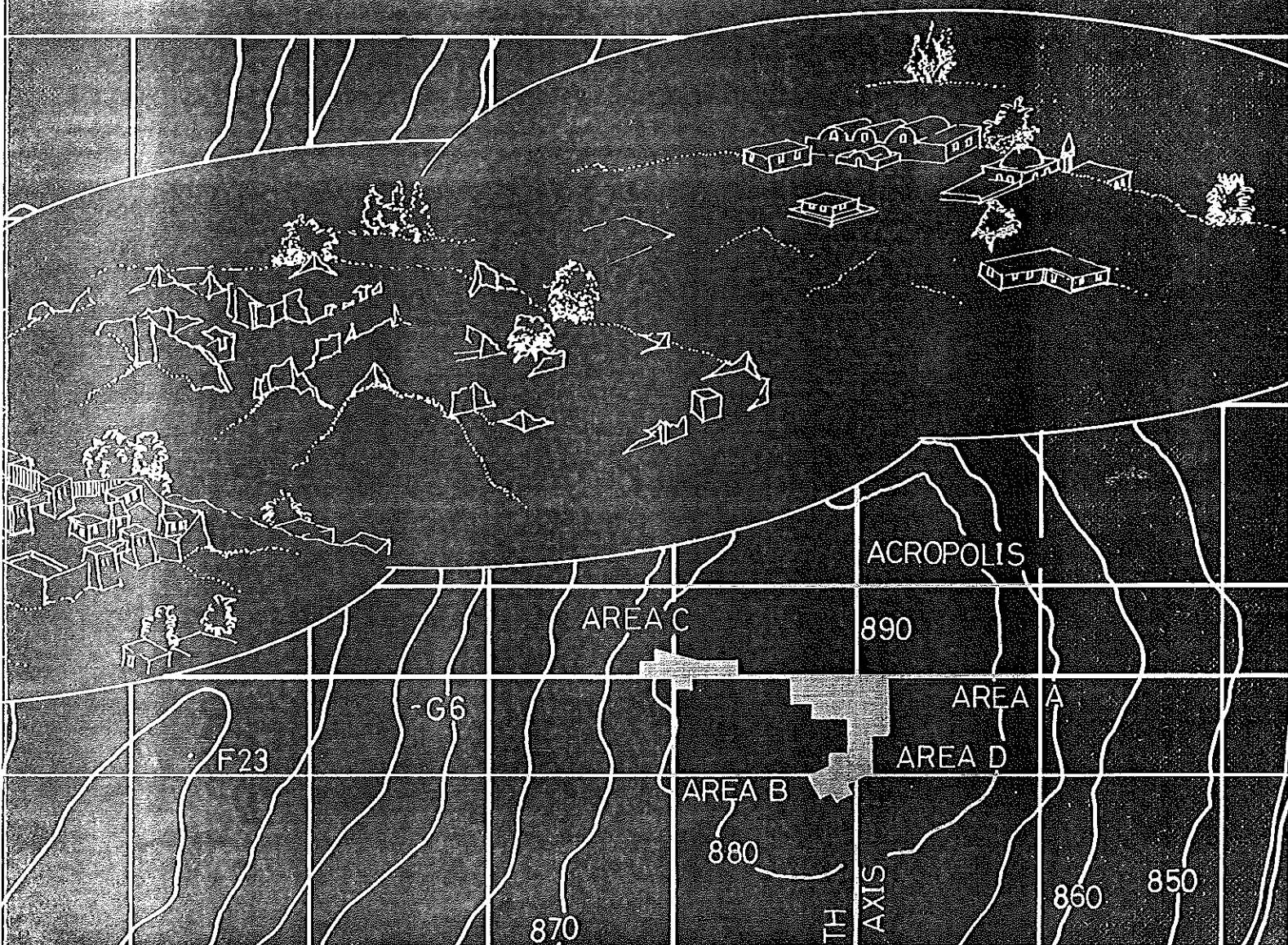


HESBAN 1

Sedentarization and Nomadization

Øystein Sakala LaBianca



HESBAN

Series Editors

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SEDENTARIZATION AND NOMADIZATION:

FOOD SYSTEM CYCLES AT
HESBAN AND VICINITY
IN TRANSJORDAN

by

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Chapter Three

The Hesban Area Food System During the Recent Past

Introduction

In this chapter changes which have taken place within the Hesban project area food system since the early part of the 19th century are examined. Specifically, I shall attempt to discover some of the ways in which the processes of sedentarization and nomadization within the project area might be linked to changes over the past century and a half in the five parameters of the food system discussed in Chapter One, namely, in environmental, settlement, landuse, operational, and dietary conditions. Some of the principal indicators by which food system transitions in this region may be traced archaeologically are noted.

To the extent that this chapter is concerned with discovering archaeological indicators of food system transitions, it may be regarded as a contribution to the field of ethnoarchaeology (Gould 1978; Watson 1980; Binford 1983). Over the past three decades, archaeologists' interest in contemporary peoples has increased markedly because of the many clues to how the archaeological record is formed which can be obtained from studying them. Specifically, ethnoarchaeologists study present-day cultures to see how patterns of daily life become transformed into an assemblage of fragmentary remains of the sort encountered by archaeologists in their excavations and surveys (cf. Hodder 1982; Schiffer 1976; Binford 1983). Such research has become important especially among prehistoric archaeologists working in the Middle East (Watson 1980; Hole 1978), although recently scholars dealing primarily with historical periods have also begun to make contributions to this field (Murray and Chang 1980).

It should perhaps be noted that an interest in the daily-life patterns of contemporary peoples of

the Middle East is not a novel thing among Middle East scholars. Indeed, such interest goes back to the previous century to the days of the rediscovery of Palestine by Western intellectuals and adventurers. Literally thousands of books which offer a wealth of detailed information about the material life of nomads, villagers, and town people throughout the whole of the Middle East, especially people living in what was called the "lands of the Bible" or simply "the Holy Land," were published before the turn of the century. These books not only offer textual accounts, but many of them contain exquisite illustrations such as pencil drawings, sketches, and photographs.

These sources represent a virtual gold mine of information useful to ethnoarchaeologists, for they not only constitute a record of how things were before the full impact of Westernization in the Middle East, but also provide information enabling a reconstruction of the linkages between successive changes in social and cultural patterns and co-occurring changes in material conditions. This chapter attempts to do just that, with particular reference to sedentarization and nomadization, as revealed in changes in the five parameters of the food system mentioned above. It thus goes beyond much of what has been published so far in the name of ethnoarchaeology, in that eyewitness accounts from the 19th and early 20th centuries are relied upon for confirmation of recollections and explanations offered by my informants and for inferences and reconstructions based on my own observations and experiences within the project area. Thus the research reported here approaches, perhaps, what might be categorized as local history or ethnohistory.

The reasons why such an undertaking is worthwhile have already been alluded to in the

previous chapters. To begin with, as was pointed out in Chapter One, the quest for food represents one of the most fundamental activities of humans everywhere. In the Middle East, as seen in Chapter Two, the traditional food procurement strategies pursued have been shaped, to a considerable degree, by the opportunities and challenges presented by the natural environment. By learning about present-day attributes of the natural environment, and by examining various ways in which local inhabitants, over the past century and a half, have altered their strategies for exploiting it, insights may be gained that in turn may lead to better understanding of the fragmentary archaeological record. Rather than being pursued, however, merely for the sake of analogy of the past with the present—a common but sometimes questionable undertaking—this chapter about Hesban and vicinity since Late Ottoman times has been included for two simple reasons.

First, the recent past of the project area constitutes an era which is as deserving of scholarly attention as are earlier historical eras. Indeed, the recent past is the most accessible of the successive eras of which it constitutes the latest. This fact in itself justifies its study for the same reason that it makes sense to learn about the anatomy of living animals before trying to piece together ancient ones from their fragmentary skeletal remains, or to learn about the structure of living languages before trying to decode ancient ones. Thus, the recent past of the project area is that point in time about which there is the potential for learning and understanding the most. As one proceeds to interpret and piece together life in the distant past, knowledge of the recent past is an indispensable vehicle by means of which new and insightful hypotheses can be derived. Furthermore, knowledge of the recent past furnishes a benchmark in time with which to compare the constructs which are developed to represent the experience of peoples whose way of life we are seeking to reconstruct on the basis of the fragmentary archaeological and historical record.

Second, precisely because the recent past is the most accessible to scholarly investigation, it furnishes the best opportunity for becoming acquainted with the workings of the project area food system. In the present chapter, therefore, the processes involved in the transformation of

the local food system during the recent past from a low intensity to a high intensity one are investigated. Specifically sought have been archaeological indices of sedentarization and nomadization. Such indices were sought with reference to changes in the five parameters mentioned earlier. Also sought were insights on how changes in these five parameters were interrelated; for example, whether changes in landuse occurred at a slower or faster rate than changes in diet, or whether they occurred at the same rate.

The recent past of the project area constitutes an era which is as deserving of scholarly attention as are earlier historical eras. Indeed, the recent past is the most accessible of the successive eras of which it constitutes the latest.

The organization of the present chapter is as follows: first, a brief introduction is provided as to how the recent past was investigated; second, a brief review is included of relevant research by other investigators dealing with the project area; third, the project area as a natural resource is introduced; fourth, panoramic images of the project area as it appeared from the summit of Tell Hesban in 1870, 1910, and 1970 are set forth on the basis of what the writer has learned about each of these points in time; fifth, how the population lived when transhumance prevailed (ca. A.D. 1800-1880), when village life prevailed (ca. A.D. 1880-1950) and when urban interests prevailed (ca. A.D. 1950-1980), is discussed; and sixth, on the basis of these findings three different configurations of the local food system are distinguished which summarize the salient features of the food system during the three different historical periods mentioned above.

Objectives and Procedures

As noted in Chapter One, studies of the recent past were already begun in connection with the Heshbon Expedition in 1973, when observations of present-day animal slaughtering processes were carried out to arrive at some possible explanations for the patterning which was apparent in the sheep and goat remains unearthed in the excavations (LaBianca and La-

Bianca 1975). During the subsequent field seasons of 1974 and 1976, ethnographic inquiries in the village of Hesban were escalated (pl. 3.2), thanks to the expedition leadership's willingness to permit volunteers to work in the village instead of on the tell. Assisted by two volunteers during the 1974 campaign (namely Shirley Finneman and Douglas Fuller), and by four volunteers during the 1976 campaign (namely Mary Ann Casebolt, Del Downing, Theresa Fuentes, and Asta Sakala LaBianca and their informant/translators, Samir Ghishan and Hannan Salem Hamarneh) the writer was able to gather information about a wide range of daily-life activities in the village of Hesban during these two eight-week campaigns. While some of this information has been distilled and summarized in two short published reports (LaBianca 1976 and 1978a), most of it remains undigested, except for what has been used for this chapter and Volume 4 of the Hesban final publication series.

It was the launching, in 1977, of the Hesban final publication project which provided the impetus to further ethnographic fieldwork in the project area (LaBianca 1977). At first, it was felt that such fieldwork should focus on husbandry practices by project area villagers (LaBianca 1978a). It soon became clear, however, that such a limited focus could not adequately bridge the increasingly apparent gap between the findings of other lines of research, such as the regional survey and the stratigraphic excavations. Thus, a more fundamental problem began to emerge as the need for integration of the bone finds with the rest of the expedition results became increasingly compelling. This problem was to ascertain the extent to which the variation over time in the intensity of sedentary occupation within the project area, the variation over time in the intensity of occupation at Tell Hesban itself, and the changes over time in the composition of the domestic animals, as seen in the bone remains from Tell Hesban, was attributable to some yet unidentified underlying organizing principle. It was the quest for an answer to this question which gave direction to the fieldwork activities which were carried out in Jordan between October 1, 1980 and March 10, 1981 by the writer and his family (LaBianca 1984). Funding for this research was provided by the American Schools of Oriental Research in the form of a W. F.

Albright Fellowship, by Brandeis University in the form of a Sacchar Fellowship, and by Andrews University in the form of a loan.

While our first three months in Jordan were spent in Amman at the Adventist Orphanage near the University of Jordan, the remainder of our stay was spent living in the home of Issa Ghishan, a long-time resident of Madaba. During our stay in Amman, my time was spent tracking down information about the project area available in the form of scholarly publications, government reports, development agency reports, and verbal accounts offered by a number of experts and other knowledgeable individuals with whom I came into contact. Before leaving Amman, a rudimentary notion of the food system concept discussed in Chapter One had emerged in my mind. I had also determined that what I needed to focus further research upon was the extent to which changes in environment, settlement, land-use, operational, and dietary conditions within the project area were functionally related and could be utilized independently as parameters of food system transitions. If functional interrelationships between these variables could be shown to exist on the basis of empirical data, then a logical case for the existence of an underlying organizing principle in the form of the food system could be advanced. It was in order to gather such empirical data *on the ground* that we moved to Madaba.

Madaba was the base from which we visited the 31 hamlets, villages, and towns located within a 10-km radius of Tell Hesban (fig. 3.1): Kefeir el Wakhyan, Al Loba, Qaryat el Mukheiyat, Uyun Musa, Kefeir Abu Sarbut, Kefeir Abu Khinan, El Jureina, Gharnata, El Aresh, Mushaqqar, Hesban, El Manshiya, El 'Al, Es Samik, El Mansura, El Rawda, Umm el Quttein, Naur, El Amiriyah, El Adissyah, Khirbet Abu Nukleh, Umm el Asakar, Umm el Basatin, Umm el Gabbya, Umm el Amad, Umm el Zeituna, Umm el Rummana, Manja, Hanina, Jalul, and Madaba. Our observations and interviews in these villages were guided by the use of an observation guide developed while still in Amman (LaBianca 1984). This guide (fig. 3.2) prompted us to make note of the topography of the village hinterland, landuse in the village and on its hinterlands, operational facilities in the village and in its hinterland, the village settlement pattern, and any ancient agricultural installations within the village or in its hinterland.

Plate 3.1 Lawrence T. Geraty, Heshbon Expedition director '74 and '76 campaigns, standing beside G. Ernest Wright, his former professor at Harvard, on the latter's visit to Hesban in 1974

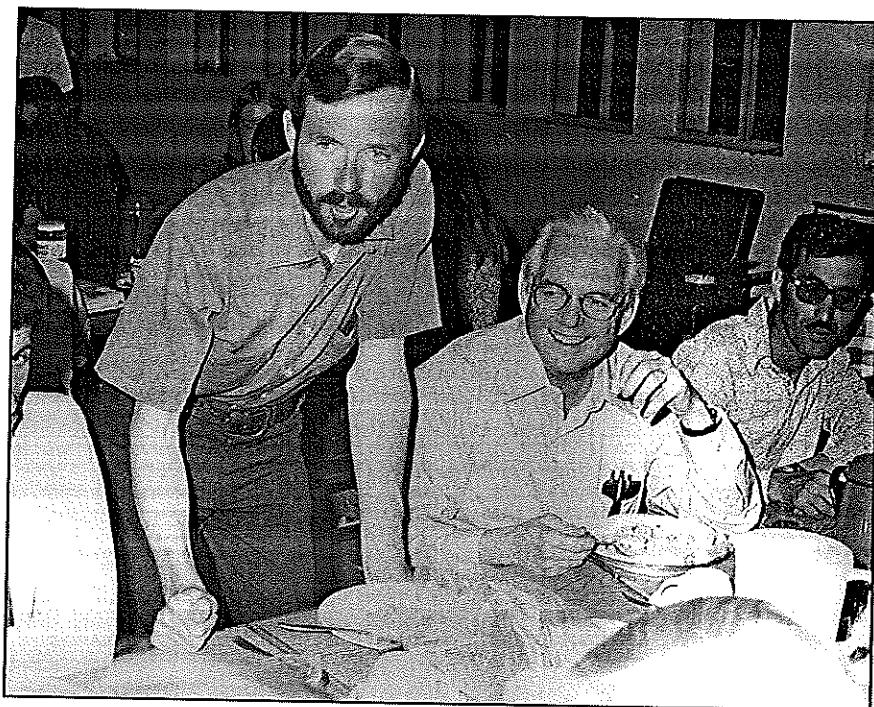


Plate 3.2 Ethnography team at work: Asta Sakala LaBianca, author, Del Downing, Samir Ghishan, and Mary Ann Casebolt



Fig. 3.1 Project area villages ca. 1975

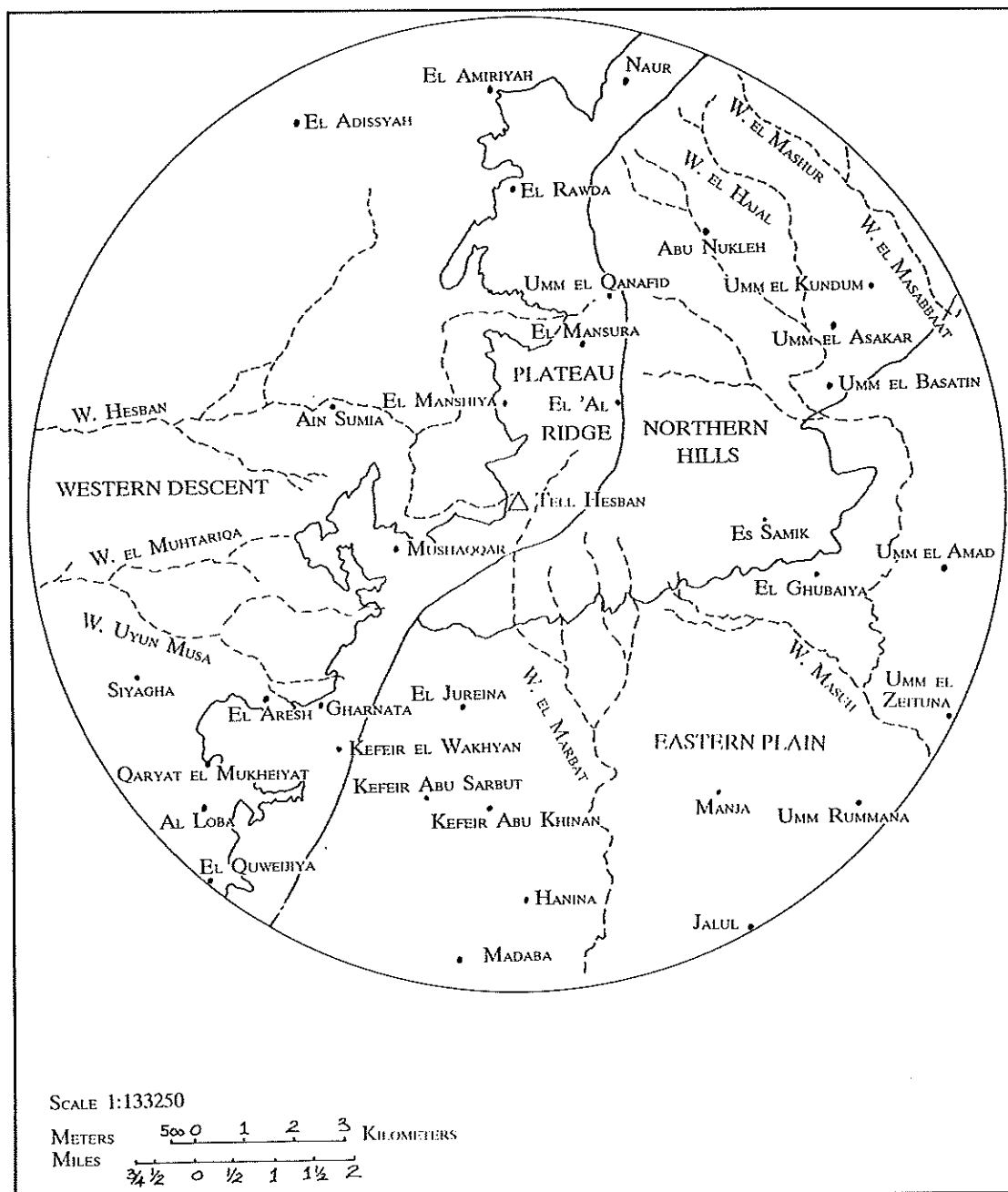


Fig. 3.2 Village food system survey observation guide

DATE _____	ROAD SIGN SPELLING _____
VILLAGE NAME _____	PANORAMIC APPEARANCE _____
KM FROM MAIN ROAD _____	LOCATION ON MAP VERIFIED _____
CONDITION OF ACCESS ROAD _____	

A. TOPOGRAPHY

1. Slope—no slope, less than 20% slope, 20-40% slope, 40-60% slope, more than 60% slope
2. Ease of Cultivation—easy, medium, hard
3. Soil Depth—in meters of cultivatable soil
4. Soil Texture—heavy clay loam, calcium soil, light clay loam
5. Biochemical Status—high Ph, normal Ph, acid
6. Soil Stability—good, fair, poor
7. Vegetation—batha, garigue, woodland, forest

B. LANDUSE ON VILLAGE HINTERLAND

1. Tree Crops—olives, grapes, almonds, pears, apricots
2. Vegetable Crops—tomatoes, cucumbers, lentils, cauliflower, eggplant
3. Cash Crops—tobacco
4. Grain Crops—wheat, barley, millet, sorghum, maize
5. Pasture Animals—sheep, goats, local cattle, foreign cattle
6. Barnyard Animals—chicken, geese, turkeys, doves, rabbits, pigs

C. OPERATIONAL FACILITIES

1. Waterworks—reservoir, cisterns, aqueducts, water tanks, water-line hook-up, pumping stations, roof-collection facilities
2. Terracing Works—terraced wadis, terraced slopes, diversion dams, detention dams
3. Draft Power—camels, oxen, horses, mules, donkeys, tractors
4. Processing Works—olive presses, grape presses, mills, threshing grounds, combines
5. Fencing Works—stone fences, wire fences, mud fences, brush fences
6. Animal Shelters—caves, tents, old buildings, aluminum sheds
7. Storage Installations—silos, granaries, storage buildings, large jars
8. Transportation—pickup trucks, large trucks, horse-drawn carriages, camels, donkeys, private cars
9. Communication—paved roads, dirt roads, paths, radios, televisions, post offices

D. VILLAGE SETTLEMENT PATTERN

1. Fixity—degree to which community is migratory or sedentary
2. Compactness—dwellings clumped close together, dwellings strung out along roads, dwellings widely dispersed
3. Size—1-10 dwellings, 11-25 dwellings, 26-50 dwellings, 51-100 dwellings, more than 100 dwellings
4. Type of Dwellings—Neo-Roman stone houses, simple unpainted cement houses, elaborate painted cement houses, add-on cement houses, mud houses, tents, caves, shacks
5. Public Buildings—mosques, shops, schools, meeting halls, post office, suq, government office buildings
6. Ethnic Groups—Ajarmeh, Circasians, Palestinians, Thoabyya, Nabulsi, Sarabne, Belqawie, Keratchi, Azzizat, Maayeh

E. ARCHAEOLOGICAL REMAINS

1. Waterworks—reservoirs, cisterns, aqueducts, water-lifting works
2. Terracing Works—terraced wadis, terraced slopes, dams
3. Processing Works—wine presses, olive presses, mills
4. Fencing Works—stone fences, mud fences, large walls
5. Animal Shelters—caves, kraals, stables
6. Storage Installations—silos, granaries, storage buildings, jars
7. Communication—paved roads, communication towers
8. Domestic Dwellings—mud houses, stone houses, caves
9. Public Buildings—temples, churches, mosques, baths
10. Fortifications—large walls, guard towers
11. Pottery—Iron, Persian, Hellenistic, Nabatean, Roman, Byzantine, etc.
12. Bones—sheep or goat, cattle, equine, poultry, fish, etc.
13. Tombs—Islamic, Byzantine, Roman, Iron, Bronze

During our visits to most of these villages we were accompanied by an English-speaking local resident familiar with the terrain, the people, and local agricultural practices. The duration of our stay in each village ranged from half an hour in the case of some of the smaller hamlets to twenty or more hours (in the course of several different visits) in the case of some of the more important villages and towns, such as Hesban and Jalul. A considerable amount of time was also spent in interviews with a number of local residents obtaining oral accounts of the changes which have occurred in their lifetime within the project area and in obtaining population and production statistics for each of these settlements available from government district offices in Madaba, especially the Department of Agriculture Extension Office.

While all of the above activities were essential to the fulfillment of our research objectives in Jordan, what led to the deepest insights into the traditional way of life of people in this part of the world was our own experience in trying to meet the requirements of daily existence as a family. Despite our previous visits to Jordan and acquaintance with the experiences of others, we had really very little experiential understanding of how much time and effort goes into the quest for food when such modern conveniences as processed and prepared foods, refrigerators, and microwave ovens are not to be used. Though available for a price in Jordan, we had chosen to live without these conveniences.

When the lentils or rice you buy at the market need first to be sorted to get rid of small stones; when bread, milk, and produce must be bought daily from the shops for lack of refrigeration; when entrees must be made each day from scratch from seasonally available vegetables, nuts, and fruits (as we prepared only vegetarian meals for ourselves); when the laundry must be done by hand; and when all errands are to be made on foot (as we had no car available except during certain days when we conducted our village survey), the quest for food becomes an all-day undertaking rather than the quick stop in the kitchen or at McDonald's which it so easily can be for most of us in the West. Add to this the labor which was involved in traditional methods of producing food on the land in the first place, and one becomes readily convinced that for most

people involved in rural livelihoods, the activities involved in the production, distribution, preparation, and consumption of food accounts for the major portion of how they spend their day-time hours, what they work at and make, and with whom they interact on a daily basis. Thus, our own daily-life chores in Jordan provided a sort of existential validation and understanding of why a food-system perspective might prove to be a good starting point for studying the connections between innumerable daily-life activities and recurring themes in the material culture of peoples in this part of the world today and in the past.

A final procedure in the investigations concerned with the recent past involved locating and obtaining copies of as many as possible of the 19th and early 20th century sources dealing with Jordan and the project area. Although this research will continue for a long time, a good start was made, thanks to the holdings of a number of libraries in Amman and Jerusalem and in the United States, including the considerable holdings of the James White Library at Andrews University. As stated earlier, these literary sources have been utilized in supplementing and cross-checking the recollections of informants and in validating my own reconstructions of changes in the food system based on what I observed and heard in the course of carrying out the above fieldwork activities.

Previous Investigations in the Project Area

Of the hundreds of explorers and travelers who visited Palestine in the 19th century, at least a dozen of those who published accounts of their travels passed through the territory making up our project area. Probably the first of these was Ulrich Jacob Seetzen (1813), a German explorer who offered a brief account of the ruins of Hesban which he visited in 1806. Others who followed him to points within the project area included Charles Leonard Irby and James Mangles (1823), John Lewis Burckhardt (1822, 1831), J. S. Buckingham (1825; cf. pl. 3.3), Alexander Keith (1844), William F. Lynch (1849), Felicien de Saulcy (1853), Henry B. Tristram (1865, 1873, 1880), Captain R. E. Warren (1869), E. H. Palmer (1872), Henry C. Fish (1876), Selah Merrill (1877, 1881), Lieutenant H. H. Kitchener (1878), William M. Thomson (1880), Guy Le

Strange (1886), and Major Claude R. Conder (1889, 1891, 1892).

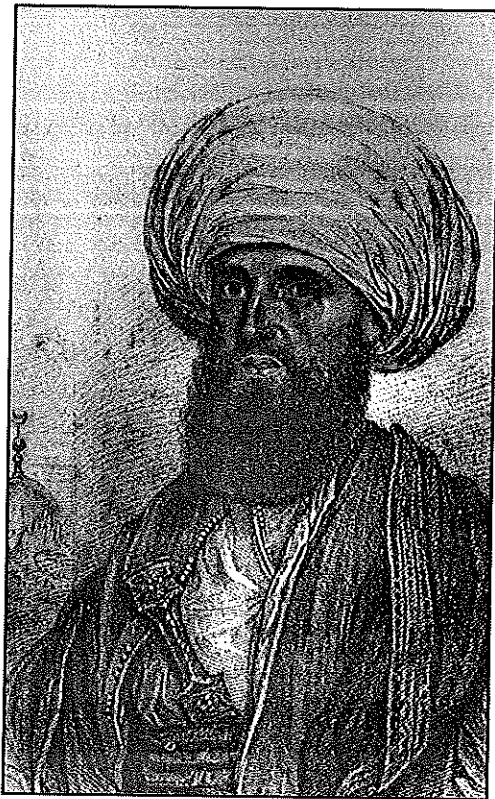


Plate 3.3 Portrait of James Silk Buckingham (after Ben-Arieh 1983)

While all of these visitors were ultimately interested in the antiquities of Jordan, particularly those related to biblical history, they were, to varying degrees, also interested in the contemporary conditions of the landscape and the people with whom they came into contact. This interest in the contemporary population stemmed partially from practical concerns and partially from an interest in contemporary Arab customs reminiscent of biblical stories. A good example of why an acquaintance with the contemporary inhabitants of the project area was of practical interest to the 19th century explorers is Tristram's experience in trying to visit biblical Heshbon and "the land of Moab," the region along the eastern highland of the Dead Sea. In his first attempt to do so, he employed Goblan, a sheikh of the Adwan tribe, as his guide. Upon reaching the borders of Moab, he discovered that his guide was unwilling to accompany him to points south of Hesban, for this was enemy territory under the control of

members of the Beni Sakhr tribe. In his second attempt to explore this territory he had learned his lesson, having sought out the services of a Beni Sakhr guide to accompany his team.

By far the two most outstanding accounts of sights, tribal life, and customs east of the Jordan during the latter part of the 19th century, are those published by Tristram (1873) and Conder (1889). Tristram's publications contain detailed descriptions of the landscape through which he traveled, and include extensive accounts of species of plants and animals found in a particular location, the way of life of native inhabitants encountered along the way, names of local personalities and tribes, and descriptions of ruins which include discussions of their ancient origins and significance, and their current state of preservation and use. Conder was even more meticulous in descriptions of ancient ruins and contemporary tribal relations and personalities, although his accounts are less concerned with the natural history of the terrain which he surveyed. Since both of these explorers included in their publications beautifully crafted drawings of much of what they saw, their works are indispensable to the student of the recent past east of the Jordan.

During the early decades of the present century reports by British military men and foreign service personnel also began to appear, some of which contain information dealing with the project area. Examples of such sources include the publications of Frederick G. Peake—also known as Peake Pasha—(1935), John B. Glubb (1938), Eliahu Epstein (1938, 1939), A. S. Kirkbride (1945), and G. F. Walpole (1948). To these can be added three important handbooks prepared by Baedeker (1876), Luke (1924), Luke and Keith-Roach (1930) and accounts by missionaries (Forder 1909), travelers (Bell 1927; Seabrook 1927), and explorers (Musil 1907, 1926, 1927, 1928; von Oppenheim 1943). Also noteworthy is A. Konikoff's (1943) economic survey of Palestine which was published by the Jewish Agency.

With the arrival of a central administration in Jordan in 1921, the collection and publication of statistical information by various government bureaucracies got underway. Particularly valuable for the present study are the census reports on agriculture prepared by the Department of Statistics since the early 1960s. Maps produced by many of the 19th century explorers, and by the

British and Jordanian governments, represent another important source of information utilized in this study.

Finally, during the past two decades a number of ethnographic inquiries have been completed which have been based on fieldwork either within the project area or involving ethnic groups represented within it. Specifically dealt with in these publications are the following project area ethnic groups: the Beni Sakhr of Manja and Jalul, the Arab Christians of Madaba, the Circassians of Naur, the Abujaber family of Yadoudeh, and the Ajarmeh clans of Hesban and its daughter villages. The first of these to be completed was one in which the "lore and customs of the Beni Sakhr tribe" were investigated in order to make possible a comparison "with those contained in the Book of Judges" in the Bible (Merry 1969). The object of this study was to gain further insight into the process of settlement of the Hebrews during the time of the Judges through comparison with the process of settlement of the contemporary Beni Sakhr tribes.

More recently, the process of sedentarization among the Beni Sakhr has also been studied by Hiatt (1984) and Bocco (1984a, 1984b, 1984c). In Hiatt's view, the process of sedentarization in Jordan is best understood as an adaptive response by camel nomads to the gradual efforts of the state to inhibit their movements, prevent them from raiding the settled population, and hire their sons for military service. Thus sedentarization is seen as a process of *encapsulation* of the nomadic groups within larger entities such as the state. Interestingly, while Hiatt has emphasized the state's role in encapsulating smaller groups without resorting to forced sedentarization policies, Boneh (1983), who has studied sedentarization of nomads in the Sinai, has emphasized the encapsulating efforts of the nomadic groups themselves in order to solidify the unity of the group in the face of forced sedentarization by the state.

The process of settlement of the town of Madaba has been briefly dealt with in two dissertations, one by Gubser (1973), the other by Allison (1977). While Gubser's research dealt primarily with sociopolitical changes in the Kerak region since the previous century, the fact that several families from Kerak fled to Madaba following a blood feud and became the first families

to settle there, is briefly dealt with in his book. A more in-depth and recent study of the Christian families of Madaba is found in Allison's (1977) dissertation, which dealt with "patrilateral parallel-cousin marriage with its related honor syndrome" among these families. Insofar as this study also includes a brief discussion of the history of the town and offers a general overview of the cultural patterns of its Arab Christian inhabitants, it represents a useful source of background information for the present investigation.

In addition to these studies of Beni Sakhr tribesmen and of the Christians of Madaba, mention must also be made of recent studies of a third ethnic group represented within the project area, namely the Circassians. Two studies of this important ethnic group are of interest to the present investigation—the first an article by Weightman (1970), and the second a doctoral dissertation by Shami (1984), herself a Circassian. Whereas Weightman's article is concerned with the rise of this ethnic minority to political power and influence in the country of Jordan as a whole, and the consequences of this for the Circassians as a group, Shami's research utilizes the experience of the Circassians as a people in an exploration of how the rise of the monarchy and clientelism in Jordan ultimately affected their solidarity as an ethnic minority. Her study concluded that, in contrast to the Bedouin of Jordan, whose patrilineal social structure was strengthened as a result of the clientelism of the monarchy, the Circassians, as a corporate ethnic group, were weakened because their traditional social structure "was one of mutually exclusive extended families, which did not provide a unified leadership for the Circassians as a whole" (Shami 1984: 138).

Another recent contribution to ethnographic literature of the project area is Abujaber's (1984) study of his own village, namely the village of Yadoudeh. Abujaber's research has focused on the role of his family in introducing modern agricultural techniques to Jordan. It traces the early 19th century roots of his family to the village of Nablus on the western side of the Jordan River, and describes the partnerships which were formed between his forefathers and the Beni Sakhr sheikhs for their mutual benefit. The careful attention to details of land use and land tenure within a portion of the project area

makes this an important source of background information for the present investigation.

Not dealt with in any of the above studies are the descendants of the Belqa tribes such as the Adwan and Ajarmeh. Ethnographic research concerned with the latter is restricted to what has been published by Peake (1958) and LaBianca (1976), whereas a limited amount of unpublished research is available about the former (Fikery 1979). Also missing are contributions dealing specifically with the settlement and integration of Palestinian refugees into the towns and villages of the project area. This process will be briefly discussed in the present chapter.

Finally, much in the way of general understanding of the social anthropology of Jordan can be learned from the publications of investigators dealing with other communities and tribes in Jordan. The pioneering studies of village communities in Jordan carried out by Lutfiyya (1966) in the village of Baytin, by Antoun (1968, 1972, 1979) in the village of Kufr al Ma, and by Gubser (1973) in the town and hinterland of Kerak form the foundation of modern community studies in Jordan. Modern anthropological studies dealing with the Bedouin of Jordan are now also beginning to accumulate. Among the current contributors to this literature are Lancaster (1981) who has been concentrating his research on the Rwala; Layne (1984) whose work has been among the Jordan Valley Bedouin; and Abu Jaber, Gharaibeh, Khasawneh, and Hill (1976) who have written about the Bedouin of Northeast Jordan. A number of books dealing with social, economic, and political conditions of the country of Jordan as a whole have also been published, mostly by individuals with political science backgrounds (Abidi 1965; Aruri 1972; Glubb 1938, 1948; Gubser 1973, 1983; Morris 1959; Nyrop *et al.* 1974; Patai 1958; Peake 1958; Shwadran 1959; Sinai and Pollack 1977; and Vatikiotis 1967). Of these works, the writer has only made use of those by Glubb, Gubser, Peake, and Vatikiotis.

A Varied Habitat

As mentioned briefly in Chapter One, the location of the Hesban project area is along the mountain plateau which rises to the east of the northern tip of the Dead Sea (pls. 3.4, 3.5). It is

located almost exactly halfway between the Wadi Zerka (Jabbok) to the north and the Wadi Mujib (Arnon) to the south along the edge of the Madaba plateau. As a place for humans, plants, and animals to live, the Hesban project area is a varied habitat, offering a range of different local environments where food, shelter, and protection may be found by animals and peoples alike. What accounts for this environmental variability is that it straddles a territory containing the piedmont and foothills area which rises to the east of the hot Jordan River-Dead Sea lowlands; a sharply eastwardly ascending mountainous area containing numerous springs, perennial streams, and seasonally flooding wadis meandering through herbaceous valleys and escarpments; a hilly plateau area with fertile valleys and wadi bottoms which receives a relatively reliable supply of rainwater; and a gently sloping plain to the southeast of this hilly region containing shallow wadis and excellent agricultural soils.

Standing on the summit of Tell Hesban, ca. 895 m above sea level, one has a panoramic view of this varied habitat. To the north lie the northern hills, some of which seem to be gently rolling, others appearing as steep escarpments (pl. 3.6). To the west are slopes which descend gently at first, then more steeply down into the Jordan Valley (pl. 3.7). To the south and east lie the southern and eastern plains, which disappear in the horizon to the south (pl. 3.8) and in the desert to the east (pl. 3.9). Looking north and west, one notices small patches of cultivated land in the valleys and on the gentle slopes, and in the distance scrub and forest clinging to the bedrock which outcrops all over in these northern hills and western escarpments. Looking toward the plains to the south and east, one sees large expanses of cultivated fields interrupted only by a village settlement here and there and the modern road which comes from Naur and continues to Madaba.

As indicated in Chapter One, the Hesban project area has been divided, for analytical purposes, into four principal topographical subregions: *western descent*, *plateau ridge*, *northern hills*, and *eastern plain* (see fig. 1.3). As we shall see next, these subregions are distinguishable along several dimensions, including elevational variability, temperatures, water availability, soils, plant, and animal life.

Plate 3.4 Aerial view of Tell Hesban 1979 (courtesy of Richard Cleave); view east

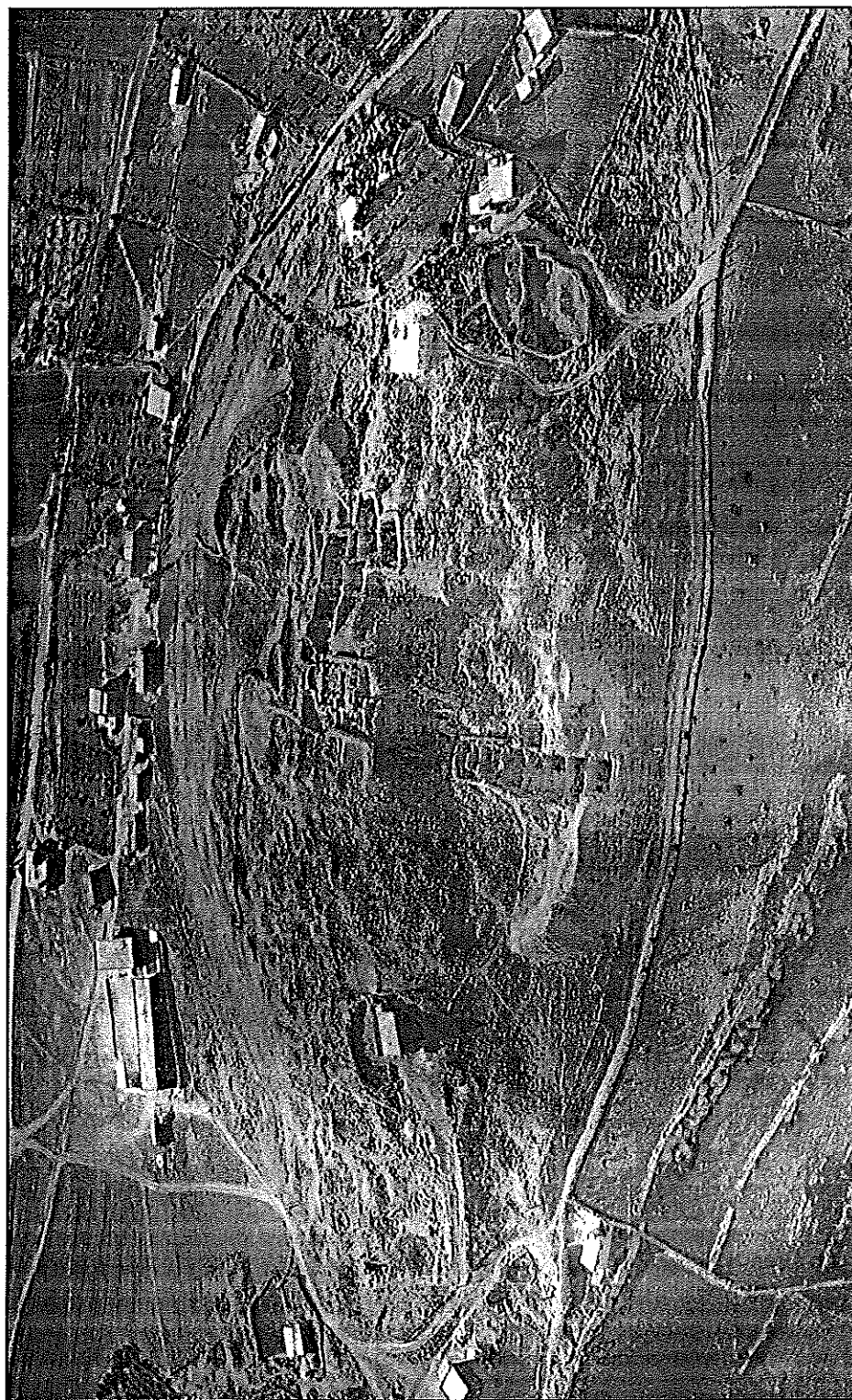


Plate 3.5 Aerial view of the Hesban region 1979 (courtesy of Richard Cleave); view east

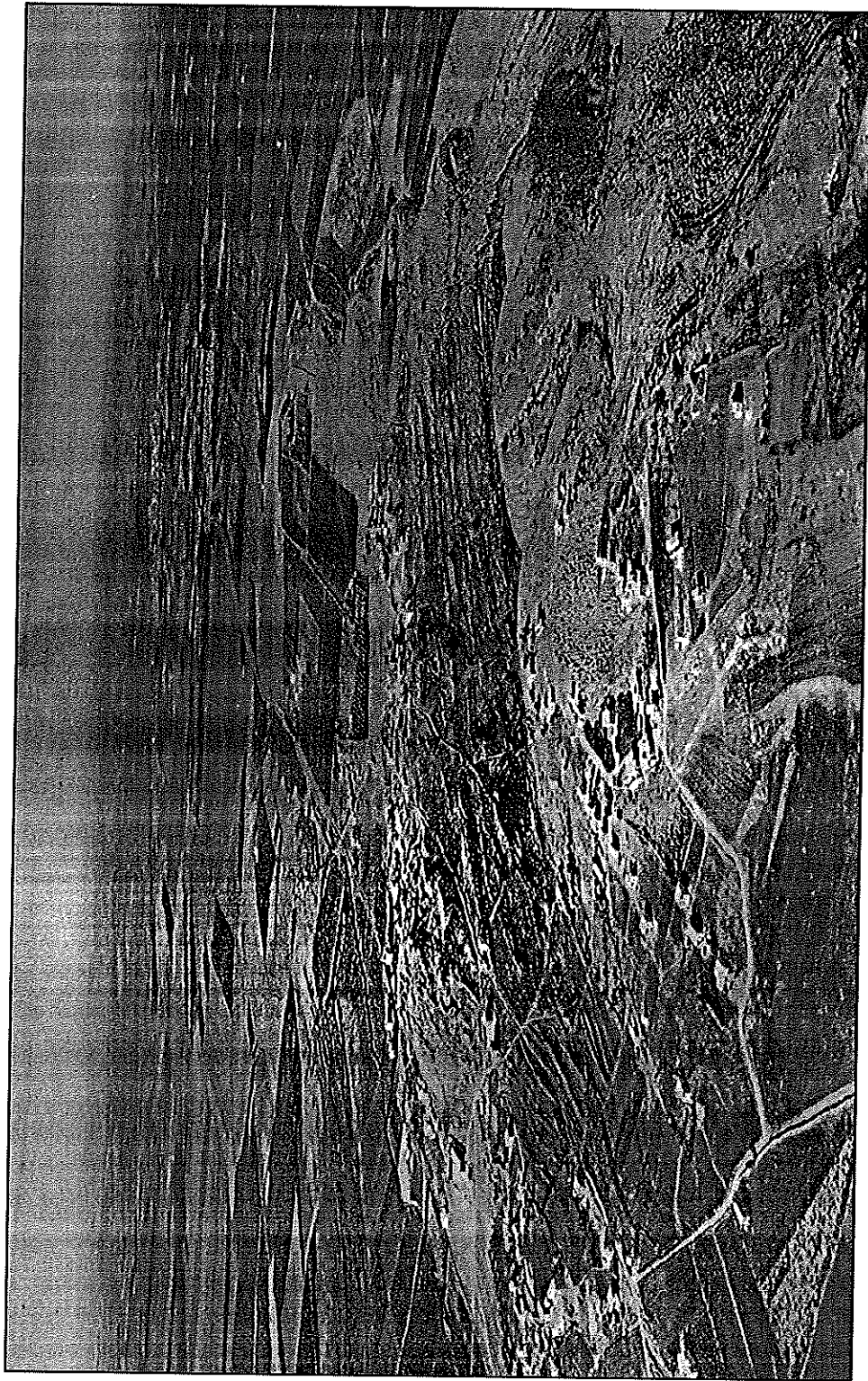


Plate 3.6 Looking northward from Tell Hesban (1973)

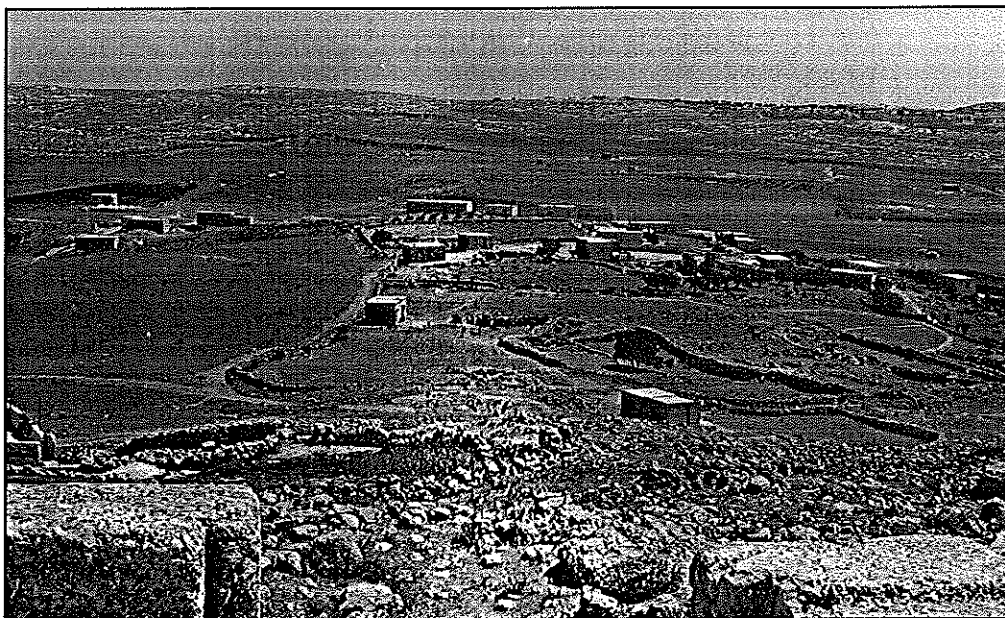


Plate 3.7 Looking westward from Tell Hesban (1973)



Plate 3.8 Looking southeastward from Tell Hesban (1973)

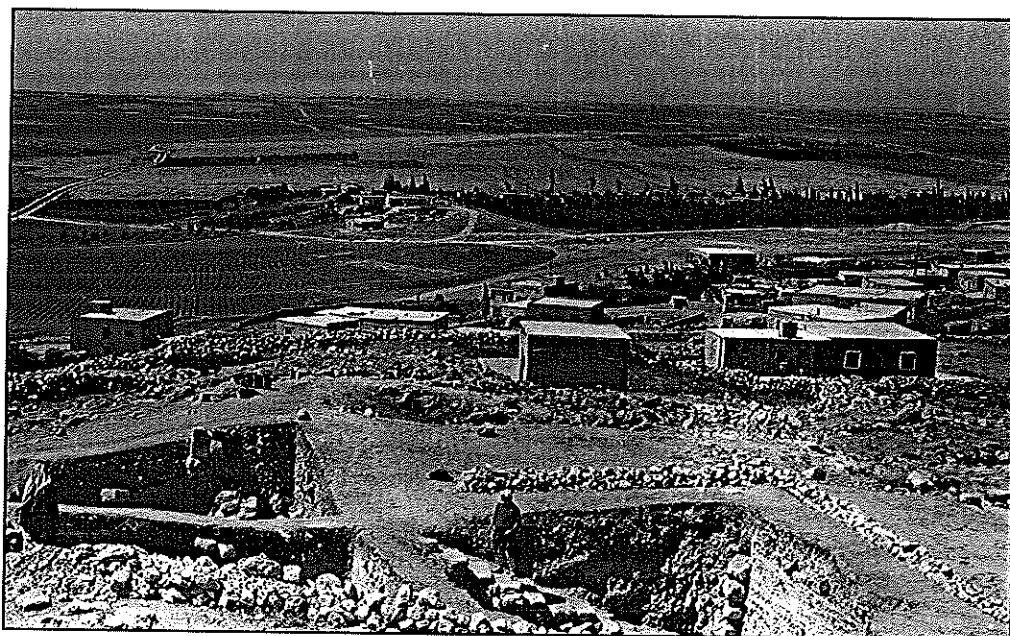
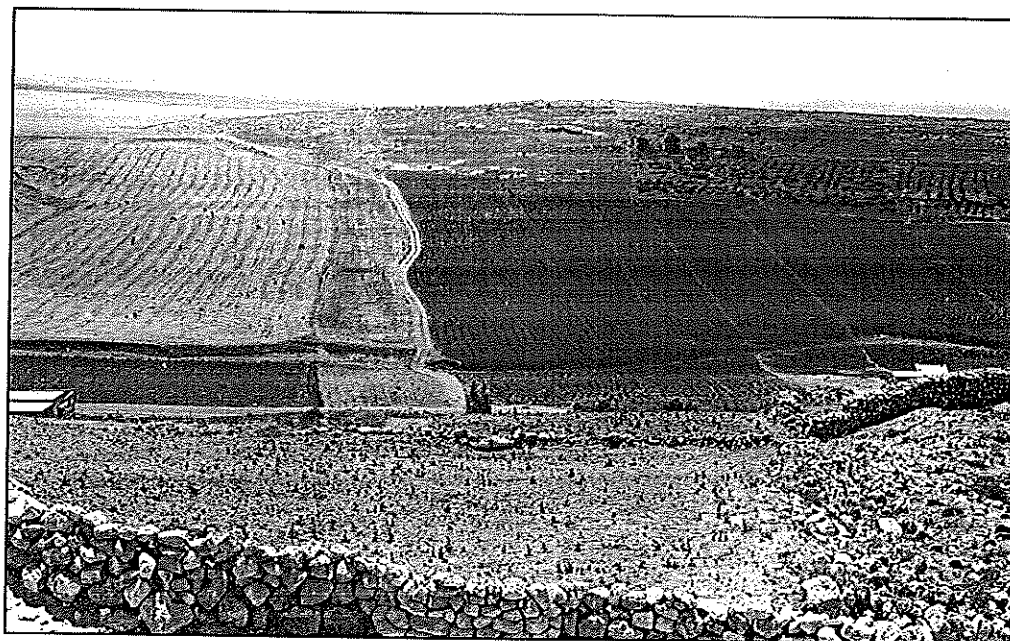


Plate 3.9 Looking eastward from Tell Hesban (1973)



The most varied in terms of all of the above mentioned dimensions is the western descent. Because of extreme elevational differences, ranging between approximately 100 m and 800 m, temperatures along the lower elevations of this sub-region run about four degrees higher than temperatures along its upper elevations. Thus in January, the mean daily temperatures run about 12° C in the lower piedmont area, compared with 8° C along the highland ridge. In July, the difference is 28° C versus 24° C. Rainfall is also uneven, the amount increasing as one ascends upward toward the ridge (figs. 3.3-3.5). Thus, in an average year, rainfall is less than 250 mm along the lower elevations and above 400 mm near the upper elevations. In a dry year, the upper elevations may receive less than 200 mm, and the lower ones less than 100 mm. In a wet year, the difference is between 600 mm in the upper elevations and 400 mm in the lower ones.

Streams and wadis in the western descent carry rain and spring waters to the Jordan River-Dead Sea basin below (fig. 3.6). Its principal wadis are the Wadi Hesban and its tributaries—among which are Wadi Majarr immediately adjacent to Tell Hesban—and the Wadi el Muhtariqa and its tributaries, among which is Wadi Uyun Musa which is located in the slopes below Mount Nebo. About a dozen springs were identified by Conder (1881) within this subregion, the most productive ones being the ones at Ain Hesban and at Uyun Musa. These springs owe their existence to underground aquifers replenished each winter by rainwater which has drained below the ground from surfaces higher up (see fig. 3.7).

In the valleys and wadis of the western descent Yellow Mediterranean Soils predominate (see fig. 3.8). Compared with the Red Mediterranean Soils found in the plains and hills above, these soils are less favorable for agriculture. Even so they are extensively used for both field crops and grazing; and in the vicinity of certain of the more productive wadis, irrigated agriculture is practiced. In eroded bedrock areas and along the steeper slopes of the western descent, Yellow Soils and young Regosolic Soils predominate. These soils have much lower ability to retain water than do typical Red or Yellow Mediterranean Soils. Their sandier texture and their high stone content render them unsuitable for most agricultural uses except extensive grazing.

The plants found in the western descent have been classified by Zohary (1962) as being transitional to the Mesopotamian Steppe Climax Vegetation Zone (Irano-Turanian Territory). Almost no arboreal climax exists, the predominant vegetation being herbaceous and dwarf shrub communities. A characteristic climax species is *Artemesia herba-alba*, a type of sage. As most of the hilltops and steep slopes are nearly barren, plant communities are mainly limited to wadi bottoms, shaded aspects, and localized areas receiving soil water seepage from higher up and from intermittent wadi drainage. Near springs such as those at Ain Hesban and Uyun Musa, however, vegetation is dense and lush and a wide variety of species of wild birds and animals may be found living nearby (cf. Tristram 1873: 348-350).

The plateau ridge, which runs along the center of the project area from north to south, and the northern hills which extend eastward from this ridge, have many common features. To begin with, this is a region of fertile valleys and hills, ranging in elevation between approximately 800 m and 960 m. In both subregions the mean daily temperatures are about the same, averaging 8° C in January, 16° in April, 24° in July, and 20° in October. Rainfall is also more plentiful than anywhere else within the project area, amounting to 400 mm in an average year, a minimum of 200 mm in a dry year and over 600 mm in a wet year (figs. 3.3-3.5). Along the southern half of the plateau ridge, these rainfall amounts are slightly lower and temperatures are slightly higher. In the vicinity of the village of El Rawda about six km north of Hesban are several springs which empty out into streams and valleys in the western descent (cf. fig. 3.7). Running eastward from the ridge are also a number of shallow and gently sloping wadis, including Wadi el Marbat which lies immediately to the east of Tell Hesban and transports rainwaters into the plains region to the southeast.

The soils which occur in the valleys and hillside slopes along the plateau ridge and northern hills have been classified as Red Mediterranean Soils (see fig. 3.8). The high clay content of these soils enhances their ability to infiltrate and retain water and nutrients for plant use. These characteristics, along with their favorable topography and low coarse fragment content, make them excellent for agricultural use. Although little of

Fig. 3.3 Rainfall distribution (in mm) in a normal year (after Agrar- und Hydrotechnik 1977)

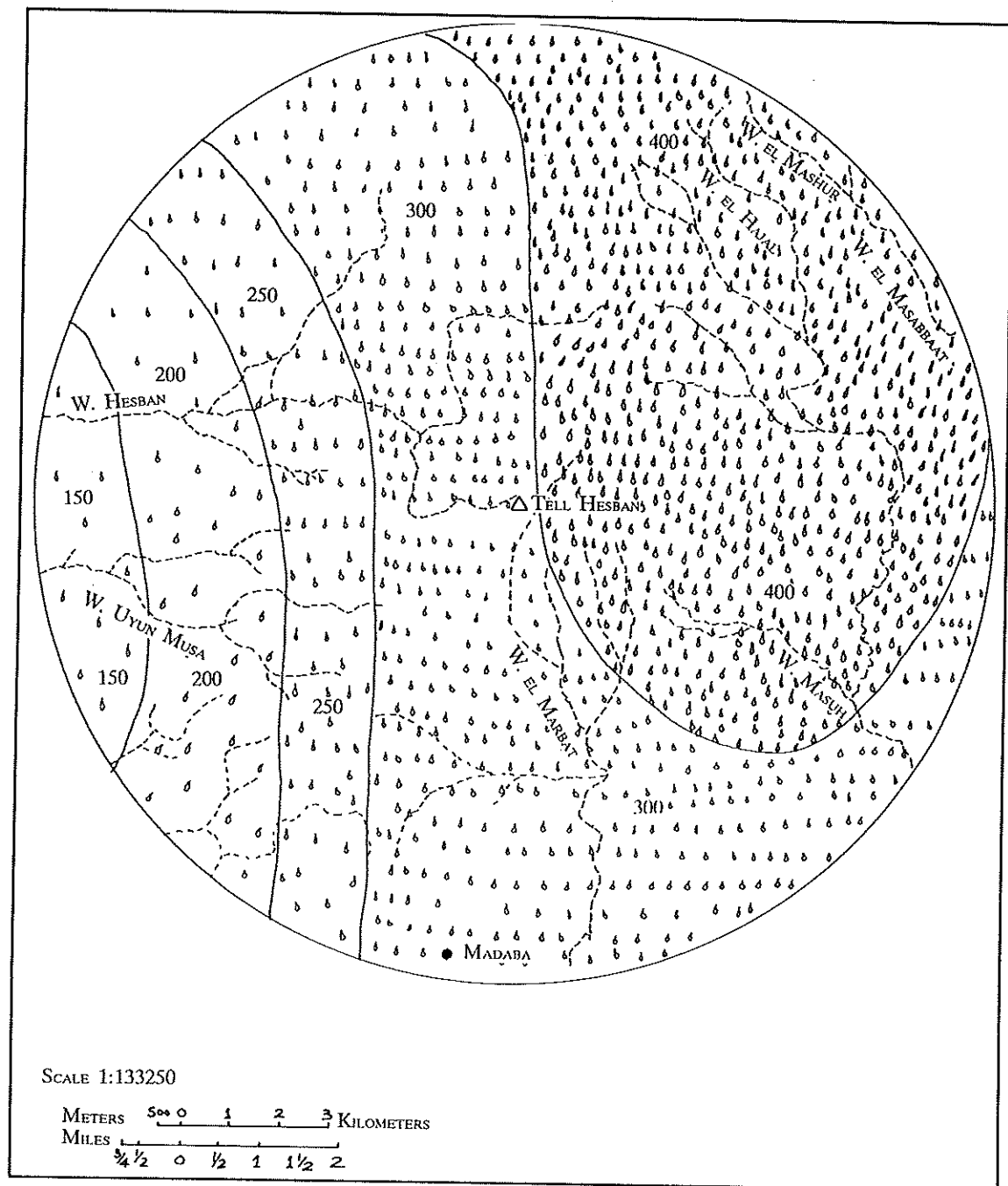


Fig. 3.4 Rainfall distribution (in mm) in a dry year (after Agrar- und Hydrotechnik 1977)

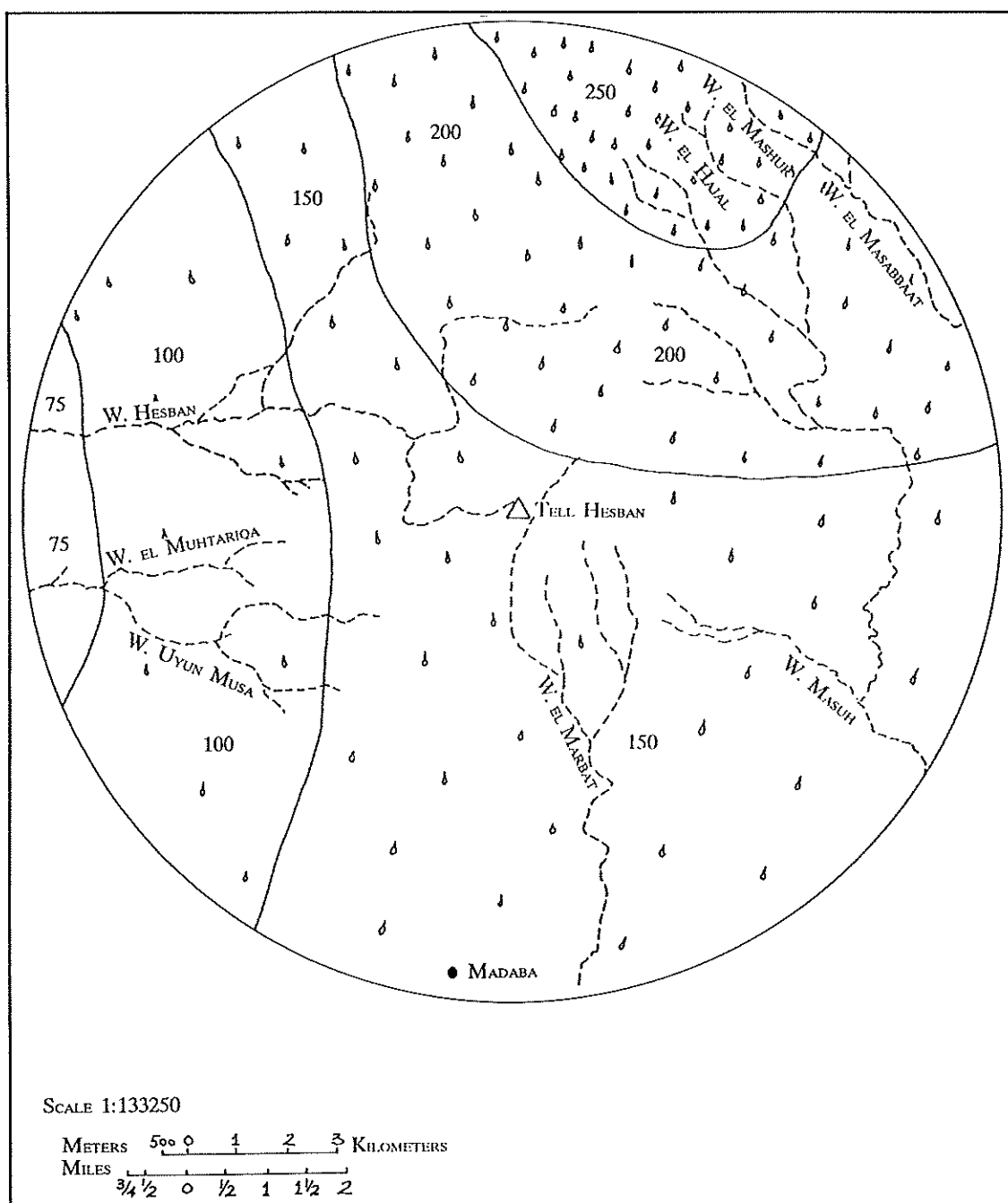


Fig. 3.5 Rainfall distribution (in mm) in a wet year (after Agrar- und Hydrotechnik 1977)

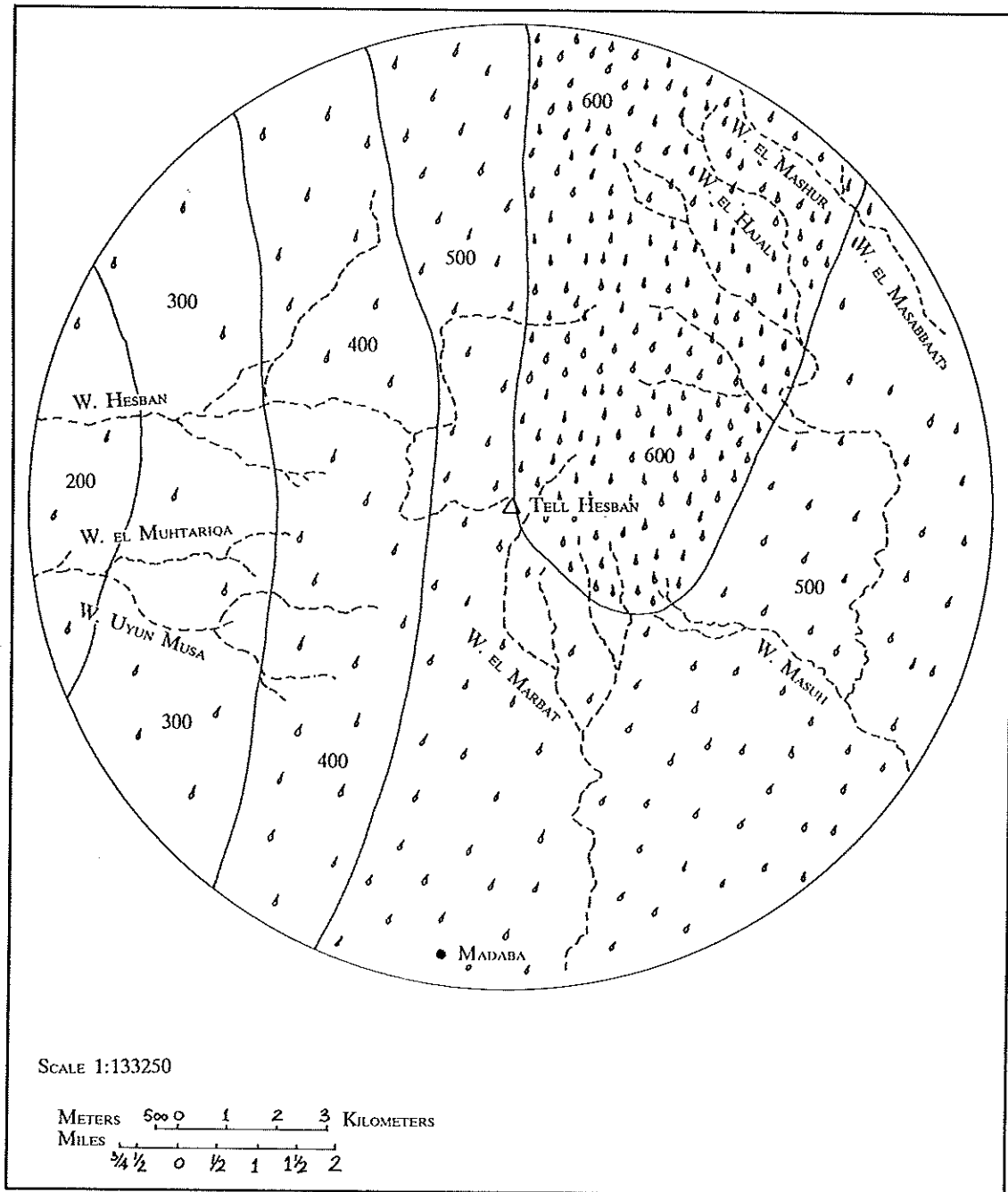


Fig. 3.6 Drainage basins and main river catchments (after Agrar- und Hydrotechnik 1977)

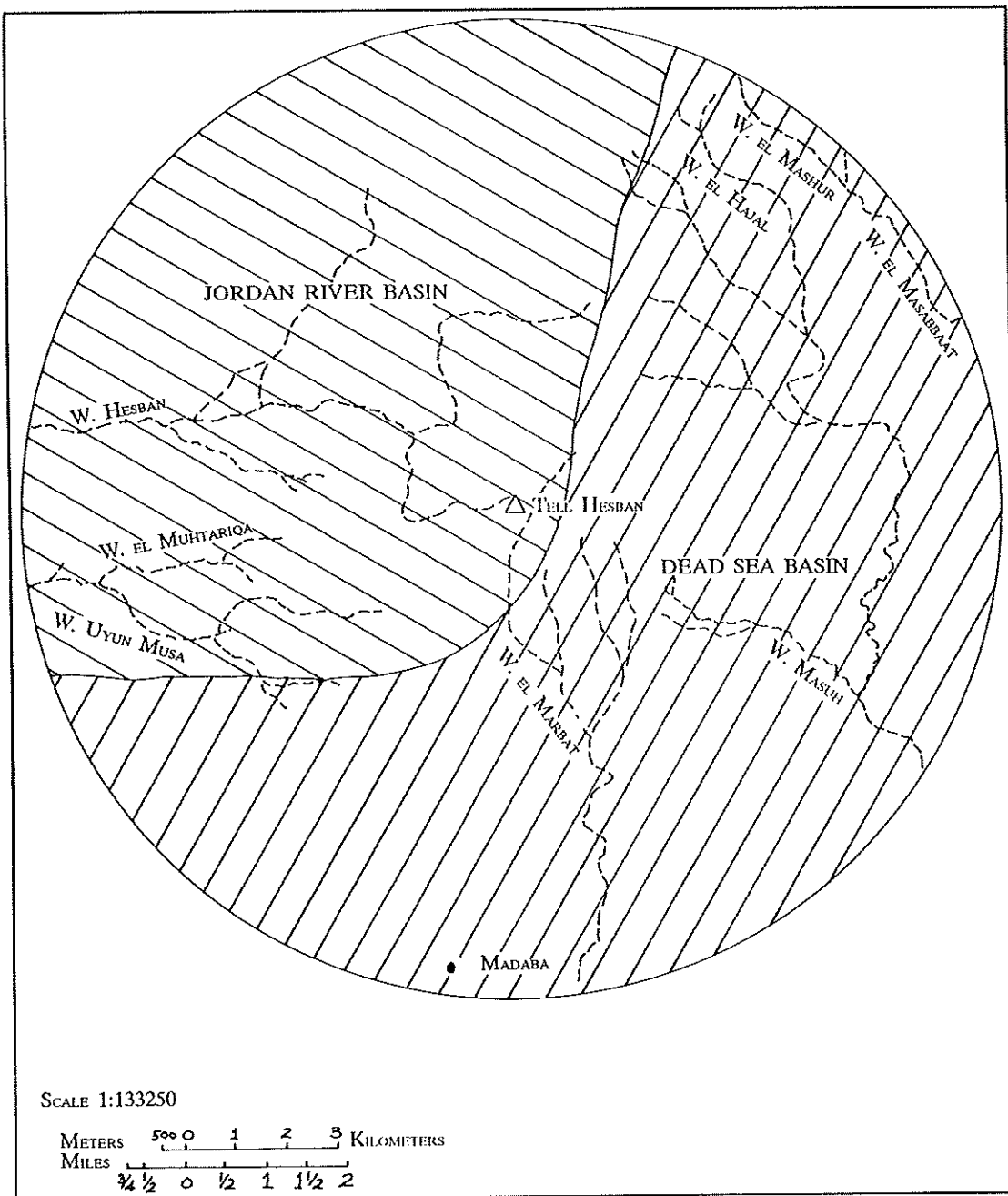


Fig. 3.7 Hydrogeological cross section (horizontal scale 1:250000; vertical scale 1:10000) running through project area (after Agrar- und Hydrotechnik 1977)

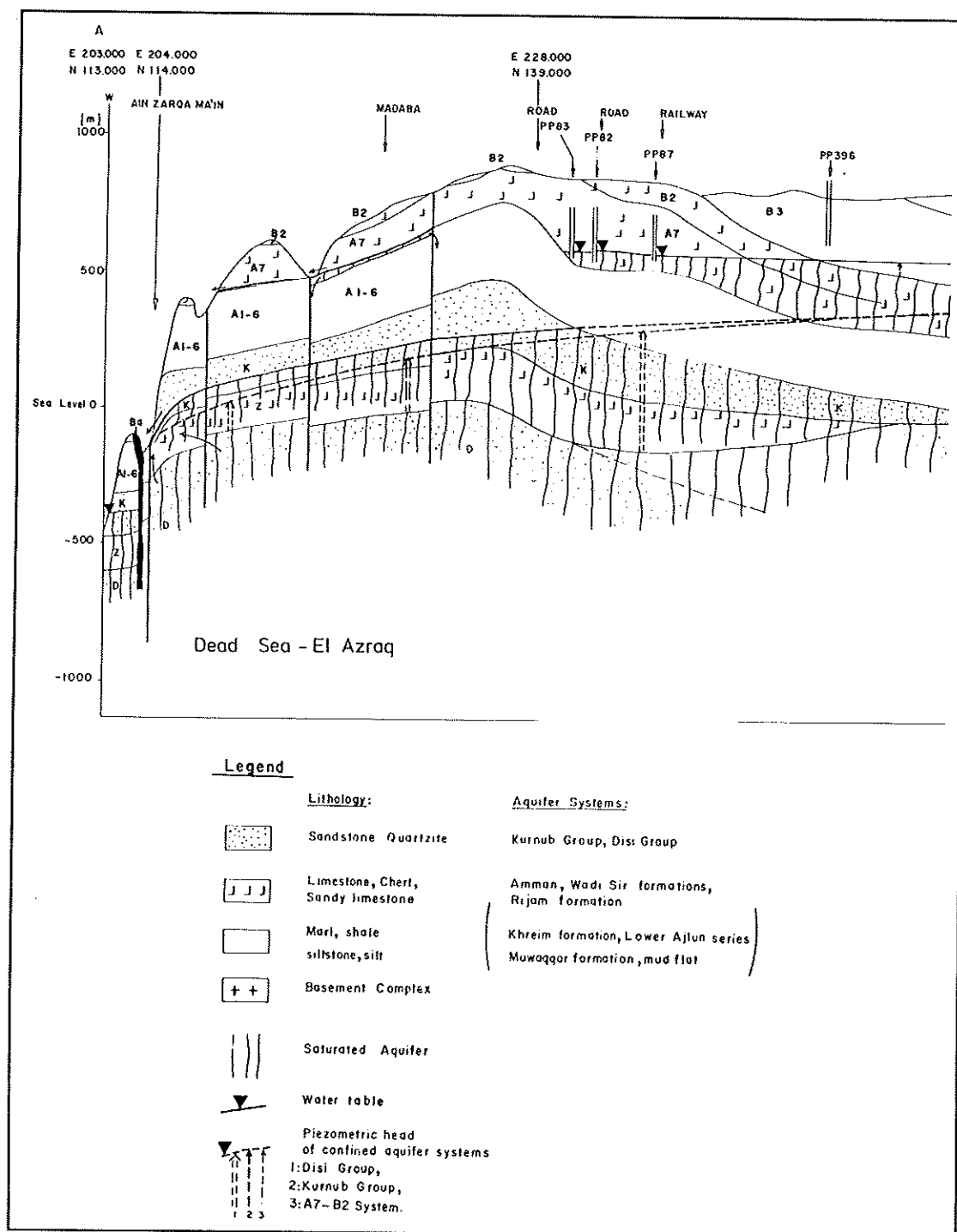
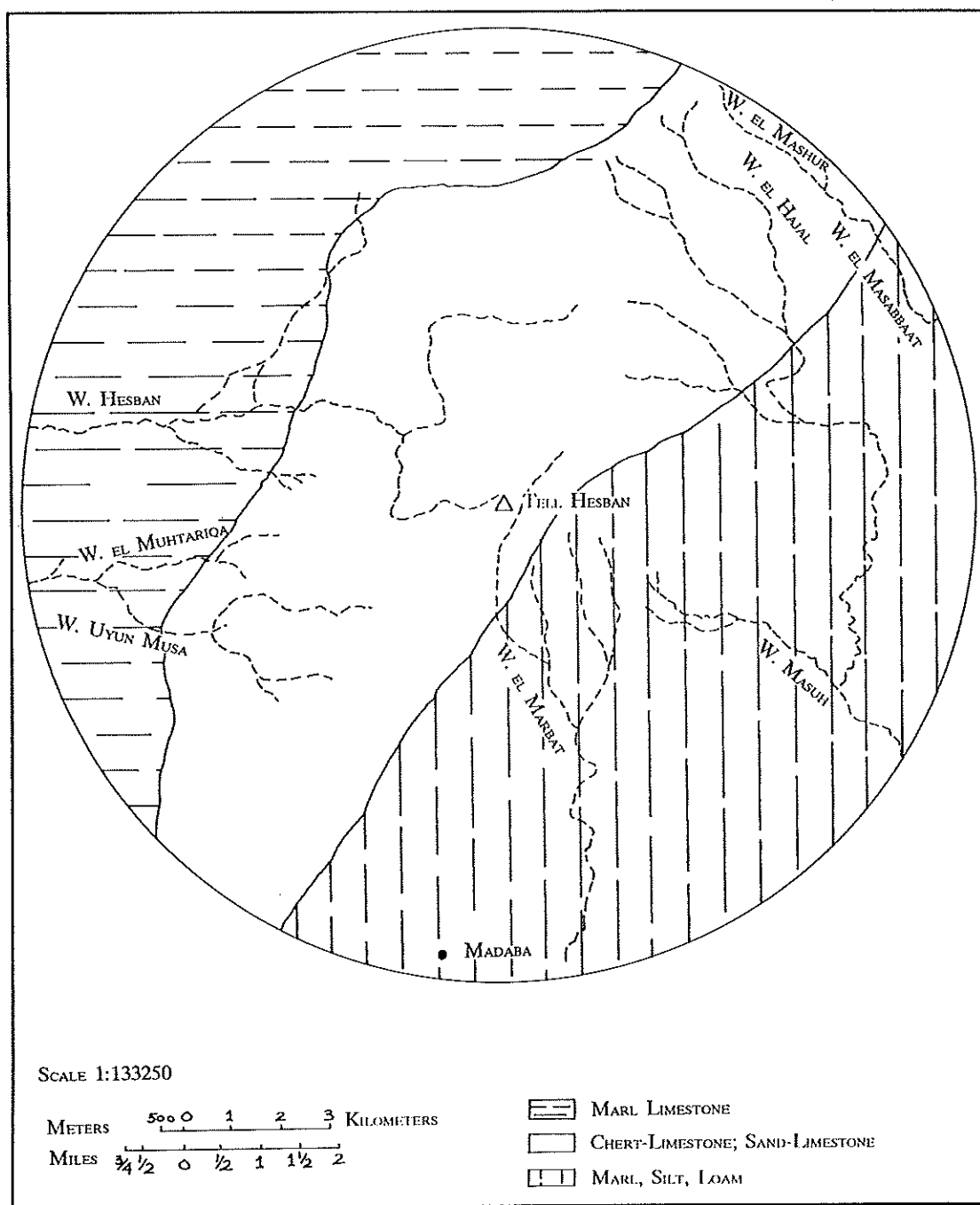


Fig. 3.8 Hydrological soil classification (after Agrar- und Hydrotechnik 1977)



the local natural flora can be found growing on these soils because of extensive cultivation and grazing, from a plant geographical standpoint these subregions have been classified as belonging primarily to the Mediterranean Territory (Zohary 1962: 52). This means that trees such as oak, pistachio, pine, and cypress once covered these hills and valleys, along with thick scrubby underbrush or maquis. In areas of rougher topography between fields, where vegetation disturbance is limited to grazing, thorny and unpalatable plants may be found which are evidence of the degraded state of the present flora. Afforestation on some of the hills attests, however, that this region is still capable of producing its original climax flora.

The fourth of the subregions into which we have divided the project area is the eastern plain. This territory reaches an elevation of about 850 m near the village of Es Samik at the southern edge of the northern hills subregion and descends gently to about 750 m in the vicinity of Umm el Rummana near the southeastern perimeter of the eastern plain. Whereas temperatures in this subregion are about the same as along the ridge, rainfall is generally somewhat less than along the ridge and in the northern hills and it tapers off considerably as one moves toward the eastern perimeter of the project area. In an average year rainfall in this region is between 300 mm and 400 mm. In a wet year it reaches over 500 mm whereas in a dry year it may reach only 150 mm. It is, of course, the eastern portion of this subregion which is the most at risk in terms of rainfall insufficiency. The wadis in this region are generally shallow, draining in an eastwardly direction (figs. 3.3-3.7).

Soils (fig. 3.8) and flora of the eastern plain are largely the same as those found along the plateau ridge and the northern hills, except that the somewhat drier conditions make this subregion a little more limiting in terms of what will grow, especially during dry years. On the other hand, because the topography is nearly level, the eastern plain is ideally suited for production of field crops such as wheat and barley. As grazing lands for herds of pasture animals, especially sheep and cattle, it is also ideally suited.

Except in the vicinity of Ain Hesban, Uyun Musa, and certain of the other perennial springs where certain exotic species of wild birds and

other wildlife can still be observed (Boessneck and von den Driesch 1978a), the animals which still survive within the project area belong mostly to species which have learned to live in association with the human food system. For example, attracted to cereal fields are hares and field mice and their principal predators, the fox and weasel. Birds attracted to cereal fields include skylarks, wheat ears, partridges, blackbirds, and quails (Potts and Vickerman 1974: 107-197; cf. Devos 1969). Where herds of sheep or goats are pastured, their predators, such as wolves, cheetahs, leopards, and lions also used to roam; although today, with the possible exception of the wolf (Abujaber personal communication) these are no more to be seen. Birds of prey, such as hawks and falcons, are also rarely seen anymore.

Also important are those animals which feed on the carcasses and other organic material disposed of by people and beasts alike. Among those still found within the project area are hyenas, jackals, and several species of scavenging birds, including the Egyptian vulture and the griffin vulture. These birds can be observed awaiting their turn after the semiwild dogs and jackals have had their fill. Still other species feed on dung and other decaying materials, such as the hoopoe, a bird which feeds on small insects found in dunghills. The wild boar plays an important role in this natural sanitation system as well, although today its role has been significantly diminished.

While our focus here has been centered on the territory within a radius of 10 km of Tell Hesban, it is important to keep in mind that to the north, south, east and west of this particular area are territories which also at times have been utilized by peoples and animals occupying our project area. Indeed, for some of these people and animals, the project area has been but a convenient corridor through which they have passed on their migrations between the lowlands of the Ghor and destinations on the highlands to the east of the Dead Sea. The fact that the project area straddles the territory immediately to the northeast of the Dead Sea has meant that it has always been an important natural corridor for such through traffic. For such populations, still other alternatives than those described above have existed in the way of local environments, including, as we shall see later on, exploitation of

the fertile foothills and lowlands along the Jordan River, and the desert regions to the south and east of the project area.

Finally, the disappearance of certain species of wild animals in Jordan, and the reduced numbers of others—especially grassland ruminants such as the gazelle and ibex and their predators, the cheetah and wolf—have been of concern to several naturalists who have studied the wildlife of Jordan (Mountfort 1964). It is fortunate that today, conservation efforts have gotten under way in Jordan which it is hoped will lead to improved conditions for still surviving species threatened with extinction.

Sights From Tell Hesban During the Decades of 1870, 1910, and 1970

Before discussing in greater detail changes which have taken place within the project area over the past two centuries, an initial idea of the sedentarization process, which occurred over this period, can be had from assuming the role of a visitor on top of Tell Hesban taking in the sights of the surrounding region at three successive points in time. Thanks to eyewitness accounts available from the previous century and the early part of the present century, and our own observations in the 1970s, a reconstruction of the panoramic sights visible from on top of Tell Hesban ca. 1870, 1910, and 1970 is both possible and instructive.

On the way up to the summit of Tell Hesban in a summer sometime in the 1870s, our visitor would have passed by numerous caves, a castle, and numerous ruined arches and buildings, many of which would have been temporarily occupied by families belonging to the Ajarmeh tribe at this time of the year. From the summit of Tell Hesban his eyes would next have been drawn to the eastern plain where lines of great black tents belonging to the Beni Sakhr tribesmen would have been visible for miles. Spreading across the plain would have been their large herds of camels. Turning his gaze westward, our visitor would have seen large flocks of sheep and goats grazing in the valleys and along the slopes of the Wadi Majarr. Their owners would have been members of the Belqa tribesmen whose tents would be visible on these slopes as well. Turning northward, an encampment of the Adwan

tribesmen would have been seen, along with their flocks of cattle, sheep, and goats (Tristram 1873: 351).

Having taken in the situation of the living population, our visitor's gaze would next have been drawn to the extensive ruins of past inhabitants. The surface of Tell Hesban itself, along with the surrounding landscape, would have appeared to him as an outdoor museum with numerous half-standing buildings, ancient road beds, and, below his feet, innumerable remains of monumental buildings and pieces of pottery. To the west of the tell, straddling Wadi Majarr, he would have seen a large depression, the remains of a reservoir. Scattered along the hillside above this wadi he would have seen numerous caves, many of them having been closed off by a rude masonry wall containing a doorway. Another reservoir would have been discernible at the bottom of the tell to the west in Wadi el Marbat (Conder 1889: 104). Also clearly visible to him would have been the lines of parallel curbstones coming over the hill to the north from El 'Al and running past the tell toward Madaba. Scattered on many of the surrounding hills would have been more half-standing buildings and arches, as well as traces of footpaths and donkey trails crisscrossing the landscape.

While many of these same sights would still have been seen by our visitor on his summertime return to the summit of Tell Hesban sometime during the decade of 1910, some changes would also have been noticeable. Clumped together around the castle on the western shoulder of the tell he would have seen several fortified farmhouses built of anciently hewn stones. Around these he would have seen women and children going about their daily chores, and men, assisted by camels and donkeys, hauling bags of wheat to the makeshift granary in the castle. These would have been the descendants of the Ajarmeh and the Belqa tribesmen, these particular ones having abandoned their transhumant ways in favor of year-round settlement in their former summer quarters.

Looking beyond Hesban toward Mushaqqar and Madaba, he would have seen further evidence of permanently settled villages. Indeed, if his vision was good, he would have seen at Madaba the steeple of a newly erected Christian church, surrounded by a cluster of fortified farm-

houses built on top of the ancient Byzantine ruins near the summit of this ancient city. In the fields surrounding these villages he would no doubt also have seen teams of oxen at work plowing up the fields which in former times had been devoted primarily to pasture. On the eastern horizon he would again have seen the lines of great Beni Sakhr tents, but this time their herds would have contained fewer camels. Instead, large numbers of sheep and goats would have been added to their flocks.

On his summertime return to the summit during the decade of 1970, our visitor, now over one hundred years old, would no doubt have been astounded by the changed sights before his eyes. The summit itself would have been markedly scarred, having been penetrated to bedrock by numerous archaeological excavation trenches. On most of the hills surrounding the tell he would have seen houses built of wrought iron and cement. Still there would have been many of the early fortified farmhouses, but many of the oldest of these now would have been converted to granaries or shelters for animals. To such uses many of the cave dwellings on the western slope of Wadi Majarr would also have been converted. Of the many half-standing ruins of buildings of which the earlier explorers spoke, hardly any would still be seen, except for the castle, which still stands. Most of these would either have been destroyed by villagers in search of building materials or they would have been incorporated into new buildings.

Other new sights in the village of Hesban would have been the numerous enclosed gardens; several large orchards containing rows of fruit trees surrounded by enclosure walls; the presence of several public buildings such as a school for boys and one for girls; parked and moving cars and trucks; TV antennas on the roofs of some houses; and, parked near the castle or in a nearby wheat field, a large wheat combine. Seen in large numbers everywhere in the village would have been chickens and doves, along with a few geese and turkeys. There would still have been the flocks of sheep and goats on the hills and in the stubble fields beyond the village, but these would have been much smaller in number than those kept by the present villagers' grandparents and their parents. A few heads of European-type cattle would also have been seen tethered near some of the village houses.

Looking southward toward Madaba, several large settlements would have come into view, including the greatly expanded villages of Mushaqqar, El Jureina, and Madaba. The latter would have appeared on the horizon as a large town, its houses sprawling in every direction out from the Christian center of the town. Along the skyline of Madaba would also have been seen numerous minarets, a testimony to the large influx of Muslims into the town, the majority of them Palestinian refugees. On the edges of the villages seen from on top of Tell Hesban, tents belonging to Palestinian refugees would also have been visible. These belonged to Palestinian families having taken up a migratory existence following their forced eviction from their former permanent homes on the other side of the Jordan.

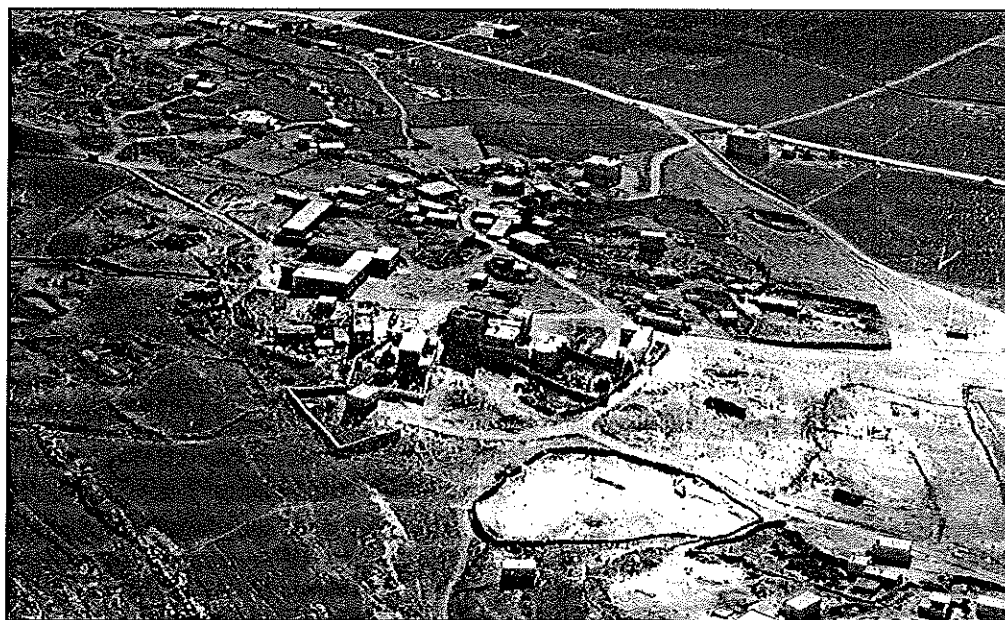
Built along the track of the ancient Roman road, a paved highway connects Madaba, El Jureina, Hesban, El 'Al, Naur, and numerous other villages to each other and other points in Jordan. Along both sides of this highway the former cereal fields would still have been seen, although some of them would now have been in the process of being converted into irrigated vegetable fields and orchards. Almost absent altogether on the eastern horizon would have been the tents and flocks of camels and sheep and goats of the Beni Sakhr, most of their descendants having settled by this time.

In order to gain a deeper understanding of the changes which our three-time visitor to Tell Hesban would have observed, some of the salient characteristics of the project area food system during the decades leading up to A.D. 1880 (the Late Ottoman Period), A.D. 1950 (the Early Modern Period), and 1980 (the Modern Period) will be examined in greater detail. The first of these periods, the Late Ottoman, will be discussed first. Except for a brief introduction to the political conditions which prevailed during Late Ottoman times, attention will be focused primarily on those aspects of the local food system which, as was discussed in Chapter One, our ethnoarchaeological perspective gives priority to, namely the prevailing environmental, settlement, landuse, operational, and dietary conditions. Our purpose in the following section will be to identify those interrelated changes in material conditions which are indicative of changes in the local food system as a whole.

Plate 3.10 Habitation caves as seen from Tell Hesban; view west



Plate 3.11 Village of Hesban, 1971, note *qasr* in center; view east



When Transhumant Pastoralism Prevailed: The Late Ottoman Period

Throughout the 19th century A.D., prior to ca. 1880, transhumant pastoralism prevailed within the project area. In other words, the large majority of its inhabitants were pastoralists migrating with their animals between the project area, which constituted their highland range, and lowland ranges in the Ghor, or in the interior of the Arabian desert. There were no towns or villages established within the project area before this date, although toward its end, a few campsites were gradually being converted into year-round settlements by the Ajarmeh and other Belqa tribes, and at Yadoudeh, a settlement ca. 2 km beyond the northeastern perimeter of the project area, the Abujabers had by this time begun a thriving farm in partnership with the Beni Sakhr sheikh (Abujaber 1984). The principal contemporary sources of information regarding the project area during this period utilized here include Burckhardt (1822), Warren (1869), Tristram (1865, 1873, 1880), Conder (1889, 1891, 1892), and Thomson (1880).

Throughout all of the 19th century, Transjordan belonged in a nominal sense to the Ottoman Empire, which had its seat of power in Constantinople (Istanbul). During the first half of that century Ottoman control over the Arab lands was minimal, except in principal cities, such as Damascus and Aleppo, where they maintained large military garrisons and staffs of civil officials (cf. Burckhardt 1822: 285-309; Glubb 1967: 107). During the latter half of the same century, however, reforms got under way in the Ottoman administration which led gradually to a greater Turkish presence throughout Syria and Palestine. Thus, Tristram (1873: 174) was favorably impressed with the improvements in public security and administration which the authorities had brought to Salt, a town 30 km north of Hesban, in the period between his two visits to that town (ca. 1863-1872). In the account of his second visit he comments, "Now that the Pasha of Damascus has placed a garrison there, the fellahin are better off, trade has quadrupled, and the country is as safe for Europeans as Western Palestine." Tristram (1873: 174) also indicates that a Turkish garrison was being set up in Kerak, a town ca. 70 km to the south of Hesban, around 1873. At the

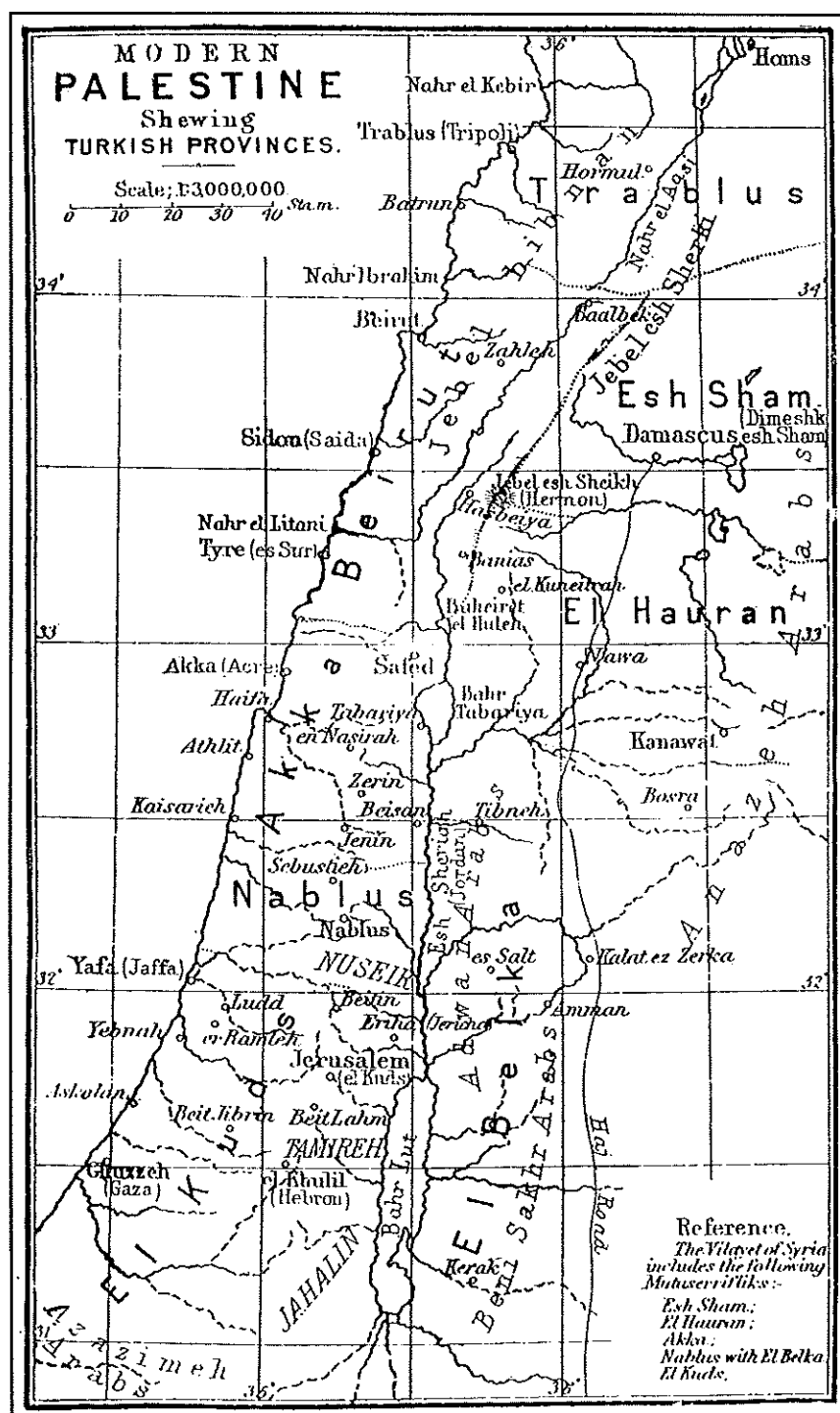
time of his visits these two towns were the only ones that existed in the whole territory east of the Jordan.

The environmental conditions which prevailed within the project area during the Late Ottoman Period were generally better than those which exist today. The best evidence for this is the fact that the plants and animals which were observed by visitors to points east of the Jordan, including the project area, were much more plentiful then than they are today. Because only a small portion of the arable land was actually tilled, and because the pressure from grazing animals was seasonally abated as the herds of sheep, goats, and camels were led in and out of the project area, there was less disturbance of both the natural flora and the natural fauna. Among the species of wild animals and birds observed by Tristram's (1873) party on the highland plateau in the vicinity of the project area (at places like M'Seitbeh, Umm Rasa, and Ziza) were the bubale or wild cow, oryx antelope, gazelle, wild cat, fox, jackal, wolf, cheetah, mole-rat, gerbille, Lammer-Geier or bearded vulture, griffin vulture, Egyptian vulture, spotted eagle, buzzard, kestrel, Lanner falcon, Sakk'r falcon, owl, eagle owl, raven, jackdaw, rock dove, partridge, Greek partridge, sand grouse, pintail duck, mallard duck, lark, calandra lark, crested lark, short-toed lark, and skylark. Today, most of these species have become rare or extinct in Jordan (Mountfort 1964).

In shifting our attention to the human occupants of the project area during the Late Ottoman Period (fig. 3.9), the first thing which needs to be emphasized is that throughout this entire period, a process of sedentarization of various tribes was continuously taking place. This meant that at any one point in time, a range of different food procurement strategies could be identified among local inhabitants, some tribes appearing to be more nomadic and some appearing to be more sedentary in their manner of living. This fact was well understood by Glubb (1938) whose many years among the Bedouin of Jordan, as leader of the Arab Legion, led him to caution against overly simplistic notions about how to distinguish the traditional way of life of the Bedouin from that of sedentaries. With great insight Glubb (1938: 448-449) explained as follows:

We must first clear our minds somewhat as to the meaning we propose to give to the "Bed-

Fig. 3.9 Palestine in the Late Ottoman Period (after Conder 1891)



ouin." It is notorious that all the Northern Arab countries—Jordan, Syria, Palestine and Iraq—have for centuries past been recruited by nomadic tribes which have migrated from Central Arabia. These tribes at first continue their nomadic lives in the deserts bounding the cultivated area; they gradually reduce the distances of their annual migration, and increase the numbers of their sheep at the expense of the camels. Later they become interested in agriculture, abandon camels altogether and eventually become complete agriculturists; they retain their tents probably for a considerable time. The process of transformation of a pure nomadic camel tribe from Central Arabia into a group of agriculturalists still living in tents occupied in the past an average period of about three hundred years. But many such tribes continue to live in tents for several centuries longer. Indeed, the tribe itself and tribal organization usually disappear before the members abandon tents and take to stone villages.

Certain factors have made the last twenty years a period of exceptionally rapid change, not indeed in Trans-Jordan alone, but likewise in Asia, Europe and America. But the gradual transformation of camel nomads into sheep breeders, sheep breeders into tribal cultivators and tribal cultivators into non-tribal villagers has been going on for thousands of years. At all times, therefore, tribes have existed in Trans-Jordan in every stage of this metamorphosis, from the completely nomadic camel breeder to the completely sedentary cultivator. Indeed, the different sections and families of the same tribe may often be seen in different stages of sedentarization. To divide the inhabitants of Trans-Jordan into rigid groups of nomads, semi-nomads or settled is therefore difficult, for all these types of life shade off imperceptibly one into the other.

The settlement and landuse conditions which prevailed within the project area during the Late Ottoman Period are best understood as a local example of this process. Being the most recent tribe to enter Transjordan, the camel-breeding Beni Sakhr were the most nomadic, migrating between summer camps along the eastern plain of the project area and winter camps deep in the Arabian desert in the vicinity of the Wadi Sirhan (Hiatt 1984: 34). Conder (1892: 321) puts their numbers at 1,500 tents or about 7,500 persons. Having entered Transjordan before the Beni Sakhr, the sheep-breeding Adwan, along with their allies, migrated between campsites along the



Plate 3.12 Beni Sakhr sheikh (after Fish 1876)

plateau ridge and the western descent and their more permanent settlements in the Jordan Valley, where they were regarded as the ruling tribe. Allied to the Adwan were a number of even less nomadic sheep and cattle-breeding tribes, one of which was the Ajarmeh. Conder regarded this tribe, which sojourned primarily in the valleys of the western descent and around Hesban, as being the one with the most seniority in this part of Transjordan, and Tristram (1873) praised them for their proficiency as cultivators. Together, the Adwan and their allies numbered, according to Conder (1892: 321), "some 2,200 tents or 11,000 souls, giving a density of 10 persons per square mile, which appears to be a very probable result for such a district as that of the Belka."

The sociopolitical and territorial relationships which prevailed between the Adwan and Beni Sakhr tribal confederacies and their respective allies, and between the various subsections of each of these major tribal groups, have been discussed at some length by both Tristram (1873) and Conder (1892). Whereas the Adwan tribe had for centuries been the reigning tribe of the

Belqa (Tristram 1873), which at one time included the whole territory of the project area, they were considered "on their way down" by the time of Tristram's and Conder's visits, being gradually forced to retreat at the hands of the more powerful Beni Sakhr tribe from their former lands on the Madaba plateau into the western descent. Indeed, although Beni Sakhr territory was considered to be those lands which lay east of a line running between Yadoudeh, Es Samik, and Madaba or slightly to the east of the plateau ridge (Conder 1892: 315), they were known to cross over into Adwan territory in order to water their camels at the springs located along the plateau ridge and in the western descent (Conder 1892: 347). An indication of the enmity which prevailed between these two dominant tribes is provided by Captain Warren, who visited the project area in 1869. Having arrived at Es Samik where the border between these two tribes was located, he discovered that "the ground itself was black with fire, the hostile tribe (the Beni Sakhr) having burnt it when they left some weeks before, so that the Adwan might make no use of it" (Warren 1869: 291; cf. Tristram 1865: 541, 1873: 247; Thomson 1880: 629).

The particular arrangements whereby each of these pastoralist tribes went about providing for their grain requirements need to be explained further. While the Ajarmeh would themselves plant and harvest fields of wheat and barley in the fertile valleys of the western descent, the Adwan and the Beni Sakhr employed *fellahin* for this purpose—a socially inferior group of tribesmen whose livelihoods were closely tied in a servile relationship to specific Adwan and Beni Sakhr families (cf. Hiatt 1984: 129-131). Thus, in the Jordan Valley, members of the Ghawarneh tribe, or "Men of the Ghor," "rudely tilled" the soil for their Adwan masters (Conder 1892: 315), while on the eastern plain, members of the Abu Endi (or Abu Wandi) tribe produced wheat and barley for the Beni Sakhr (Tristram 1873: 316). In return for their services, these tribesmen received protection from their employers and assistance in obtaining the means of production—such as lands, tools, and shelters, assistance in finding wives for their sons, and the brideprice wherewith to seal their marriage arrangements.

Precise information about the quantity and types of animals raised by these different trans-

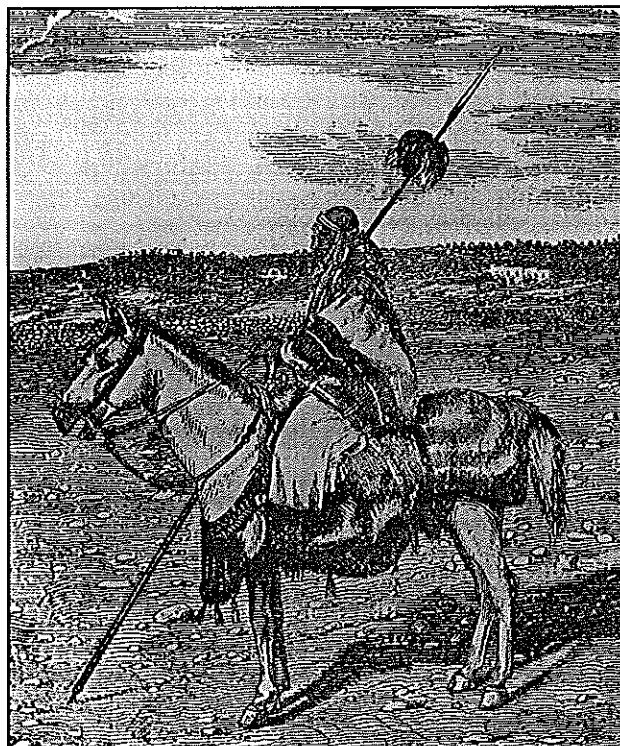


Plate 3.13 Adwan Sheikh Goblan (after Fish 1876)

humant groups is difficult to obtain. About the fact that the Beni Sakhr traditionally had raised primarily camels there is little dispute, although their *fellahin* apparently owned a number of oxen which they used for plowing (Tristram 1873: 333). An indication of the extent to which the Beni Sakhr were abandoning their traditional ways already during the Late Ottoman Period is provided by Tristram (1873: 238). He noted that each of their camps consisted of "on the average, twelve families, and each family averaging twenty camels and four hundred sheep and goats" (Tristram 1873: 238). It is doubtful, however, that this estimate applies across the board to all of the subsections and camps of the Beni Sakhr at the time of his visit; instead it must be regarded as applying to those families leading the way toward sedentarization. According to Kitchener (1878: 11) the Beni Sakhr were also noted for horse breeding and falconry. While camels were raised by the Adwan and their allies, they represented a relatively smaller proportion of their herds. As already indicated, these tribes were primarily sheep breeders, and among some, such as the Ajarmeh and the Ghawarneh, cattle were

Plate 3.14 Qasr at Seil Hesban belonging to Adwan sheikh

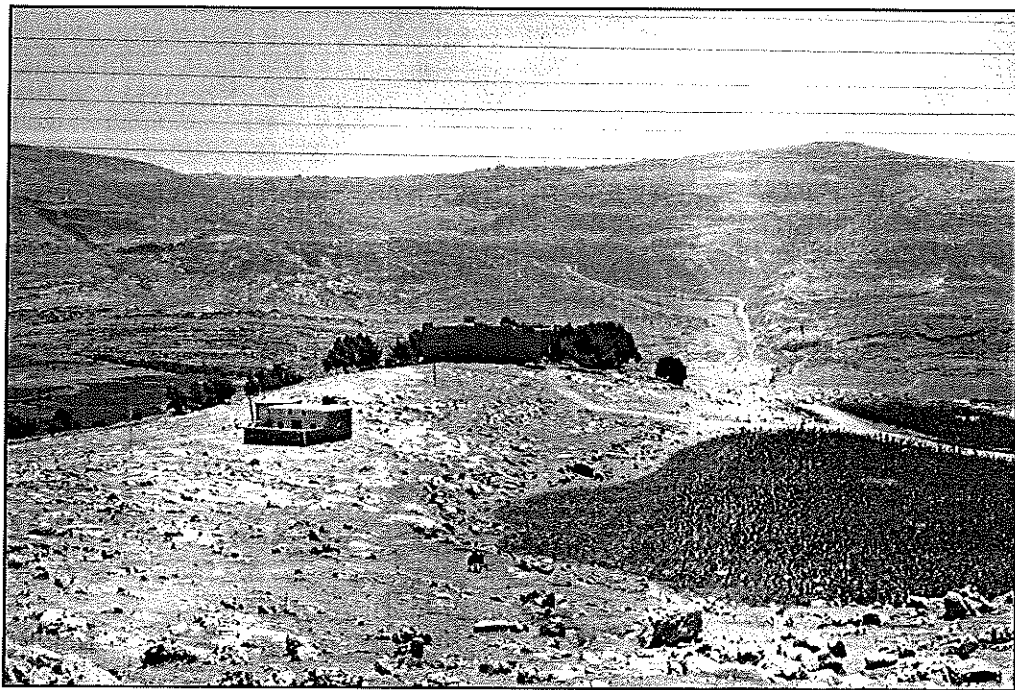
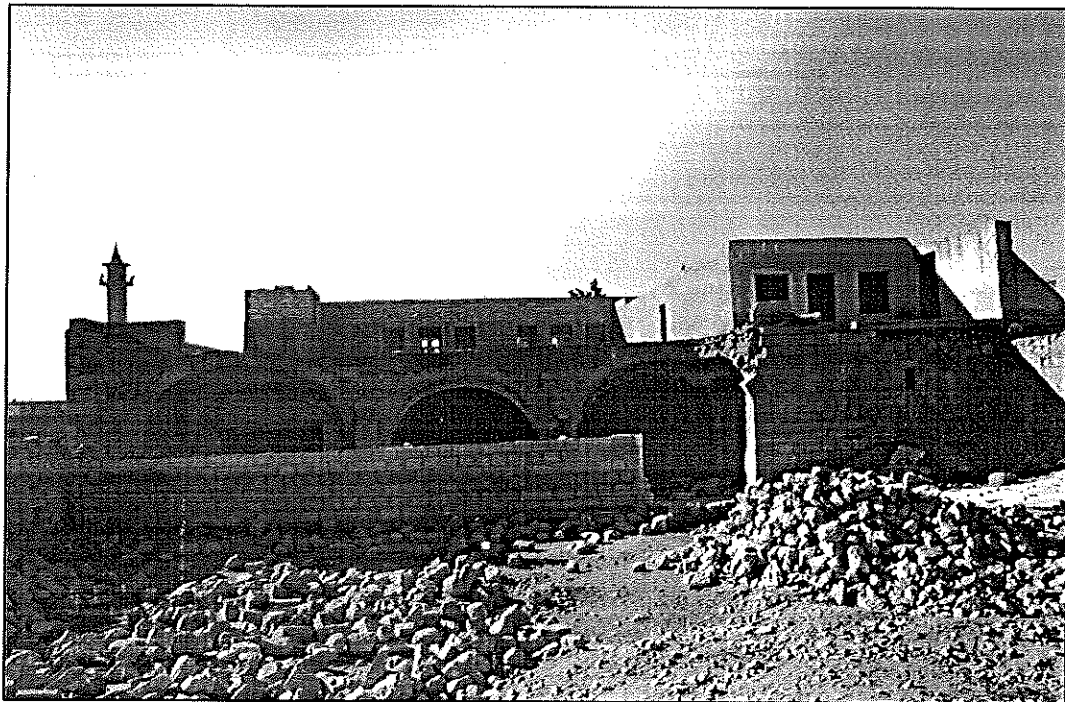


Plate 3.15 Qasr at Umm el Amad belonging to Beni Sakhr sheikh



also raised in considerable numbers because of their role as draft animals (Conder 1892: 347).

Although the various transhumant tribes of the project area were migratory to varying degrees, none of them were without certain nonmovable operational facilities. The most important of these were campsites, caves, watering sites, herding sites, storage sites, and burial sites. As a general rule, the less nomadic the household, the more extensive its nonmovable facilities. Thus, whereas most Beni Sakhr households dwelt year-round in tents, Ajarmeh families spent the cooler months of the year living in seasonal cave villages near their fields and herds (discussed further in Chapter Seven). As mentioned earlier, some of their caves were sealed off by masonry walls containing a doorway. Inside many of these could be found hearths above which a chimney was usually located. Such caves are particularly abundant in the traditional Ajarmeh territories (*cf.* pls. 3.16, 3.17). Even more permanently settled were the servile tribes of the Adwan and the Beni Sakhr, the Ghawarneh having dwelt in mud brick dwellings in the Ghor and the Abu Endi having occupied rudely constructed stone dwellings built on or near ancient ruins on the eastern plain where building materials were readily available.

Not surprisingly, a large number of campsites used seasonally by the various tribes tended to be located in the vicinity of tribally owned watering sites such as springs, streams, and anciently constructed cisterns or reservoirs. Thus, a favorite camping site of the Adwan was nearby the spring at Ain Hesban. At this site Thomson (1880: 666) reported seeing "the largest encampment of the Adwan tribe we have yet seen" (*cf.* Warren 1869: 286; Tristram 1873: 353). Frequently camped at Hesban were the Ajarmeh, partially because the site was honeycombed with anciently hewn cisterns. At Madaba and Ziza, where large reservoirs dating to Roman times were still capable of storing water, the Beni Sakhr could often be found watering their animals.

Another type of nonmovable agricultural facility used by the Late Ottoman Period Bedouin was herding sites. While in many instances these might simply have been ancient ruins or caves used as shelters or pens for herds of sheep or goats, they also included more elaborate walled enclosures used to separate selected groups of animals for various herd management purposes

(*cf.* Murray and Chang 1980). Conder (1889) noted the presence of a number of "goat folds" in his survey map. Tombs and caves filled with straw and dung, indicating that they had been used as animal pens, were also frequently encountered in our own survey.

One of the most intriguing aspects of the material life of the Bedouin of the Late Ottoman Period was the way in which their burial sites were used as inviolate places of equipment storage. Being only nominal Muslims and having retained aspects of their former ancestral religion (Conder 1892), including great respect for the deceased and a fear of violating another tribe's burial sites, they could safely deposit seasonally used tools and equipment inside the stone circles within which they buried their dead. Tristram (1865: 541) offers this account of a Beni Sakhr burial site located in the vicinity of El 'Al,

Hard by was a rude enclosure of loosely-heaped stones, inside of which about fifty wooden plows were heaped—the graveyard being the depot for the agricultural implements of the tribe, during their absence for months in the interior.

Conder (1889) reported encountering several such sites as well. Also used for temporary storage of equipment were ancient tombs, caves, and ruins in the vicinity of tribal campsites. Grain was sometimes stored in plastered caves (Warren 1869: 287; Tristram 1865: 534).

The dietary conditions which prevailed throughout the Late Ottoman Period within the project area varied first of all in terms of how extensively cereals were used as a staple. As a general rule, the more nomadic the household, the lesser the contribution of cereals and legumes to the diet (*cf.* May 1961; Yacoub 1969). Although none of the tribes lived year-round without using cereals, those Beni Sakhr households which migrated for months at a time in the interior had to rely for their main source of nourishment on camel's, sheep, or goat's milk, supplemented by dried fruits, locusts, and a number of different edible plants and roots collected in the desert (*cf.* Burckhardt 1831: 238-242; Musil 1928: 86-114). Meat was eaten only on special occasions when hospitality or ceremonial requirements called for the slaughter of herd animals. Poultry or fish were normally not consumed, although game was a popular addition to the diet whenever available. Most common in this regard were gazelle and partridge, although a number of

Plate 3.16 Doorway (G.4:1) of Ajarmeh Cave G.4:2

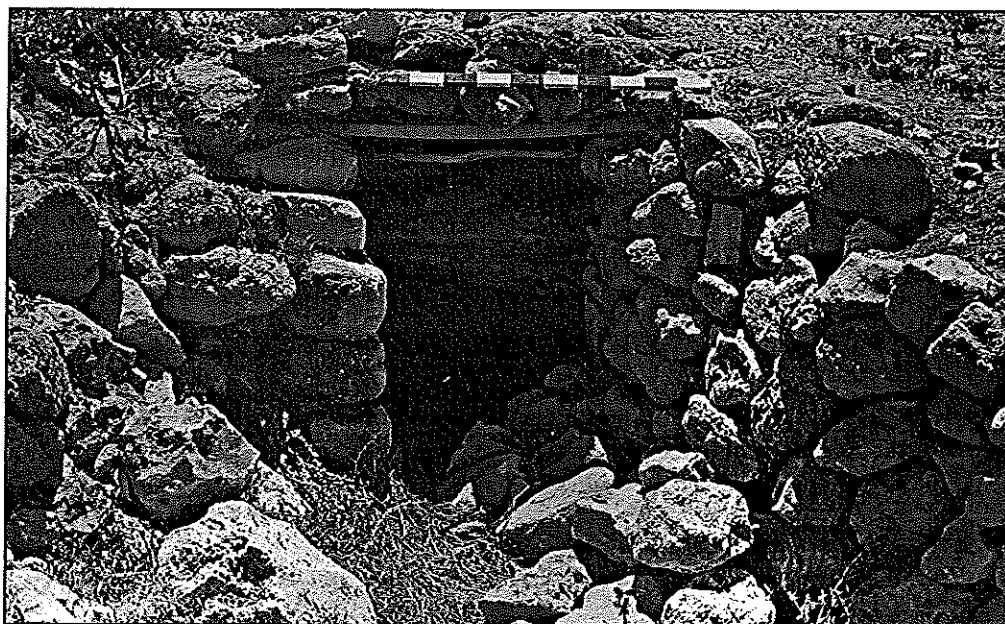
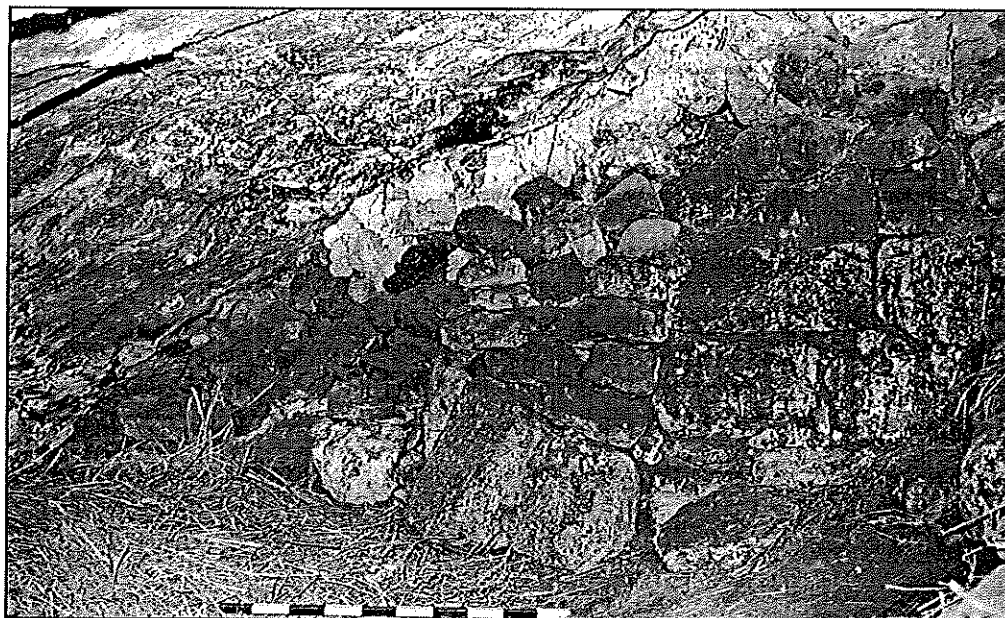


Plate 3.17 Inside Ajarmeh Cave G.4:2



other species including the bubale, oryx, ibex, desert hare, coney, pigeon, rock dove, grouse, quail, and duck were also sometimes hunted and prepared for the platter (cf. Tristram 1880; Musil 1928: 20-43).

When Village Cereal Farming Prevailed: The Early Modern Period

Between the years 1880 and 1950 more than two dozen permanent villages came into existence within the project area as transhumant pastoralism gave way to cereal farming by a rapidly sedentarizing population. Because of the initial emphasis on field crops (see below), those portions of the project area which were the best suited to grain production, namely the eastern plains and the broad valleys of the northern hills and plateau ridge, were settled first. Although other crops, including legumes, vegetables, fruits, and nuts also gradually gained in significance, and while pastoral pursuits continued to be of importance, by far the most pervasive shift which occurred in landuse and settlement during this period was the conversion of pasture lands into cereal fields and the abandonment of annual migrations by the various local tribesmen in favor of permanent settlement in villages. Other than the recollections of the older members of the local population themselves, the contemporary published sources relied on here for information about this period in the history of the project area are records and accounts offered by Conder (1889), Forder (1909), Hoskins (1912), Glubb (1938), and Konikoff (1943).

The designation of this period as *Early Modern* can be justified on the grounds that modern technology and Western political and economic intervention played a major part in shaping the process of sedentarization which occurred during this period. First, between the years 1900 and 1910, the Hejaz railway, which had been conceived as a means to further strengthen the Turkish presence in the Arabian territories, was completed between Damascus and Kerak (Glubb 1967: 120). Second, the Emirate of Transjordan was born in 1921 out of the colonial aspirations of the British (Glubb 1967), and along with it came the Arab Legion as a powerful instrument of the state in pacifying the countryside and integrating the tribal entities of former times into the

newly established state government (Vatikiotis 1967: 5; Snow 1972: 22). Third, these events led to the establishment of the present central administration in Jordan along with which came the beginnings of a number of government bureaucracies and public education actively supportive and facilitative of modernization of the rural sector of the country.

As a result of the technological and political changes which took place in Jordan during the Early Modern Period, certain significant changes occurred in the natural environment of the country as a whole which are evident also within the project area. Perhaps the most devastating to Jordan's ecology was the large-scale cutting down of coniferous trees and forests, especially in northern Jordan, which accompanied the construction of the Hejaz railway. Additionally, as transhumance was abandoned in favor of settlement in villages and towns, the periodic abatement of grazing pressure on pastures which took place seasonally when transhumance prevailed, gradually became a thing of the past as flocks of sheep and goats owned by villagers were fed year-round on marginal local pastures. Furthermore, expansion of cultivation at the expense of pasture lands, which sometimes led to plowing of lands best left untouched by the plow, also had consequences for survival of native flora and fauna. Add to the above disturbances caused by increased collection of firewood by rapidly growing numbers of sedentaries and excessive hunting of favored species of birds and mammals, and it is clear why concern over the disappearance of wildlife in Jordan became a national issue by the end of the Early Modern Period, culminating in the establishment in 1966 of the Royal Society for the Conservation of Nature (R.S.C.N.).

At the time of Conder's survey in 1881, the extent to which the inhabitants of the project area had been settled is indicated by his observations upon visiting Naur, Mushaqqar, Umm el Qanafid, and Madaba. At Naur he noted that

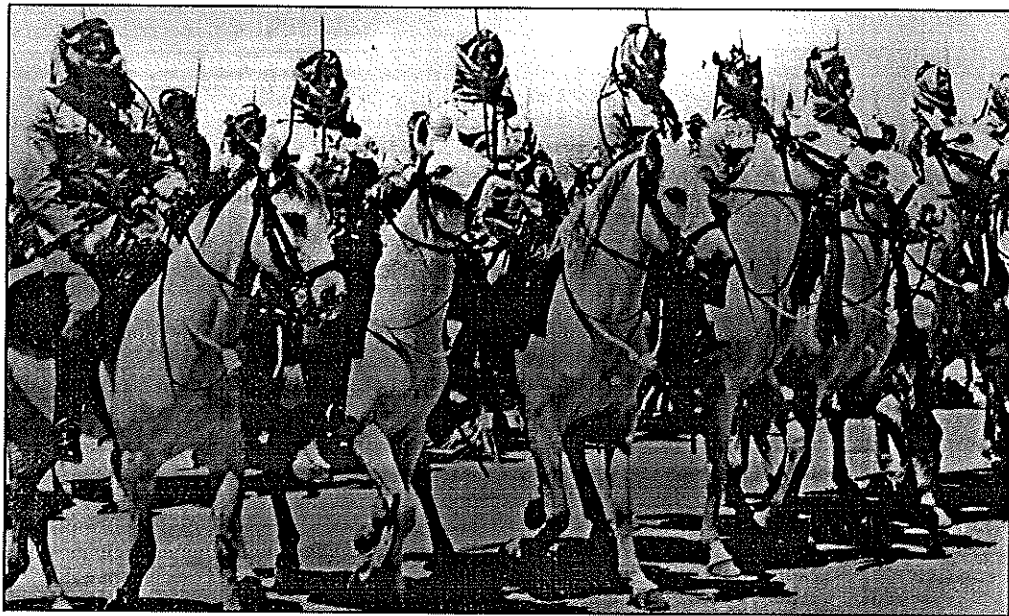
half a dozen modern houses where corn is stored, and a little enclosed vegetable garden east of the spring is the property of (Adwan) Sheikh 'Aly Diab, under the care of a fugitive Arab from the Nejed (Conder 1889: 152).

whereas at Mushaqqar (Khirbet el Meshukkar) he found "modern huts of some fugitive Fellahin here settled. They cultivate a little corn and tobacco" (Conder 1889: 151). At Umm el Qanafid

Plate 3.18 Glubb Pasha (center) and King Abdullah (after Glubb 1967)



Plate 3.19 Soldiers of the Arab Legion mounted on thoroughbred Arab Horses (after Glubb 1967)



were "half a dozen modern houses on the Tell, and enclosures with drystone walls" (Conder 1889: 248).

At Madaba he noted "many caves, now inhabited by Christians from Kerak" (see pls. 3.20, 2.21). Having been "converted from the Greek to the Latin rite by the Jesuit missionaries" these inhabitants

were settled at Madaba, under the leadership of these priests, in the spring of 1881. Some were yet in tents in the autumn of the same year, but were repairing cisterns, and preparing to build. They had constructed a sort of fort on the mound, called ed Deir, "the monastery," measuring about 80 paces (or 200 feet) square, and including graves, apparently of Arabs. The walls are drystone, carefully packed, and no doubt intended for protection (Conder 1889: 180; cf. Hoskins 1912: 349; Peake 1958: 177; Gubser 1973; Allison 1977: 28-30).

These are the only references to settled communities within the project area noted in Conder's report. In Tristram's (1873) account, no references are found indicating year-round habitation within the project area.

The resettlement of Madaba was a pivotal event in pushing forward the resettlement of other sites within the project area (pls. 3.22-24). One reason for this was that Madaba was settled by an estimated 2,000 experienced cultivators all at once (Allison 1977: 29). Having had to flee from their farmsteads at Kerak because of an escalating blood feud, the families involved had appealed to the Turkish administration for help in finding a new place to settle. Since their request to make their new homes at Madaba and to cultivate its fertile fields could only further Turkish attempts to gain control over the population of Jordan, it was granted. The transformation of Madaba which resulted has been succinctly portrayed by Hoskins (1912: 349-50), who visited Madaba sometime during the turn of the century. He writes:

Twenty-five years ago Madaba was still a desert mound, lost in the Moab plateau. The Adwan Arabs, mentioned so often by travellers, pitched their tents and pastured their flocks about the mound and in the floor of the ancient pool, without knowing or caring that the ruins of a once flourishing city lay beneath their feet. But in 1880, some Christians from Kerak, weary of being trampled upon by the more powerful tribes and clans, in their never-ending blood feuds and pillage, resolved to quit that city and

found a new colony about the mound of ancient Madaba.

When the Kerak people settled on the mound, the Latins seized a most commanding site and built a modest church and school, which now boasts a small clock-tower. Other settlers came from the surrounding country, until there were several thousand people gathered together. Then the government, some fifteen years ago, made it a government center and built a small serai on the ruins of a church. The Greek orthodox people, in looking for a site, seized upon the ruins of an old basilica to the northwest of the mound, and here has been made the second great discovery beyond the Jordan (the Madaba mosaic map).

Significantly, all the villages which came into existence during the Early Modern Period were established on or near the ruins of an ancient settlement, most of which had been used as seasonal camps by the settlers during their days as transhumants. Not only were these sites strategically located in terms of access to cereal fields, they also contained reusable cisterns for collecting and storing water and ample supplies of anciently hewn stones for use as building materials. Thus, Conder (1889: 183) worried that "the ruins of Madaba are being much injured by the new Christian settlers who remove the stones to build walls before their caves." As the rebuilding of these villages progressed, these anciently hewn stones continued to be used to build the fortified dwellings which became the distinctive architectural style throughout the Early Modern Period.

As one would expect, the first families to settle permanently along with the Christians at Madaba were those belonging to the oldest tribes of the project area such as members of the various Belqa tribes. Of these, the Ajarmeh were among the first to settle when they began to live permanently at Mushaqqar as early as the Late Ottoman Period. As these earliest villages grew, they tended to spawn daughter villages. Thus, Mushaqqar spawned Hesban, and Hesban, spawned El Manshiya, El 'Al, and Es Samik—all of them originally inhabited by Ajarmeh families. In time, however, descendants of other tribal groups also became a part of these villages.

The continuing importance of tribal ideology throughout the Early Modern Period is evidenced by this tendency for new villages to be spawned along tribal lines. Not only did tribal ideology serve as a basis for allocating land to tribal sub-

Plate 3.20 Cave dwellings in Madaba (after Libbey and Hoskins 1905)

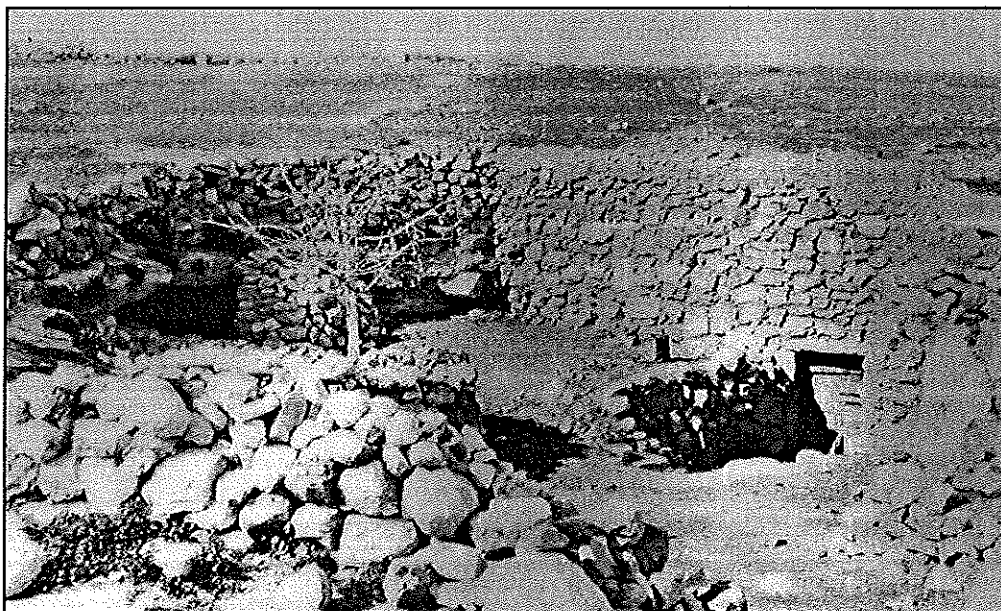


Plate 3.21 Cave dwellers west of Madaba (after Libbey and Hoskins 1905)

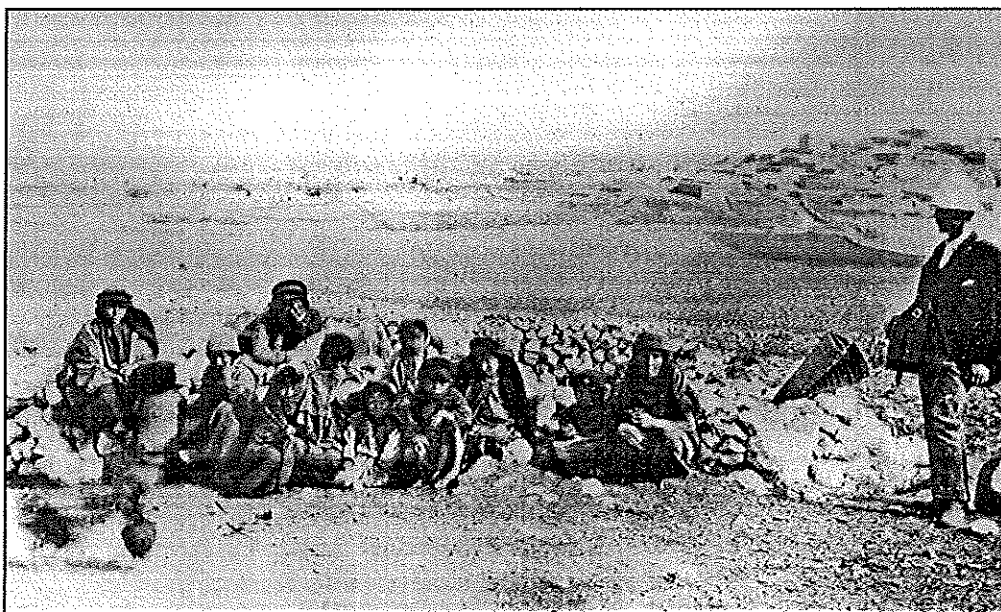


Plate 3.22 Madaba ca. 1909; view northeast (after Hoskins 1912)

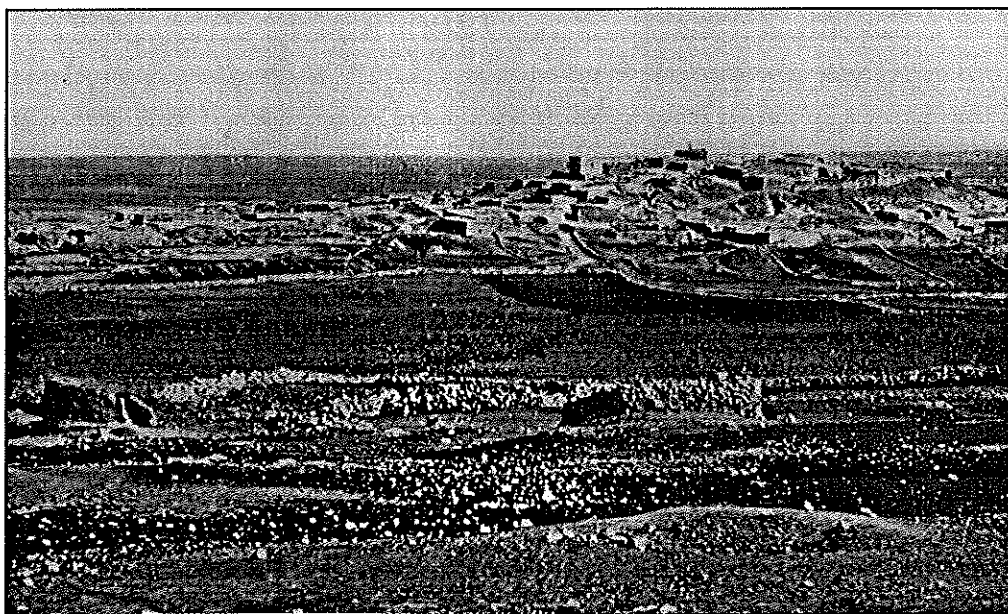


Plate 3.23 Madaba ca. 1920; view south (Library of Congress Print Collection RPW 39764, LC-M32-1166)



Plate 3.24 Madaba ca. 1980 (courtesy of Erwin Syphers)

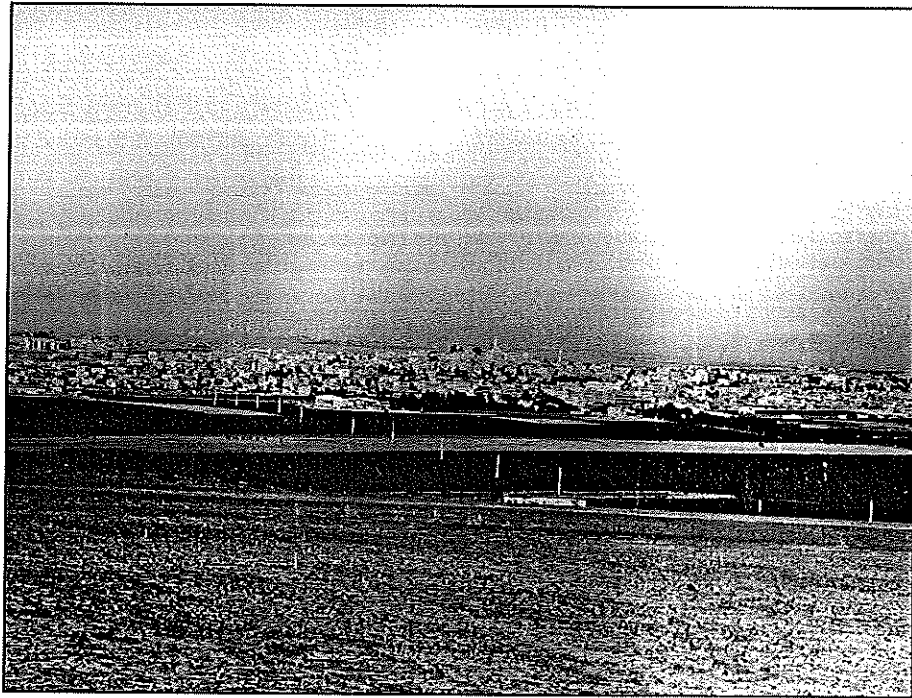
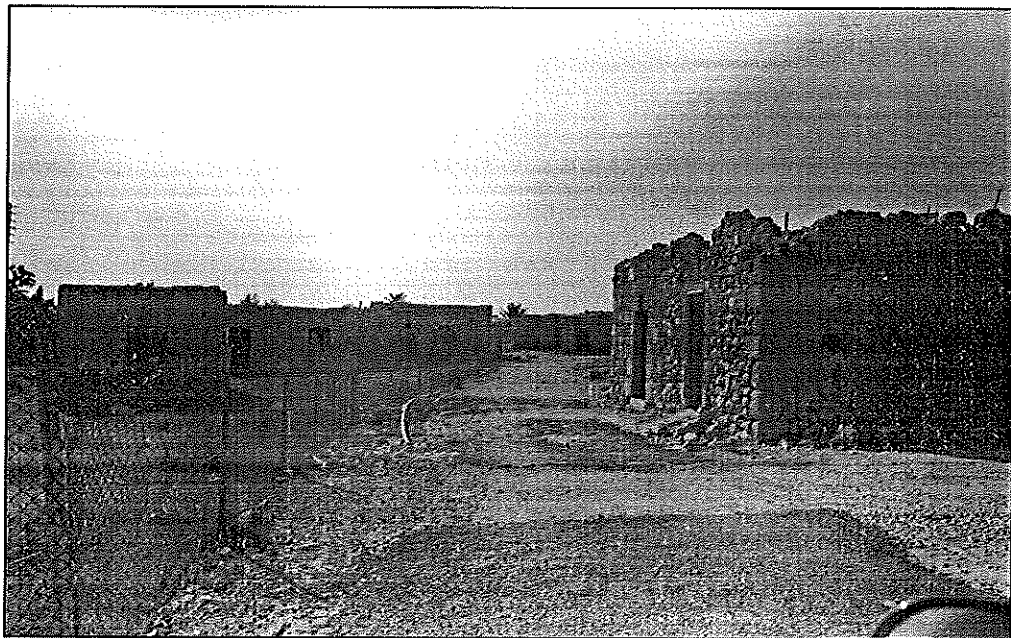


Plate 3.25 Abandoned Adwan houses in the Ghor



groups and families upon settlement so that those subgroups most closely related in the patrilineal idiom of the tribe often settled nearest each other (*cf.* Hiatt 1984: 26), it also served as a basis for unified military action by sedentaries against pillage by other tribes (*cf.* Antoun 1972: 16-18). Thus, especially in the interim period between the first village settlements and the rise of the nation-state, the tribal framework was facilitative of and reinforced by sedentarization.

On the basis of settlement data provided by Conder (1889), by a Hebrew map of Palestine from about 1924, and by the British Survey Engineer Map of 1953 (published in 1956), a rough idea of the rate at which villages were settled within the project area during the Early Modern Period can be gained (see figs. 3.10-3.12). As discussed earlier, at the time of Conder's survey in 1881 there were only four sites sufficiently settled to qualify as hamlets or beginning villages—namely Naur, Umm el Qanafid, Mushaqqar, and Madaba. By 1924, a total of 17 settlements were deemed worthy of inclusion on the map from that year. This figure rose to about 27 by the time the 1953 map was produced. Since the Survey Engineer Regiment Map (1956) includes dots representing the number and location of dwellings within each village, it is possible to estimate approximately the size of the population of the project area around 1950. Assuming that each dot represents about 6 persons per household (*cf.* Gulick 1971: 108), I arrive at a population estimate of approximately 13,000 individuals for the year 1953. This means that from the original settlement of about 2,000 persons in Madaba, the settled population increased at the rate of about 150 persons per year during the Early Modern Period. As noted earlier, most of this population growth took place in villages located near lands suited to the production of field crops, *i.e.*, on the edge of the fertile valleys of the plateau ridge, the northern hills and the eastern plain.

Although tonnage information regarding Early Modern Period increases in wheat and barley production have not been obtained for the project area, information for the country of Jordan as a whole during this period is available and offers an idea of the spectacular rate at which grain production was intensified. According to Konikoff (1943), the tonnage of wheat produced annually

in Jordan jumped from 40,000 tons in 1927 to 168,000 in 1939. Between the same two dates, barley production jumped from 14,000 tons to 98,000. Since the Hesban region has historically been famous for its high quality wheat—indeed Irby and Mangles (1823: 473) and Tristram (1880: 492) wrote admiringly of its qualities—the rate at which its production was increased within the project area probably exceeded the national rate by a considerable margin.

The rise in wheat production was carried out by three principal means. First, as already mentioned, was expansion of cultivated land (*cf.* Glubb 1938: 451). Second was more frequent cropping of arable lands. Thus, in contrast to the Bedouin observed by Tristram (1873: 136) who would "take one crop and then leave the spot fallow for three or four years, while they scratch up the next patch," a rotation system was widely adopted during the Early Modern Period involving wheat or barley seeded in late fall and lentils, sesame, vetch, chickpeas, or sorghum seeded in early spring (Abujaber 1984). Third was the introduction of the tractor-powered plow, which greatly facilitated opening up formerly uncultivated lands at the fringes of the desert. The fact that the mechanical plow was first introduced to Jordan by cereal farmers cultivating on the fertile Madaba Plain is further evidence of the favorable conditions which exist there for its production (Glubb 1938: 451; Abujaber 1984).

The fact that intensification of food production in Jordan initially emphasized cereals rather than vegetables, vine, and tree fruits is a matter which requires a brief explanation, for although vegetables and fruits were produced during the Early Modern Period, it was on a relatively small scale and mostly for local consumption. One important reason for this pattern has to do with the state of security for sedentaries at the end of the 19th century. Because the threat of raids and pillage was a constant problem for these early settlers, crops requiring more than one growing season to bear fruit, such as vine and tree crops, were too risky to plant. Furthermore, cereals could be stored easier as a hedge against crop failure and surpluses were easier to transport over the long distances which had to be covered in order to be brought to urban markets (*cf.* Hunt 1985).

The changes which occurred in the composition of nonpoultry livestock as a result of seden-

Fig. 3.10 Project area villages ca. 1889

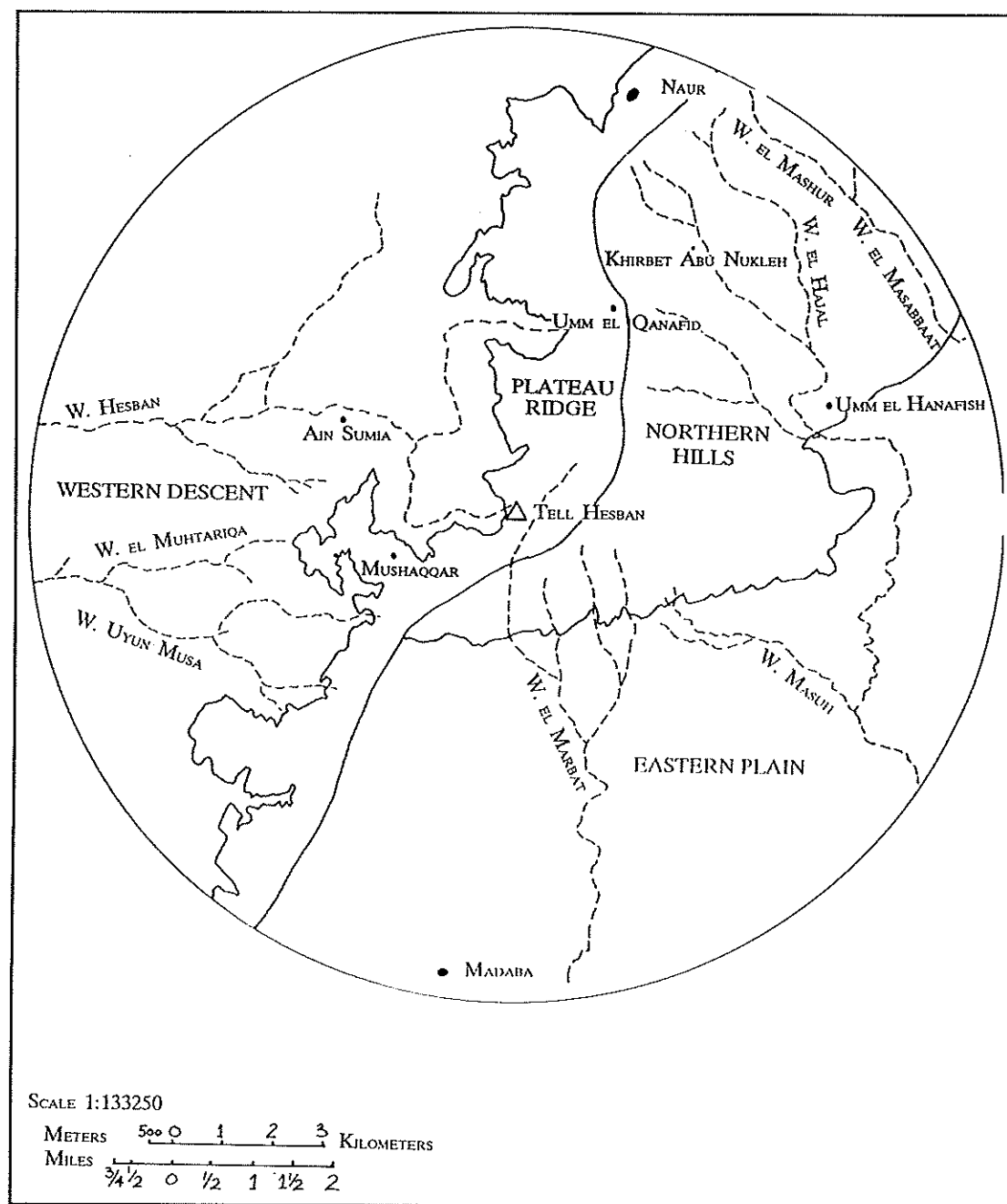


Fig. 3.11 Project area villages ca. 1924

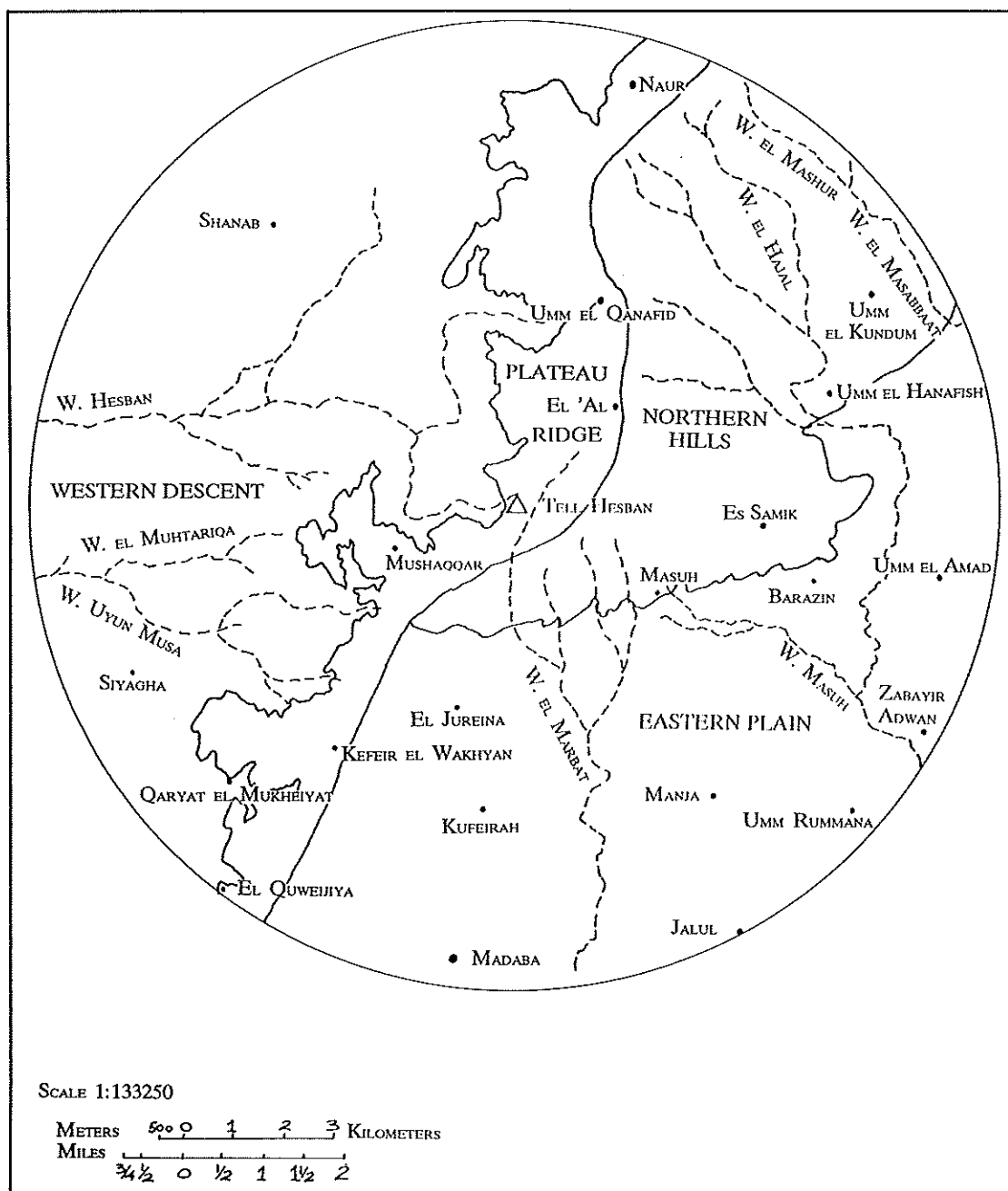
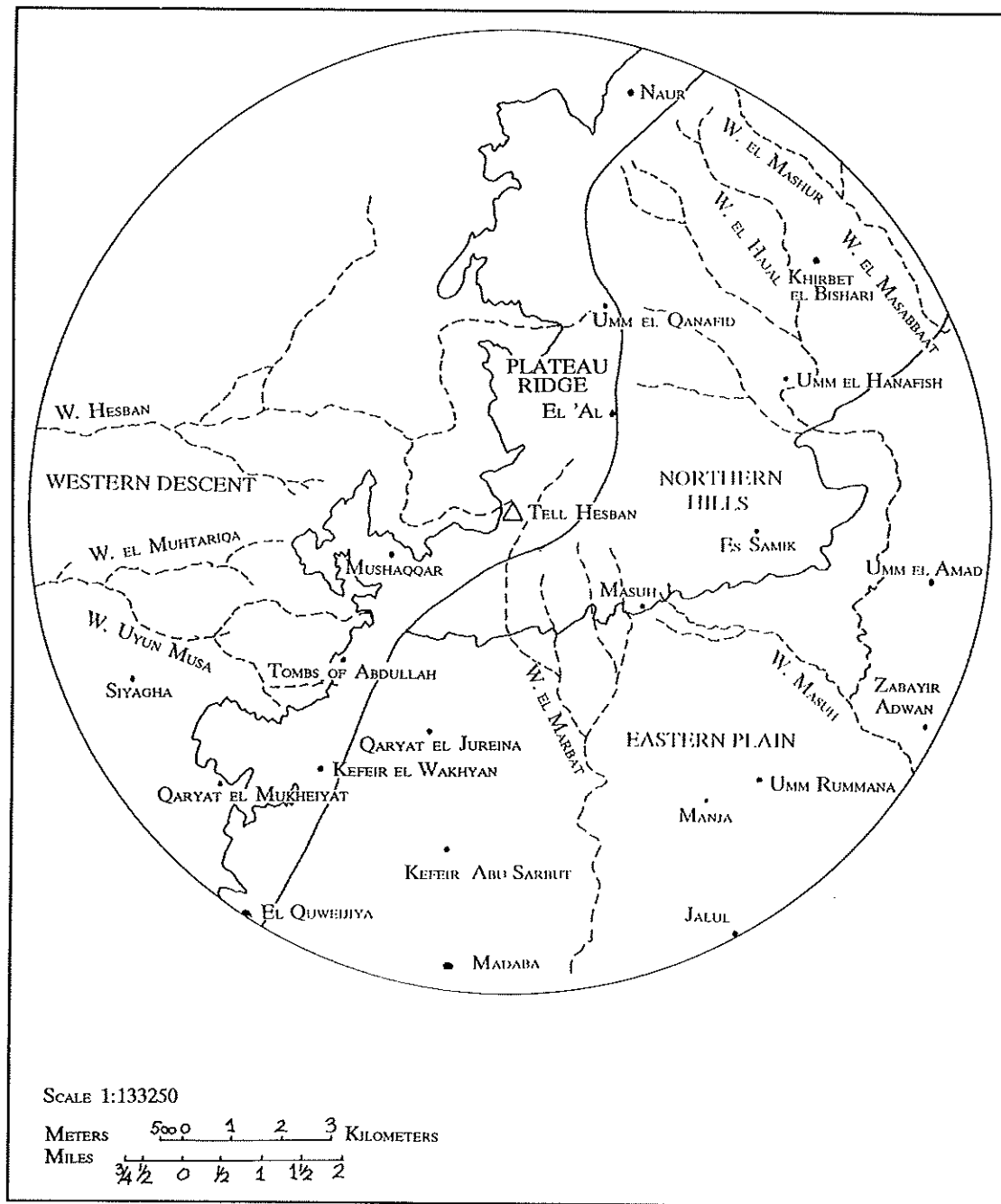


Fig. 3.12 Project area villages ca. 1953



tarization are particularly noteworthy. Again, due to inadequate data for the project area, I must turn to data available for Jordan as a whole in order to gain an idea of what very likely happened on a smaller scale within the project area. Relying once more on Konikoff's (1943) figures for the years between 1927 and 1938, I note the following: a marked drop-off in the quantity of camels (from 13,800 to 4,700); a significant increase in the quantity of draft animals such as cattle (from 32,500 to 52,700) and donkeys (from 17,800 to 24,500); a slight decline in the quantity of sheep (from 220,900 to 200,400) and an appreciable increase in the quantity of goats (from 344,500 to 393,600). This latter change is readily accounted for by the fact that as more and more small livestock was being produced by sedentaries, and as more and more land was being put under cultivation, locally available pastures became increasingly sparse and marginal in quality. Under such conditions the goat, because of its hardier ways, became increasingly favored. Indeed, by 1938 goats came to outnumber sheep by 2:1. During this same period no appreciable changes occurred in the quantity of horses (from 5,000 to 5,500), although mules were decreased somewhat in numbers (2,400 to 1,500).

Another consequence of settlement which is worthy of notice was that poultry began to be produced in gradually increasing quantities. Thus, by 1938 the number of fowls and laying hens produced in Jordan had reached 45,200 and 271,000 respectively (Konikoff 1943: 53). The presence of poultry in the project area from the beginning of settlement is attested to by Forder's remarks upon being hosted as a guest in Madaba in 1891, for he comments that he was served "in usual Arab style . . . two baked fowls, boiled rice, and warm bread" (Forder 1909: 9). Because poultry require no pastures and are practically omnivorous in their eating habits, as sedentarization progressed they gradually came to be recognized as a practical alternative to sheep and goats' meat among villagers and townsmen alike.

In addition to the connection which has already been noted between the expansion of cereal farming, changes in the composition of livestock and the location of settlements on the edges of fertile valleys and plains on the plateau, a further connection appears to have existed between these developments and types of housing

used. Of all of the operational facilities which became commonplace during the early decades of sedentary existence in Jordan, none are more characteristic of times of uncertain security than the fortified farm building. Architecturally such buildings are readily recognized, for most of them were built of anciently hewn stone; their roofs were held in place by one or more arches covered by mud-and-earth roofs laid down on top of wooden cross beams (pl. 3.26). Typically windows were either nonexistent or very small, being openings protected by bars of wrought iron. Inside, these buildings were partitioned by the two ends of the arches (pl. 3.27).

Granaries were often constructed between these arches on one or both sides of the room in order to assure protection of the grain. At night livestock would also be housed inside these dwellings for protection. Buildings of this type are particularly well-preserved in Madaba, Mushaqqar, and Jalul. Forder's (1909: 9) account of his visit to Madaba includes a description of one such building:

Fifteen hours after leaving Jericho we reached Madaba, a large village on the plain. How thankful we were for the warm welcome given us by the chief of the place! He spread rugs and comforts on the floor for us, on which we lay, glad to stretch and rest our weary limbs. The house was just one large room; on each side were raised recesses, in which the family slept or stored their goods. Wide arches supported the roof, which was made of a thick layer of mud and earth held up by beams of wood (compare Buckingham 1825: 33-34 and Tristram 1865: 468).

The concern among pioneer settlers over mutual protection appears also to have led to a clumping together of fortified farm buildings inside a massive perimeter wall, as at Yadoudeh (pl. 3.28), or in a group around a central court as in the case of the *qasr* at Hesban. At Madaba they were positioned within close proximity of each other around a *monastery* which also served as a kind of fort (Conder 1889: 180). This latter arrangement stems, no doubt, from a pattern well-known to the early settlers of that town, most of whom came from Kerak, a town built around a massive Crusader castle. Interestingly, at Jalul, where certain Beni Sakhr tribesmen occupied fortified farm buildings even before the Early Modern Period, the dwellings were not similarly clumped together

Plate 3.26 Fortified farm building at Mushaqqar



Plate 3.27 Inside view of fortified farm building in Madaba

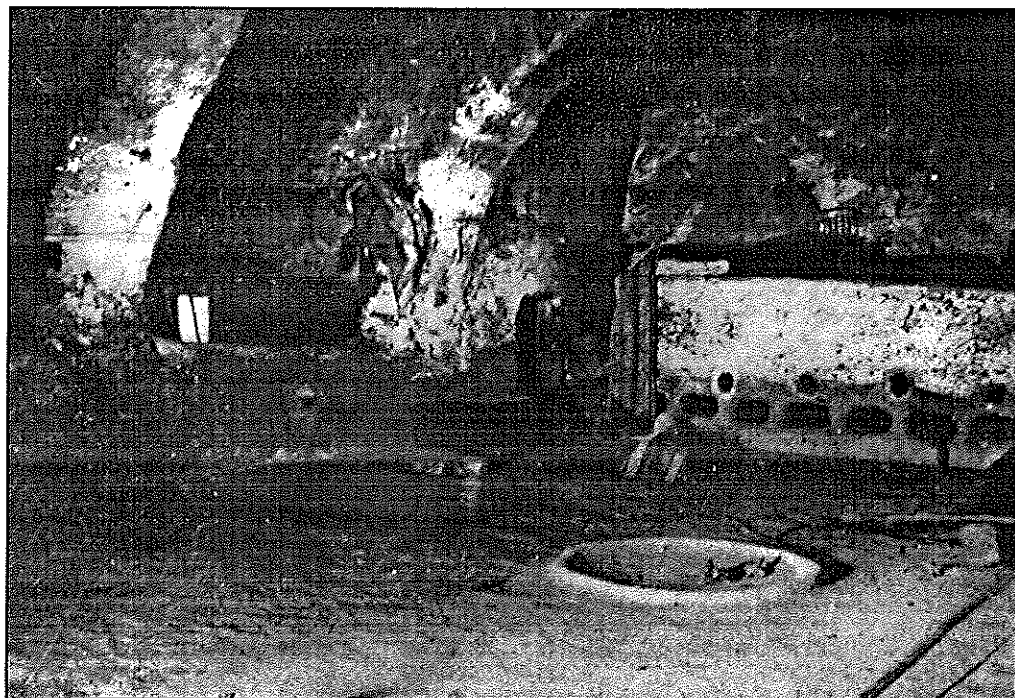


Plate 3.28 Yadoudeh, the Abujaber family farmstead



Plate 3.29 The Bisharat farmstead



for protection. Instead they were spread out over a larger area, having retained the appearance of a Bedouin encampment (cf. Hiatt 1984: 116).

Not only did these early cereal farmers cooperate in order to assure mutual protection against pillage, they also worked together in other ways, such as in the restoration of ancient water collection facilities such as cisterns and water channels, and in the rebuilding and replanting of anciently constructed terraces and floodwater control systems. Later on, as small garden plots and fruit trees were planted, perimeter walls had to be constructed as well to protect these crops from thieves and grazing animals. Such walls were usually made from boulders removed in the process of clearing and plowing. As already mentioned, livestock were kept inside their owners' fortified farm buildings at night, although caves continued to be used as well for this purpose.

Whereas during transhumant days, bread had typically been baked on a round concave metal platter over an open fire, upon settling in villages, people began to bake it in baking ovens called *tabuns* (cf. McQuitty 1984). These were made in different ways, some having been placed in the ground, others above the ground. Consisting of an enclosed heat chamber, *tabuns* permitted villagers to bake leavened bread which rises when placed inside the hot oven. By contrast, as transhumants they had to make do with thin sheets of flat unleavened bread called *shrack*, which is all that it was possible for them to make in the absence of any kind of enclosed oven. The making of *shrack* was by no means abandoned by most villagers, however, for, as we found at Hesban, it has continued to be a favorite type of bread among many of them right through to the present.

The emphasis on cereals and bread ovens during the Early Modern Period had a predictable effect on the diet which prevailed in that its most important ingredients were bread and gruel made from wheat or barley. Gradually, as sedentarization progressed, staple items common in the nomadic diet such as ghee and sour milk diminished in importance as legumes and fresh vegetables, especially tomatoes and cucumbers, gained in importance (cf. Yacoub 1969: 15-17). As orchards began to be planted locally, their fruits also gradually entered the diet in season. Particularly important in this regard were olives, for they

supplemented and gradually took the place of fat supplied by sheep and camels. As was noted earlier, sheep gradually diminished in quantity during the Early Modern Period because of the worsening of pasturage conditions. Also more common in the village diet were goats' milk and goats' meat, chicken and other poultry, but goats' meat as well. As in earlier times, sheep were slaughtered and eaten only on special occasions.

To a large degree, the shifts which occurred in dietary conditions during the Early Modern Period were due to changes in foods produced locally. These changes, in turn, were a consequence of the changes in landuse discussed earlier. Throughout most of this period, subsistence production was the rule for most farmers, cereals being the principal crop produced in sufficient quantities to generate a surplus. Of poultry, vegetables, and fruits very little remained for export to urban areas even as late as 1938 (Konikoff 1943). This emphasis on subsistence production represents, therefore, an important line of continuity between transhumance and village cereal farming which was not fully broken until the advent of intensive urban-oriented agriculture during the Modern Period.

When Urban-Oriented Farming Prevailed: The Modern Period

A turning point for agriculture in Jordan was the decade which began ca. 1950. During this decade the organizational center of gravity responsible for agricultural production in Jordan shifted from local villages to bureaucracies dominated by urban interests. Jordan's first Five-Year Plan was put into action, which meant that agricultural production goals for the country were being set in an explicit manner by the state. Along with this plan came a clear mandate for a number of government agencies, such as the Ministry of Agriculture, the Agricultural Credit Corporation, and the Ministry of Education to develop the infrastructure needed so that the plan's goals could be reached on the local village level (Aresvik 1976: 9). Furthermore, during this decade and those immediately before and after it, Palestinian refugees entered Jordan by the hundreds of thousands, resulting not only in increased pressure on village farmers to produce surpluses, but also in additional farm labor and

new agricultural know-how. As a result of these and a number of related developments, the subsistence grain farming which had prevailed during the Early Modern Period in Jordan soon gave way to intensive, market-oriented production not only of cereals, but also of poultry and other livestock, and especially, of fruits and vegetables.

The influx of Palestinian refugees to East Jordan came in two waves, the first following the Palestine War of 1948 and the second after the Six-Day War in 1967. Of the first wave of refugees to territories controlled by the state of Jordan 318,686 ended up in East Jordan (as opposed to on the West Bank). To this number another 239,285 were added in the wake of the 1967 war, so that in December of 1972 the total number of registered refugees in East Jordan was 557,771 (Aresvik 1976: 9). Given a pre-war population for East Jordan of approximately 400,000, this means that the population more than doubled over the decade and a half following the war of 1948 (cf. Vatikiotis 1967: 9). Throughout the remainder of the 1970s to the present, the population of Jordan has continued to grow at a rapid rate because of the steady influx of Palestinian refugees and war-weary nationals from Lebanon.

The steady deterioration of the natural environment which had accompanied the process of sedentarization throughout the Early Modern Period has continued nearly unabated through the Modern Period. Of particular concern to government planners has been the heavy demand which the exploding population of the Modern Period has placed on already limited water supplies. This concern reached a high point in 1977 with the publication of a National Water Masterplan for the country of Jordan (Agrar- und Hydrotechnik 1977). Unlike the heavily populated Late Roman and Byzantine periods in Jordan, when the supply of water was increased largely through collection of rainwater in cisterns and reservoirs before it drained underground, the present population—including the population of the project area—has resorted to pumping up underground waters at a rate never before equaled in history (see Chapter Six). In certain areas, especially in the vicinity of heavily settled areas such as Amman, such pumping has exceeded the rate at which some underground water reservoirs have been able to recharge, a situation which has further heightened

concern over the long-term future of Jordan's water supply. It is to the credit of government planners that a comprehensive approach has been adopted in dealing with this problem, as is evidenced by the National Water Plan. It is encouraging also to see the growing emphasis which is being given to reforestation, the tangible results of which are readily apparent within the project area to those of us who have been returning on a regular basis to Jordan over the past two decades.

Between the end of the Early Modern Period, or ca. 1953, and ca. 1975, at least nine additional villages came into existence within the project area (fig. 3.1). During this period population growth was particularly heavy in the towns of Madaba and Naur, and in villages located along the plateau ridge and the western descent. On the basis of village data gathered in 1975 by CARE-Jordan, and the sources described earlier with reference to Early Modern Period population statistics, a more precise idea can be gained of the demographic shifts which took place within the project area during the first 25 years of the Modern Period.

For example, the population of Madaba jumped from an estimated population of about 8,000 in 1953 to more than 25,000 by 1975. Naur increased in size from an estimated population of about 2,000 in 1953 to more than 5,000 in 1975. This means that in Madaba, about 790 persons were added each year between 1953 and 1975. For Naur, this figure would be about 129 persons per year. For the other villages of the project area combined, the rate of accession of new members was about 634 persons per year, 381 or 60% being added to existing or new villages along the plateau ridge or the western descent. Thus, the combined population growth for the project area as a whole during the first 25 years of the Modern Period was from an estimated population of 13,000 in 1953 to about 42,000 by 1975 (see fig. 3.13).

The significantly higher rise in population numbers which occurred in the towns of Madaba and Naur and in villages along the plateau ridge and western descent is a phenomenon which can be explained in light of the livelihoods with which the Palestinian newcomers were most familiar. To begin with, unlike the native population of East Jordan, whose emphasis had traditionally been on

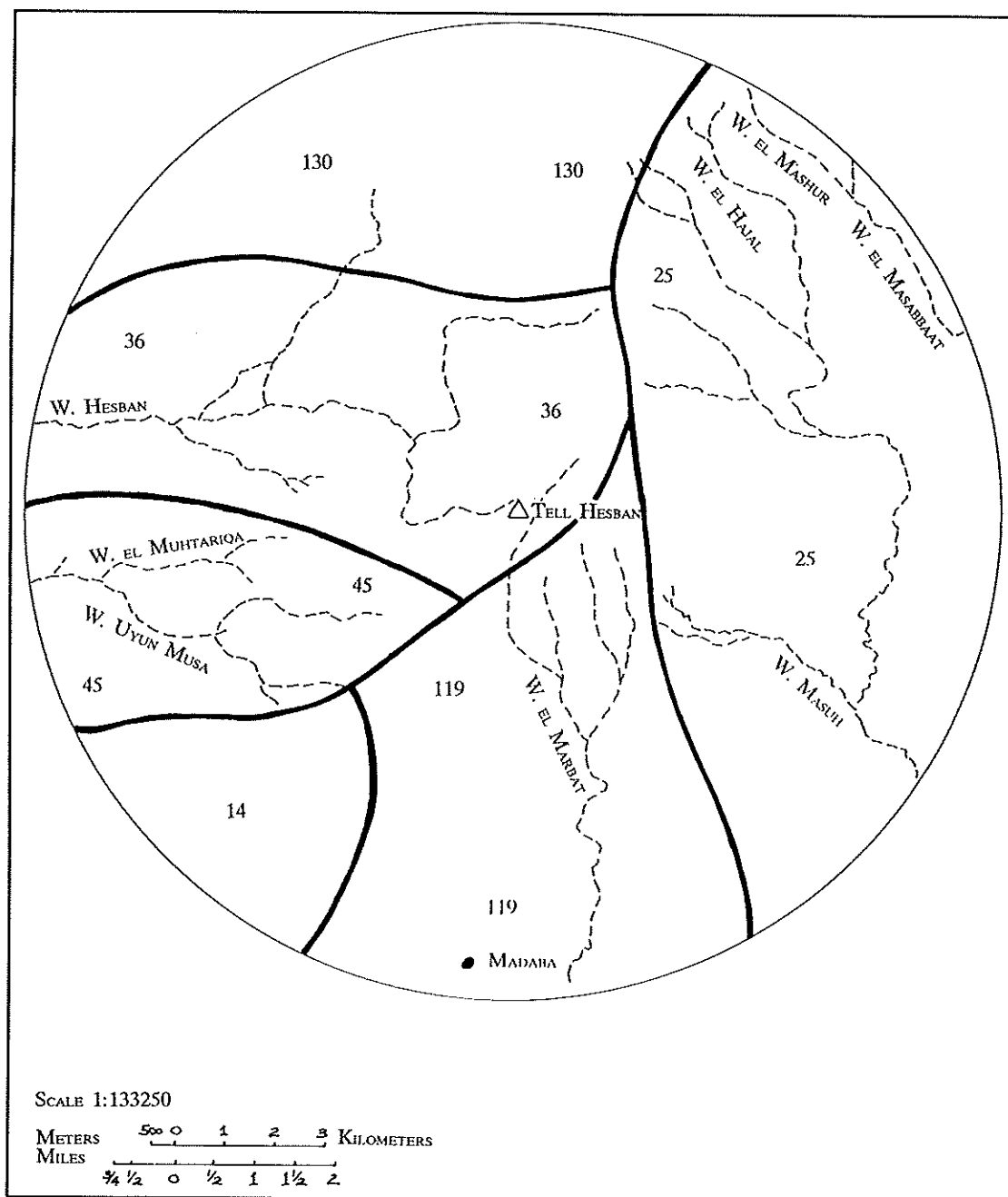
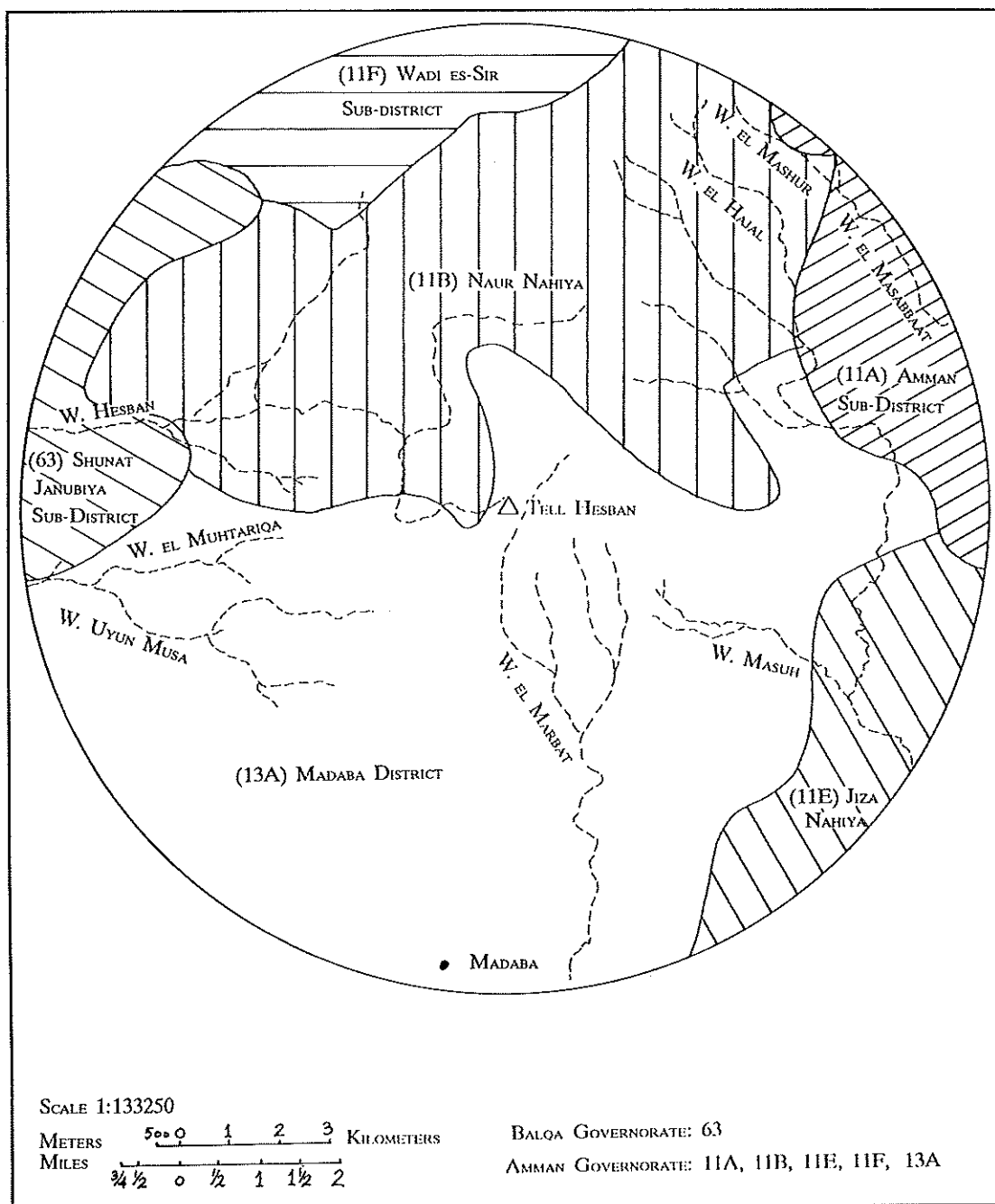
Fig. 3.13 Population density (inhabitants per mi²) ca. 1975 (after Agrar- und Hydrotechnik 1977)

Fig. 3.14 Current administrative units (after Agrar- und Hydrotechnik 1977)



subsistence herding and cereal farming, these Palestinian newcomers were experienced orchardists and gardeners. They were also experienced wage laborers, having become increasingly dependent upon it in response to expanding opportunities created by the Public Works Department of Mandate Palestine during the 1930s and 1940s (Rosenfeld 1958; Taqqu 1979). Given their arrival at a time when opportunities for public service jobs were expanding in Jordan, especially in urban areas, but also in district headquarters like Madaba and Naur (see fig. 3.14), it can be seen why the influx of Palestinians into these towns was much more massive than it was into the smaller villages. Significantly, however, where Palestinians did settle in smaller villages, it tended to be in places where their know-how as growers of vegetables and fruits could be put to the best advantage, namely in locations along the plateau ridge and the western descent. Thus a direct link can be noted between the rise in population numbers in these villages and the rise in more labor-intensive forms of agriculture within the project area.

Another phenomenon which is particularly noteworthy in regards to the movement of Palestinians into East Jordan was that as large numbers of them were forced to abandon their sedentary existence in villages on the West Bank and elsewhere in territories under Israeli control, they turned to living in burlap tents and to herding of flocks of sheep and goats as a means to survive with their families during their sojourn. During the '60s and early '70s large numbers of such nomadized Palestinian families, surrounded by their flocks of sheep and goats, could be seen living in their tents on the edges of villages and towns of the project area. The length of their stay in the vicinity of a particular village would vary depending on opportunities for temporary farm labor for the adult males, the hospitality of the host village, and availability of pastures for their herds. Gradually, as their industry as workers and their skill and know-how as gardeners and fruit growers came to be valued more by their hosts, their temporary sojourn nearby a particular village turned into permanent association as they began to build their own permanent dwellings on lands offered them by their hosts. Although today the numbers of nomadized Palestinians are rapidly diminishing, their experience

stands as a modern-day example of the fluidity of traditional Arab society and of the nearly completely neglected phenomenon of nomadization.

To provide an idea of the extent to which not only the inhabitants of the project area, but of East Jordan as a whole, expanded the production of fruits and vegetables during the Modern Period, I shall turn to statistics gathered by the Ministry of Agriculture since 1961. According to figures published by the Department of Statistics (Hashemite Kingdom of Jordan 1967), the production of vegetables in East Jordan reached a high of 438,223 tons in 1967, compared with 42,885 tons in 1928 (Konikoff 1943). In 1972, fruit production reached a high of 149,191 tons, compared with 40,000 in 1938. By contrast, the production of wheat increased only modestly from levels reached in 1938, from 168.4 tons to 244.5 tons in 1974, whereas barley production actually declined from 98.0 tons in 1938 to 40.0 tons in 1974. Thus, with the expansion of wheat and barley production which took place mostly in the plateau regions of Jordan during the Early Modern Period, further expansion of vegetable and fruit production also occurred during the Modern Period, particularly in the Jordan Valley and in the well-watered areas along the piedmont and riverine valleys of the eastern highland.

Although production statistics pertaining exclusively to the project area have not been gathered, some insight into how project area lands are currently utilized can be gained from data provided for the Madaba Subdistrict in the Department of Statistics report for 1979 (Hashemite Kingdom of Jordan 1979). In terms of area devoted to producing crops (given in thousands of square meters or dunums, one dunum being equal to about 1/4 acre), the following are listed as *main crops*: wheat (98,051 dunums), barley (29,847), lentils (10,605), chickpeas (2,283), tomato (1,948), okra (1,168), olives (14,966), and grapes (6,167). *Secondary crops* listed are vetch (111), tobacco (258), eggplant (33), summer squash (292), cucumber (78), snake cucumber (33), watermelon (16), onion (16), peas (64), figs (20), pomegranate (17), almonds (117), plums (153), peaches (23), prunes (33), and apples (48).

As the Madaba Subdistrict does not include most of the western descent or the northern hills, it cannot be regarded as perfectly illustrative of landuse within the project area, but rather of

Plate 3.30 Helmi (far left), a Palestinian, by his tent in 1974



Plate 3.31 The author and his son visiting Helmi inside his new cement house in 1980



landuse on the eastern plain. Precise information on how lands were utilized strictly within the project area would reveal a much greater emphasis on vegetables and fruit trees and a lesser emphasis on wheat and barley. This can be demonstrated on the basis of statistics, gathered by Agrar- und Hydrotechnik (1977), regarding the contribution of fruit tree production to total crop area for villages within the project area. For the four respective subregions the percentage of cultivated area devoted by its villages to fruit production is 15% for the western descent, 15% for the plateau ridge, 12% for the northern hills and 4% for the eastern plain. Furthermore, Ministry of Agriculture statistics available for the Naur Subdistrict, to which most of the northern hills belong, and for the Shuna Subdistrict, to which portions of the western descent belong, show a much greater emphasis on vegetable and fruit production in these hilly and well-watered regions than is found in the Madaba Subdistrict.

The fact that the growing of vegetables and fruit trees is a much more labor-intensive undertaking than is cereal production or herding has already been alluded to. In contrast to cereal farming, which today is largely mechanized and involves very little labor input throughout the growing season except for at the beginning and at the end, fruit-tree production is largely manual and involves reliance on animal-draft power, particularly donkeys and mules, where much of the labor expended is in pruning, binding, plowing, and watering the trees. Since most orchards are located on slopes, each plowing involves an initial passage up and down the slopes followed by a passage back and forth against the slope to prevent erosion and conserve water. Such plowing may be repeated up to five times throughout the growing season. Most watering is done manually, donkeys or trucks being used to haul water to tanks situated on the edges of the orchards. Vegetable production can be even more labor intensive, as watering and weeding around the plants must be done by hand throughout the entire growing season.

To the link between increased population growth in project area villages along the plateau ridge and western descent and increased emphasis on labor-intensive cultivation can be added another link, namely increased production of certain types of livestock. Specifically, as cultiva-

tion has increased along the terraced hillsides and slopes of the western descent and plateau ridge the numbers of mules and donkeys have risen as well. This is because these animals are better suited for plowing in such terrain than oxen. Indeed, while the tractor and combine have largely replaced the teams of oxen which used to be seen on the plain, the utilization of mules and donkeys along these terraced hillsides has increased steadily. This local pattern reflects trends in East Jordan as a whole, for since 1938 the cattle population has dropped from 52,700 to 26,309 in 1961, whereas the number of donkeys increased from 24,500 to 36,477 over the same period, as did the quantity of mules, from 1,500 to 8,700. By comparison, over the same period the quantity of sheep and goats increased only slightly, from a combined total in 1938 of 594,000 to 624,718 in 1961 (Konikoff 1943; cf. Hashemite Kingdom of Jordan 1967).

Another trend which appears to be characteristic of the rise of intensive forms of agriculture is the rise in numbers of barnyard animals, especially chickens, but also pigeons, turkeys, ducks, geese and, in certain areas, swine. As was noted earlier, these livestock require little or no pasture, indeed, they thrive on eating the organic refuse which is produced daily in agricultural villages and towns. Statistics indicative of this trend for East Jordan as a whole are suggestive of its magnitude. Thus, between 1938 and 1961 the number of chickens raised in East Jordan increased from a total of 723,000 to 2,370,585 (Konikoff 1943; Hashemite Kingdom of Jordan 1975: 149). This trend is well illustrated in the project area in that a number of chicken farms can be seen on the edges of several villages, particularly those on the eastern plain inhabited by descendants of the Beni Sakhr.

Along with the shift away from village subsistence farming toward market-oriented production of crops and livestock has come a commensurate change in operational conditions such as increases in facilities built and operated by government organizations for producing, processing, storing, and distributing agricultural products. To begin with, to a great degree, the construction of roads and railways, begun during the Early Modern Period played a crucial role in laying the foundation for the take-off of vegetable and fruit production during the Modern Period. As produce of

this kind needs to be brought from village to market as quickly as possible or it perishes, this emphasis has obviously continued into the Modern Period as traditional donkey-tracks have been upgraded into a network of paved roads tying villages to local market towns and urban centers. Furthermore, as was discussed earlier, a great deal of emphasis has been given to increasing the water supply through the drilling of deep wells and the installation of water pipes for bringing water to villages and fields. Also characteristic of the Modern Period is the emphasis being given to the construction of public granaries, food processing plants, and market facilities (Pedersen 1968: 25). All of these developments attest to the important role of the state in creating and maintaining the technological, social, and economic infrastructure necessary for local-level food production to intensify to the levels reached during the Modern Period.

The most distinctive feature of the dietary conditions which have emerged during the Modern Period is their variety due to delocalization. As a result of the ease with which foodstuffs can be transported from surrounding localities and even from distant lands, a much greater proportion of the foods consumed are neither locally grown nor seasonally restricted. In other words, the traditional linkage—characteristic of subsistence diets—of foods consumed to foods produced locally has been partially broken, especially in urban areas and among the more market-oriented households in rural areas. Thus, not only is the diet less seasonal, it also is less restricted in terms of variety of food items consumed. This is due to the fact that the Modern Period household can benefit to a much greater extent from regional variability in agricultural production thanks to the interlinkage of widely dispersed regions by means of modern markets and transportation.

It is important to emphasize, however, that the extent to which the traditional village subsistence diet has been abandoned by a particular household today depends to a great degree on the extent to which the economy of the household has been monetarized and modernized. The typical fare in the villages of the project area throughout the '70s, for example, was the traditional village subsistence diet consisting of

bread, *leben*, olive oil, eggs, and seasonally available fruits and vegetables. Of meats, chicken was most frequently consumed, sheep or goats' meat being served primarily on special occasions. Such traditional diets prevail in many urban areas as well, especially among the poorer classes, because locally grown produce is generally much more affordable. Such a diet is also often preferred for sentimental reasons by wealthier people, as it provides some continuity with a rapidly disappearing past.

Configurations of Locally Prevailing Food System Conditions

In the foregoing pages, three different configurations of food system conditions have been set forth with reference to our project area. Specifically discussed were some of the ways in which changes in environmental, settlement, landuse, operational, and dietary conditions within a 10-km radius of Hesban have resulted in three successive configurations of prevailing conditions, namely transhumant pastoralism during the Late Ottoman Period, village cereal farming during the Early Modern Period, and urban-oriented intensive agriculture during the Modern Period. In what ways, then, are we now better prepared to begin the task of reconstructing the food system conditions which prevailed during earlier centuries and millennia within the project area?

To begin with, the environmental conditions to which project area populations have had to adapt have come into clearer focus as a result of this undertaking. In many respects these conditions have been found to be reflective of Middle Eastern conditions as a whole, particularly in regards to the inevitability of summer droughts and the consequences of this for human as well as plant and animal survival. Furthermore, a base line understanding of the adaptive strategies which project area populations have pursued throughout the recent past is now in hand, including an appreciation of their uniqueness as well as of their similarity in comparison with other Middle Eastern populations.

Most important for the present study, however, we have become acquainted, in a heuristic sense, with the process of identifying the parts of the local food system, thinking about how these parts are arranged at various points in time, iden-

tifying the prevailing features of these arrangements so as to be able to order them into distinctive configurations, and coming up with suitable labels for these configurations. It is this experience in systematic observation and analysis, this opportunity to become intimately acquainted with daily-life conditions throughout the most accessible historical period within the project area, which has best prepared us for the task ahead, namely to make sense of its fragmentary archaeological past.

In anticipation of this task, it is useful at this point to attempt to clarify exactly what is meant when reference is made in the following chapters to *configurations*. In harmony with what has already been attempted with reference to the recent past, it is suggested that the interrelationships which prevail over a given period of time with regards to environment, settlement, landuse, operational, and dietary conditions constitute a distinctive pattern or configuration—a particular arrangement of certain parts of the local food system. Thus, when reference was made above to pastoral transhumance, to village cereal farming, or to urban-oriented intensive agriculture, three analytically distinguishable configurations—three different hypotheses regarding the prevailing arrangements of the parts of the local food system—are what was meant.

Crucial to this analysis as well is the meaning of the word *prevailing*. In order to reckon with

the dynamic nature of food systems, their periods of intensification and abatement, which result in constantly changing configurations of daily-life conditions, the term *prevailing* has been employed here to suggest correspondence of the empirical evidence to a particular hypothesized configuration. Thus, the empirical data examined with respect to the Late Ottoman Period seemed to correspond best with the hypothesized transhumant pastoralism configuration, whereas that examined with respect to the Early Modern Period fit best with the hypothesized village cereal farming configuration.

It must be acknowledged, of course, that these hypothesized *prevailing configurations* are, at best, first approximations—useful primarily as heuristic devices in the service of empirical research. It is anticipated, for example, that as a result of further research, discussions, and criticisms dealing with the contents of this chapter, the configurations proposed here might need to be modified somehow or that several additional ones might profitably be added to those already proposed in order to better present the food system conditions which prevailed during times of transition from one to another of these configurations. The same disclaimer obviously applies to configurations proposed in subsequent chapters on the basis of analysis of the archaeological materials from earlier centuries and millennia.