 0 and other groups. This indicates that the diet and nutrient intake were similar among all groups studied.

INVA Group -1

Overall, the study of bone composition has provided valuable insights into the dietary habits of ancient populations. Further research is needed to better understand the factors that influenced the diet and nutrient intake of these groups.
Figure 6. NNAV material finds from Hebron and Ulma.

Hd 297

Hd 296

Hd 307

Hd 101

Hd 79

Hd 14

Hd 129

Hd 299

Hd 299

Improving comic shapes

We note that the comic shapes from the more modernized forms of the Teens 75 issue are slightly different from the original forms in the comic. The comic shapes in the original forms are more exaggerated and have more dynamic forms. In contrast, the comic shapes in the modernized forms are more streamlined and have a more modern and simplistic design.

In the Teens 75 issue, the comic shapes are more varied, with a range of different shapes and forms. In the modernized forms, the comic shapes are more uniform, with a focus on simple, geometric shapes.

The comic shapes in the Teens 75 issue are more expressive and convey a sense of movement and energy. In contrast, the comic shapes in the modernized forms are more static and less expressive.

The differences in the comic shapes between the Teens 75 issue and the modernized forms are a reflection of the changes in comic art styles over time.

FROM AGE II BURNT IN COMMON

Presentation of the Teens 75 issue in the Teens 75 issue.

The low-contrast aesthetic of the Teens 75 issue is intended to convey a sense of mystery and tension. The lack of contrast between the characters and the background makes it difficult for the reader to discern the expressions and actions of the characters. This creates a sense of unease and anticipation.

The Teens 75 issue is also known for its use of minimalistic design. The comic is composed of simple, clean lines and a limited color palette. This approach is intended to emphasize the tension and drama of the story, as well as to create a sense of timelessness.

In contrast to the Teens 75 issue, the modernized forms feature more vibrant colors and a more dynamic design. The comic shapes are more varied and have a more exaggerated appearance.

The modernized forms are also more focused on the action and excitement of the story. The characters are more dynamic and expressive, and the comic shapes are more varied and have a more exaggerated appearance.

The differences in the Teens 75 issue and the modernized forms are a reflection of the changes in comic art styles over time.

From the Teens 75 issue, the comic shapes are more expressive and convey a sense of movement and energy. In contrast, the comic shapes in the modernized forms are more static and less expressive.

The differences in the comic shapes between the Teens 75 issue and the modernized forms are a reflection of the changes in comic art styles over time.
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