

## The Significance of Continuity in Early Jordanian Prehistory

Traditionally, the study of the prehistory of Jordan has been treated as a regional aspect of the prehistoric development of Palestine, with its developmental sequences cast in terms of Palestinian successions. Today it is increasingly realized that the early prehistoric development of Jordan during the late Upper Palaeolithic, the Mesolithic and the Pre-Pottery and Pottery Neolithic must be treated as a regional aspect of a far larger area that included the whole of the Levant and perhaps much of southern Anatolia. Also during the last twenty years, it has become clear that cultural development was continuous throughout these lands bordering the northeast Mediterranean Sea during early prehistoric times. Similar cultural elements found throughout the area could have been due to parallel development of commonly held elements rather than the diffusion of elements from one area to another within the region. This is not to say that there was not contact and trade among the peoples of the area, but as time passed their cultures became increasingly differentiated along regional lines, laying the foundations for the culture particularism of later prehistoric times.

The realization of the existence of the continuity of culture during the early prehistoric period is one of the many by-products of the radiocarbon revolution. While this revolution has greatly increased the time spans of the cultures of late prehistoric times, for many archaeologists it has brought a dramatic reduction in the time span which formerly separated the end of the Palaeolithic from the beginning of the Neolithic. With the destruction of the Mesolithic hiatus that had so long separated Neolithic man from his Palaeolithic forebears, it became possible to think in terms of a continuity of culture extending from the Palaeolithic through the Mesolithic into the Neolithic, which was to make possible the persistence of early culture elements into later times.

Understanding the significance of this continuity was difficult within a conceptual framework which visualized the past as a succession of distinct periods, each of which had become subject to interpretation by specialists devoted to a single period. Within the tradition of the 'Three Ages System', modified by evolutionary concepts and the introduction of new periods following archaeological discoveries and even

brought up to date through the introduction of new concepts such as the 'Neolithic Revolution' of V. G. Childs and of intricate successional schemes such as the 'historical sequence' of R. J. Braidwood<sup>1</sup>, emphasis fell on culture period. To oversimplify, once a culture had been classified, its explanation was in hand.

In the course of the last twenty years, the 'New Archaeology' has brought about fundamental shifts in the way we think not only about the cultures of the past, but the manner in which they developed. It has altered our concepts of culture change, which was once explained almost entirely in terms of diffusion and migration. With culture change taking place within a very limited range as the result of an endless sequence of diverse random variations, it becomes possible to visualize culture continuity. Yet in the field the archaeologist does not find a cultural continuum but site segments of the past fixed in time and space. When successive segments within a site are similar they are assigned to a culture phase, but after marked differences have developed, they are attributed to a new culture.

The development of methods for the analysis of culture change and continuity in the cultures of the early prehistoric past came from French typologists rather than the 'New Archaeologists'. During the late forties and fifties, a new method for typological analysis of flint industries was introduced in France. It began with the work of the Bordes on the industries of the Palaeolithic which involved detailed descriptive analysis of flint tools and resulted in cumulative diagrams for the comparison of flint industries of various sites belonging to the same or differing cultures<sup>2</sup>. Subsequently Georges Laplace extended the typological system to the Mesolithic<sup>3</sup>. The application of these methods made it possible to establish not only the precise relationship of sites of the same phase, but the relationships of sites of successive phases. In the

<sup>1</sup> R. J. Braidwood, The Earliest Village Communities of Southwestern Asia Reconsidered, *Atti del Sesto Congresso Internazionale delle Scienze Preistoriche e Protostoriche* 1 (1962), 117.

<sup>2</sup> F. Bordes, and his wife, Denise de Sonneville-Bordes, have defined their typological method in a series of articles in the *Bulletin de la Société Préhistorique Française*.

<sup>3</sup> G. Laplace, Typologie analytique: Application d'une nouvelle méthode d'étude des formes et structures aux industries à lames et lamelles, *Quaternaria* 4 (1957), 133-164.



Levant, the application of similar methods has made it possible to establish the existence of continuities of culture similar to those which have been established for the late Upper Palaeolithic and Mesolithic in France and the Italian Peninsula.

The shifts in proportions of tool types found from phase to phase and period to period attest to changes reflecting culture continuity and change. While many of the changes are due to internal technological development, there are at times major shifts in tool types which are best explained in terms of the adaptation of the technocomplex to economic changes. In early prehistoric times, major shifts in the economic basis probably resulted from changes in food supply, probably related to environmental changes.

Until quite recently the influence of climatic change was widely discounted by archaeologists and palaeo-geographers and geologists. Twenty years ago R. J. Braidwood and H. E. Wright pointed out that after 10,000 BC climatic conditions were probably 'not greatly different from those of the present'<sup>4</sup>. Subsequently palynological work undertaken in southwestern Asia at sites such as Lake Zeribar in western Iran and Ghab in northwest Syria has shown that climatic and therefore environmental changes occurred not only during the Pleistocene, but even in the subsequent Holocene<sup>5</sup>. It has also become increasingly clear that these changes cannot be interpreted in terms of inter-regional latitudinal or altitudinal zones through the use of older atmospheric circulation models<sup>6</sup>. Unfortunately it is probably premature to use models for palaeo-atmospheric circulation in the interpretation of palaeo-environmental evidence. However, models of this type, such as those of H. H. Lamb, suggest that while past climatic changes probably involved relatively limited latitudinal shifts in circulation, there was marked longitudinal movement of the steering mechanism responsible for the dispersal of rain-bearing depressions in the Westerlies. This resulted in patterns of distribution of rainfall and temperatures best understood in regional rather than zonal distributions<sup>7</sup>.

Increasingly in the current literature, the cultural development of Jordan from the end of the Aurignacian to the beginning of the Pre-Pottery Neolithic is assigned to the Epi-Palaeolithic. Although this expresses very well the increasingly held view of a culture continuity extending from the late Palaeolithic to the Neolithic<sup>8</sup>, it must be noted that

the first phase of the Epi-Palaeolithic, characterized by the Kebaran culture, was contemporary with the Epi-Gravettian of Italy and the Magdalenian of southwestern France, which have long been assigned to the late Upper Palaeolithic.

In the Levant, the Aurignacian-like Athlitian culture gave way to the Kebaran culture, which is now traced through two major periods, the Kebaran and the Kebaran Geometric A. Carbon-14 dates from Nahal Oren, Ein Gev I and Ksar Akil place both of these periods in the late Pleistocene. In European terms, they belong to the time of the Lascaux Inter-Stadial and the Late Würm (Oldest Dryas I, Pre-Bølling, Oldest Dryas II, Bølling, and Older Dryas). After the warm Lascaux Inter-Stadial, climatic conditions were cold, except for intervals of warming associated with the Pre-Bølling and especially the Bølling oscillation.

The Kebaran culture is known from camp sites found throughout the Levant, and probably extended through southern Anatolia. In Jordan it has long been known from the Wadi Dhobai<sup>9</sup> and the rock shelter in the Wadi Madamagh near Petra<sup>10</sup>, and has recently been reported by archaeological surveys<sup>11</sup>. These sites have industries not typical of the late Upper Palaeolithic, because there are many microlithic bladelets and a few geometric microliths. There are also other surprising elements such as the hut found at Ein Gev I and finds of pounding and grinding stones and even mortars and pestles<sup>12</sup>. These new elements are not so surprising today because of the discovery of huts built of mammoth bones in the Kostienki culture of southern Russia and grinding stones in a chronologically comparable context in Nubia. Although the numerous bones of fallow deer (30 to 40 per cent) indicated by an incomplete analysis of the faunal remains of Level IX at Nahal Oren suggest a continuation of Upper Palaeolithic hunting, the equipment for grinding and pounding, together with the remains of carbonized seeds from the same level at Nahal Oren, points to a changing way of life<sup>13</sup>.

The Kebaran Geometric A culture has a flint industry which can be derived from the Kebaran culture. The continuity of the flint industry is guaranteed by typological analysis. There are local variations in the flint industry which have been attributed to regional specialization<sup>14</sup>, but they may well reflect only differing hunting and collecting practices. The increase in geometric microliths is suggestive of increasing emphasis upon collecting and the hunting of small game. Yet the bones of larger animals continue, but the great

<sup>4</sup> H. E. Wright, Jr. *Climate and Prehistoric Man in the Eastern Mediterranean, Prehistoric Investigations in Iraqi Kurdistan*, SAOC 31 (1960), 95; C. A. Reed and R. J. Braidwood, *Toward the Reconstruction of the Environmental Sequence of Northeastern Iraq*, *ibid.* 169.

<sup>5</sup> W. van Zeist and S. Bottema, *Palynological Investigations in Western Iran*, *Palaeohistoria* XIX (1977), 19.

<sup>6</sup> K. W. Butzer, *Patterns of Environmental Change in the Near East during Late Pleistocene and Early Holocene times*, *Problems in Prehistory: North Africa and the Levant* (1975), 389-410.

<sup>7</sup> H. H. Lamb, *Climate, Present, Past, and Future*, I-II (1977).

<sup>8</sup> O. Bar-Yosef, *The Epipalaeolithic in Palestine and Sinai*, *Problems in Prehistory, North Africa and the Levant* (Dallas, 1975), 363-378; J. Besançon, L. Copeland and F. Hours, *Tableaux de préhistoire libanaise*, *Paléorient* 3 (1975-1977), 5-45.

<sup>9</sup> J. Waechter, J. Seton-Williams, V. M. Bate and D. and L. Picard, *The Excavations at Wadi Dhobai, 1937-1938, and the Dhobai Industry*, *Journal of the Palestine Oriental Society* 18 (1938), 172-186 and 292-298.

<sup>10</sup> D. Kirkbride, *A Kebaran Rockshelter in Wadi Madamagh near Petra, Jordan*, *Man* 58 (1958), 55-58.

<sup>11</sup> A. N. Garrard and P. S. Price, *A Survey of Prehistoric Sites in the Azraq Desert National Park, in Eastern Jordan*, *Annual of the Department of Antiquities* XX (Amman, 1975), 83-90.

<sup>12</sup> M. Stekelis and O. Bar-Yosef, *Un habitat du Paléolithique supérieur à Ein Gev (Israel), note préliminaire*, *L'Anthropologie* 69 (1965), 176-183.

<sup>13</sup> T. Noy, A. J. Legge and E. S. Higgs, *Recent Excavations at Nahal Oren, Israel*, *Proceedings of the Prehistoric Society* XXXIX (1973), 75-99.

<sup>14</sup> O. Bar-Yosef, *op. cit.*



predominance of gazelle over fallow deer in Levels VIII–VII at Nahal Oren could point to drier climatic conditions, which would have encouraged a turn to collecting. Carbon-14 dates place the Kebaran Geometric A in the time of the Bølling oscillations. Its warmer temperatures may well have meant a shift toward modern environmental conditions in the southern Levant.

The sites of Beidha in Jordan and Mureybet on the middle Euphrates, together with numerous intervening sites, indicate that the Natufian spread through much of the Levant, while sites at Belbasi and Beldihi on the Antalya plain of southwestern Anatolia suggest that either a Natufian or a closely related culture extended through southern Anatolia. Although the Natufian culture shares not only a common territory but many common traits with the Kebaran, there is little agreement on its precise origins. This may be due to its emergence from a Kebaran culture which had already differentiated along regional lines. Furthermore, there is also a division of opinion over its development<sup>15</sup>.

Before the Pre-Pottery Neolithic A, some archaeologists such as Bar-Yosef postulate that an Early Natufian rose in central and northern Palestine while the Kebaran continued in the Negeb and south, where it is known as the Kebaran Geometric B. Subsequently population expansion in the north led to an expansion of the Late Natufian which resulted in the displacement of the Kebaran survivors<sup>16</sup>. Other archaeologists such as J. Besançon, L. Copeland and F. Hours believe that there was an earlier main Natufian phase which was followed by an Epi-Natufian phase. They regard the Kebaran Geometric B encampments of the south as Natufian hunting stations<sup>17</sup>. Obviously there is need for well excavated sites and quantified flint typologies to straighten out both the origins and development of the Natufian. (May Jordan have the good luck to yield up such sites.)

Radiocarbon dates for Basal Jericho suggest that it should be attributed to the time of the relatively warm Allerød climate, when temperatures reached to within one or two degrees of modern mean summer temperatures. Environmental conditions in the Levant must have begun to approach those of our day, a conclusion supported by the oak maximum in Horizon Y4 of the Ghab pollen diagram of northwest Syria<sup>18</sup>. Could the impact of drier climatic conditions than in Kebaran times explain the origin of the Natufian? This would explain its initial development in the central and northern Levant while hunting persisted in the south, where environmental conditions may well have approached those of our day.

In later Natufian times there must have been a return of colder climatic conditions associated with the time of the

Younger Dryas, which marks the end not only of the Late Würm, but also of the Pleistocene. The cold climate of the Younger Dryas, which is dated to the ninth millennium by radiocarbon as well as varve dates<sup>19</sup>, brought a return of conditions of Pluvial type in the Levant. This hypothesis is supported by the sharp decline of oak and AP pollen and the expansion of NAP pollen in Horizon Y5 of the Ghab diagram. While conditions in the northern Levant turned cool and relatively dry, milder, moister conditions prevailed in the south, if one may take the evidence during times of earlier Glacial Pluvials as a model<sup>20</sup>. This would explain the expansion of Natufian settlement into the south, where a site such as Rosh Horesha is dated to the ninth millennium by two radiocarbon dates.

The Natufian development led to the Pre-Pottery Neolithic A culture, which was first defined through the work of K. Kenyon at Jericho<sup>21</sup>. This culture can be traced northward through Syria to Mureybet on the Euphrates<sup>22</sup>. The Pre-Pottery Neolithic A is found largely within the Mediterranean zone of the Levant. The explanation not only for this distribution but in part for the formation of the Pre-Pottery Neolithic A culture may have been warmer climatic conditions during the Pre-Boreal of the eighth millennium. These warmer temperatures brought a trend toward modern climatic conditions, which are indicated by the marked expansion of oak in Horizon Z of the Ghab diagram, beginning just before 10,080/8,130 ± 55 BP/BC. It would also explain the persistence of hunting and collecting groups in the drier areas of the south and east.

In the Levant, the development of the Neolithic is traced through a Pre-Pottery stage, which belongs to the time of the increasingly warm Boreal climate of the seventh millennium, and a Pottery stage, whose beginning falls in the late seventh or early sixth millennium, when an Atlantic climate brought temperatures that exceeded those of our day. Although much of the development of the Neolithic in the Levant is due to the thrust of the internal trajectories of the cultures themselves, which had been set in course in much earlier times, the environmental changes brought by the rising temperatures of the Boreal and Atlantic periods must have had their effect in terms of their influence on settlement patterns and economic potentials.

The Pre-Pottery Neolithic B culture, which extended northward from Beidha in Jordan to Mureybet on the Euphrates, occupied the whole of the Mediterranean zone of the Levant, while a closely related Aceramic Neolithic took over southern Anatolia. It is increasingly clear in the Levant that the

<sup>19</sup> H. Tauber, The Scandinavian Varve Chronology and C14 Dating, *Radiocarbon Variations and Absolute Chronology, Proceedings of the Twelfth Nobel Symposium held at the Institute of Physics at Uppsala University* (1970), 173–196.

<sup>20</sup> A. Horowitz, The Quaternary Stratigraphy and Paleogeography of Israel, *Paléorient* 3 (1975–1977) 56–58.

<sup>21</sup> K. Kenyon, Excavations at Jericho, 1957–1958, *Palestine Exploration Quarterly*, 92 (1960), 88–180.

<sup>22</sup> J. Cauvin, Nouvelles fouilles à Tell Mureybet (Syrie), 1971–1972. Rapport préliminaire, *Les Annales Archéologiques Arabes Syriennes* xxii (1972) 105–115.

<sup>15</sup> O. Bar-Yosef, *op. cit.*

<sup>16</sup> O. Bar-Yosef, *op. cit.*

<sup>17</sup> J. Besançon, L. Copeland, and F. Hours, Tableaux de préhistoire libanaise, *Paléorient* 3 (1975–1977), 19.

<sup>18</sup> J. Niklewski and W. van Zeist, A Late Quaternary Pollen Diagram from Northwestern Syria, *Acta Botanica Neerlandica* 19 (1970), 737–754.



Pre-Pottery Neolithic B developed from the preceding Pre-Pottery Neolithic A and represents a development that had been in the making since late Palaeolithic times. It is becoming increasingly evident that the beginning of plant cultivation and probably animal domestication took place in many areas over a vast region, embracing not only southwest Asia but also northeast Africa and perhaps southeastern Europe over a long period of time<sup>23</sup>. The trajectories of development leading to the Pre-Pottery Neolithic must have varied regionally within the Levant. Of course inter-group relationships played their role and led to the development of trade, which must explain the Anatolian obsidian found at Beidha as well as the diffusion of other elements of culture<sup>24</sup>.

The Pre-Pottery Neolithic B culture brought many innovations, which must represent developments within a Kebaran-Natufian tradition. This conclusion seems to be supported by the development of architecture at Beidha<sup>25</sup> and the development not only of the Tahunian point, but other elements of flint industries found in the stratigraphically-fixed typological sequence at Tell Aswad<sup>26</sup>. There is, of course, the widespread appearance of skull burials, which suggest an ancestor cult, and of female and animal figures, which have long been taken to be indications of a fertility cult<sup>27</sup>. The skull burials and figurines must reflect a complex of religious beliefs developing within the context of the cultures of the Levant.

The development of Jordan and the Levant during the Pottery Neolithic and subsequent Chalcolithic lies beyond this paper. However, note must be taken of the general abandonment of much of the semi-arid zone of the southern Levant at the end of Pre-Pottery Neolithic B times. Here there began a long hiatus in occupation, which is best explained in terms of environmental changes during the sixth and fifth millennia, at the time of the warm Atlantic climate. Its effects were not so serious for settled life in northern Palestine, the Lebanon and Syria, where the Pottery Neolithic and subsequent Chalcolithic developed in terms of a distinctive regional culture whose roots are probably to be found in the Kebaran-Natufian tradition. Hunters and gatherers must have persisted and expanded their territories in the south and east, but there is still the need for field evidence to prove their survival. One hopes that the current surveys in Jordan will turn up the needed evidence.

By the time of the Pottery Neolithic of the Levant, the

Kebaran-Natufian Pre-Pottery Neolithic tradition had been in existence for more than ten millennia. Put in another way, the ongoing tradition had undergone modification and transformation, passed down through a succession of four to five hundred generations of hunters and gatherers who had in the end become sedentary villagers. Increasingly, archaeological field work and prehistoric investigations indicate that this was not an isolated development. A similar continuous development of culture can now be traced from the late Palaeolithic through the Mesolithic into the Neolithic in the Italian Peninsula and southern France.

The thrust of the Kebaran-Natufian Pre-Pottery Neolithic tradition did not stop suddenly in the Pottery Neolithic. Although the continuation of the older simpler traditions is difficult to detect in the flux of all that was new in the rapidly developing but highly regionalized cultures of the Chalcolithic, there are elements, fundamental cultural elements, that must have roots going back through the Mesolithic to the Late Palaeolithic. The development of the rectangular 'External House' with L-plan, which was common during the Chalcolithic and early phases of the Early Bronze Age (I), may well represent a modification of the houses of the Pre-Pottery Neolithic B<sup>28</sup>. Much the same could be said of burial practices. The practice of burial under the habitation area of Kebaran and Natufian rock shelters and cave mouths led to the sub-floor burials of the Pre-Pottery Neolithic such as those found at Jericho PPN A. The development of multiple burials and the ritual involving the removal of the cranium, which are found not only at Jericho PPN B in the Levant, but at Hacilar in southwest Anatolia, suggest that a widespread transformation of burial practices took place at much the same time within the continuum of Kebaran-Natufian tradition<sup>29</sup>. This possibility is reinforced by the appearance of animal and female figurines at much the same time, which suggest the more general transformation of religion during Pre-Pottery B times to meet the needs of an increasingly complex society. The continuation of these traditions would go far to explain the subsequent development of multiple burial and the separate treatment of the skull in the Chalcolithic and Bronze Ages.

The study of the persistence of elements of culture such as these could provide clues as to the outlook of the pre-Canaanite peoples of the Levant. By the time there are religious and historical records, the older peoples had been assimilated by the incoming Canaanites. Yet the discovery of traits in the Canaanite tradition which are difficult to explain could well have been due to the absorption of older ideas and concepts. These older ideas and concepts would have had roots in the widespread continuum which once extended from the Levant through southern Anatolia.

<sup>23</sup> F. Wendorf *et al.* Use of Barley in the Egyptian Late Paleolithic, *Science* 205 (1979), 1341-1347.

<sup>24</sup> C. Renfrew, J. E. Dixon, and J. R. Cann, Obsidian and Early Cultural Contact in the Near East, *Proceedings of the Prehistoric Society*, xxxi (1966), 30-72.

<sup>25</sup> D. Kirkbride, Five Seasons at the Pre-Pottery Neolithic Village of Beidha in Jordan, *Palestine Exploration Quarterly* 98 (1966), 8-72.

<sup>26</sup> M. C. Cauvin, Outillage lithique et chronologie à Tell Aswad (Damascène-Syrie), *Paléorient* 2 (1974), 429-436.

<sup>27</sup> J. Perrot, La Préhistoire Palestinienne, *Supplément au Dictionnaire Biblique* viii (1968), col. 400-401.

<sup>28</sup> K. Yassine, Pre-Second Millennium Dwellings in Palestine, *Annual of the Department of Antiquities* xxii (Amman, 1977-1978), 14-19.

<sup>29</sup> K. M. Kenyon, Burial Customs at Jericho, *Annual of the Department of Antiquities of Jordan* xvi (1971), 5-30.