

INTENSIFICATION OF THE FOOD SYSTEM IN CENTRAL TRANSJORDAN DURING THE AMMONITE PERIOD

ØYSTEIN SAKALA LABIANCA
Andrews University

In this essay I discuss the research design utilized by our archaeological team in attempting to reconstruct the cultural history of the Ammonites. To set the stage for this discussion, I shall begin by briefly considering the current state of our knowledge with regard to this once-powerful Transjordanian people.

At the present time, most of what we know about Ammonite culture pertains to the period in their existence when they were at the height of their power and influence as a people. Archaeologically, this corresponds to the Iron II period, particularly the seventh and sixth centuries B.C. In the OT we encounter them during this time as enemies of the people of Israel—as a people cursed by the prophets of Yahweh for their idolatrous ways.

What neither the biblical record nor the existing corpus of archaeological and epigraphic finds has much to say about is what the Ammonites were like prior to this period of power and influence. What kinds of livelihoods did they pursue prior to settling in villages and towns? How were they organized before becoming a nation? What were the factors which brought them into existence as a nation? Just as these questions have been asked with regard to early Israel, so they present themselves in our case with regard to early Ammon.

1. *A Focus on the Silent Majority*

As our team has endeavored to get a handle on questions such as these, we have had to undergo a fundamental reorientation in our ways of thinking about, and asking questions of, the archaeological record. At the heart of this reorientation has been a heightened commitment to ascertaining the contributions which the silent majority of the first and second millennia B.C. made to Palestine's cultural landscape and history.

Specifically, our methods have had to be redesigned to help us observe more clearly the unglamorous lives of the farmers and shepherds of these past millennia—people whose daily routines produced little in the way of impressive monuments, objects of gold and silver, or informative inscriptions; but who produced much in the way of rude walls, cisterns and storage bins, broken jars and pots, scrapped fruit pits and animal bones, and pieces of spilled grains, legumes, and dung.

In order to bring the subtle traces of this silent majority into clearer view, a research design has been devised which focuses our attention as a team on the everyday activities of the rural population. This research design is based on the belief that among all of the everyday activities carried out by villagers and shepherds, none dominated their daily lives more—in terms of time and energy expended—than did the quest for food.

We are considering this quest in the broadest sense, of course, in that we have in mind all of the beliefs and all of the political, social, and economic relationships involved in producing or procuring, processing, distributing, preparing, and consuming food. In settling on this perspective, we have merely reaffirmed and refurbished a theoretical orientation that has long been in vogue in anthropological circles. The focus on food systems, whether in the name of functionalism, structuralism, or cultural ecology, has been pursued by anthropologists on both sides of the Atlantic since the earliest days of systematic fieldwork by members of this and related disciplines.

2. *Conceptual Framework*

What is perhaps unique about our particular research design is the extent to which it explicitly operationalizes the food-system concept for use by archaeologists. To this end, it focuses attention on five specific parameters of food systems, each of which is traceable by means of the data available to archaeologists. These include environmental conditions, settlement patterns, land-use patterns, operational patterns, and dietary patterns.

For example, changes in *environmental conditions* can be traced through analysis of present-day habitat conditions and analysis of plant and animal remains. Changes in *settlement patterns* can be traced through analyzing the distribution of various types of sites located within our project area. Changes in *land-use patterns* can be traced through analysis of plant and animal remains, earth-

works, water-management works, and soil conditions. Changes in *operational patterns* can be traced through analysis of the remains of agricultural tools and facilities (such as storage installations and food processing facilities), transportation and marketing facilities, defensive structures, and so on. Changes in *dietary patterns* can be traced through analysis of plant and animal remains, as well as by means of anthropometric analysis of human skeletal remains.

When it comes to dealing with the temporal dynamics of food systems, our research design includes several important concepts. To begin with, there are *intensification* and *abatement*. Whereas the former construct refers to the changes which take place when people intensify their exploitation of various natural and cultural resources, the latter has to do with the opposite process. Two related concepts for thinking about the changes which occur in the lives of individual households when intensification or abatement occur are *sedentarization* and *nomadization*. Whereas sedentarization is typically linked to intensification and involves households becoming increasingly oriented toward crop production and stationary modes of existence, nomadization is typically linked to abatement and involves households converting to more-pastoral, more-nomadic modes of existence.

In order to give further concreteness to the idea of change over time in the intensity of food systems, our research design posits the existence of three different intensity states: low, medium, and high. These three states exhibit the following configurations of the five referents mentioned earlier:

Low-intensity Configurations are characterized by high diversity of naturally occurring plant and animal species; high seasonal variation in location and intensity of human population due to migration; prevalence of pastoral pursuits and minimal disturbance of soils due to cultivation; prevalence of portable or seasonally abandoned operational facilities; and prevalence of a subsistence diet derived from animal by-products, fruits and grains in season, hunting, and gathering. This configuration corresponds to times during which *pastoral nomads* prevailed within the project area.

Medium-intensity Configurations are characterized by a moderate diversity of naturally occurring plant and animal species; moderate seasonal variation in location and intensity of human population due to an increased number of permanently settled households; prevalence of field-crop pursuits and moderate disturbance of soils due to cultivation, especially in fertile plains and

valleys; prevalence of small-scale water and soil-management technologies, fortified residential compounds and villages, and extensive utilization of cattle for plowing; prevalence of a subsistence diet derived primarily from field-crops, but supplemented by produce resulting from limited gardening, orcharding, and the raising of sheep, goats, and poultry. This configuration corresponds to times when village-based *cereal farming* prevailed.

High-intensity Configurations are characterized by a low diversity of naturally occurring plant and animal species; minimal seasonal variation in location and intensity of human population due to large numbers of permanently settled households; prevalence of field-crop pursuits in combination with extensive gardening and orcharding, the latter being especially important in hilly terrain; prevalence of large-scale water and soil management technologies, food processing and storage installations, transportation facilities, market and urban centers, and an extensive utilization of mules and horses for plowing; prevalence, especially in urban areas and to a lesser degree in rural areas, of a diet consisting of a greater variety and quantity of exotic items, fruits, and vegetables due to delocalization of the food supply by means of long-distance trade. This configuration corresponds to times when *urban-oriented agriculture* prevailed.

The utility of these configurations when it comes to interpreting the archaeological data is that they provide a basis for estimating the intensity level represented by specific combinations of finds. For example, a stratum filled with the remains of exotic fish would point to a high-intensity configuration. If in addition to the fish bones, large quantities of pig bones were also found, this would give further weight to this estimate. If, furthermore, the ruins of impressive public buildings were also found in the same stratum, our confidence level would rise a bit more, and so on.

By means of this type of reasoning, an idea of the changes which have taken place over the centuries in the vicinity of both Hesban and ʿUmeiri has begun to emerge. Food production in the Hesban region has depended upon four basic strategies: camel herding, sheep and goat herding, field-crop cultivation, and tree-crop cultivation. It should be noted that we do not assume that these various strategies were pursued in isolation, but rather that they were carried on in varying combinations, depending upon the production goals and risk-management objectives of individual households and villages. To the extent that one or two of these

strategies were emphasized more than others, they furnish a clue for estimating the intensity state which prevailed during a particular historic period.

To an important extent, our research at Tell el-ʿUmeiri and vicinity is providing a new empirical testing ground for conclusions derived as a result of our previous work at Tell Hesban. This is true, for instance, with reference to our investigation of the rise and fall of the Ammonite people. I will turn next to providing a brief explanation of how we have utilized the food-system concepts discussed above to operationalize this investigation.

3. Operationalization of Concepts for Low-intensity States

To begin with, there is the problem of trying to ascertain whether and when the Ammonite food system existed in a low-intensity state within the project area. As could perhaps be expected, this has proved to be the most difficult problem for us to operationalize. Nevertheless, we believe we are on the right track.

The approach which we have taken to this problem is one which has proven itself repeatedly for our team: namely, to shift attention to the most recent instance of the phenomena under investigation. In other words, before concentrating our efforts on finding evidence of a way of life that existed three thousand years ago, we have instead sought to learn as much as possible from the most recent practitioners of a similar way of life. In so doing, we believe our capacities for knowing what to look for in the more historically remote Ammonite period will be greatly enhanced.

Already some potentially significant insights have been obtained as a result of our investigations of the modes of livelihood which prevailed during the Late Ottoman Period—the most recent period in which a low-intensity system existed within the project area. What we have found is quite contrary to the widely held view that during the Ottoman centuries (which preceded the establishment of the modern Kingdom of Jordan) the country's population was made up primarily of tent-dwelling, camel-breeding nomads. While this is not an entirely false picture, especially with regard to tribes such as the Beni Sakhr, it certainly is not an appropriate picture of the way of life of the Ajermeh, another major tribal group occupying the project area during Ottoman times.

In the latter case, another mode of livelihood prevailed which on an annual basis combined a period of stationary existence in

cave villages with a period of seasonal migration from camp site to camp site. For example, an abandoned cave village has been located in the mound immediately to the south of the village of Al-Bunayat. This village, which is located about a kilometer to the north of Tell el-^cUmeiri, belonged to a group of Ajermeh tribesmen. By means of interviews with older residents of Al-Bunayat, we have learned that this abandoned village was the ancestral village of the population of Al-Bunayat. Indeed, we were able to make contact with a number of individuals who could remember how life was lived in this ancestral village.

In the case of Jeriet el-^cUmeiri, as this village used to be called, at least a dozen Ajermeh households once occupied the same number of caves. Along with their cave dwellings, they maintained a threshing ground, several cisterns, and a burial ground. Their period of residence usually lasted for about four to five months, just long enough to plant and harvest a crop of grain on the fertile slopes below the village. The rest of the year they would be on the move with their animals, up and down the slopes of the Wadi Hesban, in search of pasture and water.

Since similar clusters of caves have been located throughout the entire project area, there is good reason to suppose that a number of such seasonal villages existed throughout the Ottoman centuries. That this was indeed the case has been confirmed both by local informants and by examination of accounts of visits to such places by some of the explorers who visited the project area in the previous century (e.g., Conder).

While we have just barely begun to unravel the complexities of the survival strategies to which people adhered during the supposedly "lifeless" Ottoman centuries, one important implication of the limited research carried out thus far is that we have a great deal more to learn about how people lived during periods when the tells are silent. Thus, the fact that there are comparatively few tells with traces of sedentary occupation during the Late Bronze Age in Transjordan cannot be taken as evidence that the region was somehow uninhabited. To the contrary, it is very likely that various and complex modes of semisedentary livelihoods were pursued by the populations which existed during periods when the majority of Transjordan's tells were unoccupied.

A particularly intriguing question is whether cave villages might have been occupied by the early Ammonites as well, especially during the Late Bronze Age, when they were at the begin-

ning of the process of settling inside their borders in Transjordan. During this period, it would seem quite possible that the silent majority of the Ammonite population existed as a semisedentary, mixed agropastoralist people, perhaps something like the seasonally stationary, seasonally mobile Ajermeh of the Ottoman period.

To answer this question, our regional survey team plans to continue to study the ways of the Ajermeh and other tribesmen of the Ottoman period. As suggested above, once we have a better grasp of the range of subsistence alternatives available to these historically more accessible tribes, we shall have a better feel about how to operationalize research on previous centuries, such as the Late Bronze Age, about which the majority of the tells of Transjordan are silent.

4. *Operationalization of Concepts for High-intensity States*

Having given an indication of how we are approaching the problem of whether and when the Ammonite food system existed in a low-intensity state within the project area, I shall turn briefly to a discussion of our procedures for ascertaining whether and when higher-intensity states prevailed. Although, as I have already mentioned, we are still trying to find out exactly where and what to look for in tracing the low-intensity states of the Ammonite food system, quite a different problem presents itself when it comes to tracing the medium- and high-intensity states. This is the challenge of knowing what *not* to include in our investigations, as the hinterlands of the project area abound in traces of ancient terraces, retention walls, field walls, building foundations, cisterns, and other evidences of ancient agricultural activity. Indeed, the discussion of what exactly we should call a "site" was carried on among our survey crew for nearly the entire 1987 season. The problem, of course, is that when approached from a food-system perspective, there is no piece of land, no ruin, no environmental unit that is not potentially of importance to understanding the whole picture. Thus, the whole notion of what constitutes a "site" becomes problematical.

In order to deal with this problem, we have devised an approach that has thus far proven to be quite satisfactory. This approach consists of three complementary procedures: namely, the random-square survey, the judgment-sampling survey, and the environmental survey.

As its name implies, the *random-square survey* is a procedure which involves intensive survey of randomly selected squares. Jon Cole (an engineer on our team) has drawn up a grid that divides the 5-km-radius 'Umeiri project area up into approximately two thousand 200×200 -meter squares. Our survey team has as its goal to sample about 10% of the entire project area using this grid. Thus far we have completed one hundred squares. Each 200×200 -meter square has received the equivalent of two person-hours of intensive scrutiny, not counting the time spent after each survey in making notes and drawings.

For each of the random squares we record everything deemed important to understanding past and present configurations of the food system. This includes topographic features, soil and vegetational features, present land use, and all traces of ancient ruins or artifacts. Our goal with this procedure is, in the end, to be able to make statistically valid statements about the intensity of successive food-systems regimes for the project area as a whole.

One of the distinct advantages of the random-survey approach over more traditional surveys is that it forces one to make visits to places which a person with any sense of appropriateness or the least measure of courtesy would not think to visit. What I have in mind are places such as villagers' backyards and gardens, forbidden army reserve areas, and the shoulders of main highways. In the process of locating remote or sensitive locations, significant ruins are more often than not encountered—ruins which very likely a more traditional survey would have missed. The string of discoveries made by the random-survey team is rather impressive. It includes numerous farmstead sites, Roman-road sites, and the oldest Paleolithic site found in Jordan.

As already indicated, the random survey is not pursued at the expense of studying important ruins as they are encountered. Indeed, as we have begun to learn the patterns that govern the location of certain types of sites, such as farmstead ruins, traces of ancient roads, or lime-kiln sites, we have deliberately set out to find more examples belonging to the same class of structures. In other words, we have freely pursued the traditional *judgment-sampling procedure* in conjunction with the random-square survey. Our goal in doing so is to locate and record as many farmsteads and related installations as can be found within the project area. Well over fifty such sites have thus far been located and recorded.

The third procedure in this trifold approach to locating and studying medium- and high-intensity configurations of the local food system is the *environmental survey*. This procedure differs from the other two primarily in its unit of analysis, which might consist of an entire valley system, an underground water resource, or rainfall data from adjacent meteorological stations. One of the goals of this survey is to reconstruct changes over time in the conditions of local water, soil, and plant resources within the project area. Projects currently underway include mapping of the likely location, during Ammonite times, of forests and agricultural soils; examination of the surface and subsurface water resource of our project area today and during the days of the Ammonites; and investigation of the role of Ammonite and Roman methods of erosion control in the preservation of the present-day natural environment.

A major difficulty with which we are having to deal in relation to all three of these survey procedures is the problem of obtaining reliable temporal controls on the data. While this is also a challenge in the context of the excavations on Tell el-^cUmeiri, it is a particularly difficult problem in the regional survey, inasmuch as a large number of the structures located in the hinterland have no associated pottery. The approach to this problem that we have adopted is to classify the various hinterland structures according to typological categories, just as has been done in the case of ceramics. Once temporal control has been obtained for one member of these classes, the others can also be assigned to the same time period.

5. *Conclusions*

In addition to the momentum which food-system theory has given to our regional survey, it has also led to sites being selected for excavation that might otherwise not have been deemed worthwhile under the traditional tell-archaeology paradigm. Such is the case, for example, with Rujm Salim. As it turns out, this site is teaching us a great deal about how the Ammonite food system abated. Our goal for the 1989 season includes excavation of at least two additional sites of this type.

When it comes to the implications of the food-system perspective for the excavations on Tell el-^cUmeiri itself, one of the most important of these is that this perspective overcomes the tendency to be preoccupied with certain historical periods at the

expense of others. Instead, it provides a unitary framework for operationalizing fieldwork on all archaeological periods represented at a multiperiod site such as Tell el-^cUmeiri or Hesban. This framework involves interpreting the stratigraphic remains from all periods in terms of whether they reflect motion in the direction of intensification or abatement.

In the foregoing discussion I have set forth certain highlights of the research design that currently is guiding our investigations of the Ammonite silent majority. While it is by no means the only possible research design for operationalizing research on the Ammonites or on any other cultural group in Transjordan's history, it is one which has stimulated a number of promising current and future lines of research.