

# Quaternary of the Levant

Environments, Climate Change, and  
Humans

Edited by

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## 76 The Epipalaeolithic and Pre-Pottery Neolithic of Lebanon

ANDREW N. GARRARD

### 76.1 ENVIRONMENTAL CONTEXT

The topography of Lebanon is dominated by two parallel mountain ranges (see also Avni, Chapter 2 of this volume): Mount Lebanon to the west rises to >3,000 m, and Mount Hermon and the Anti-Lebanon range to the east rise to 2,800 and 2,600 m respectively. These are separated by the major fault valley of the Bekaa, which is drained by the Litani River and by the Assi River, the headwaters of the Orontes. These ranges are bounded on the west by the Mediterranean coast (Fig. 76.1). The current annual rainfall varies according to altitude and the impact of the rain shadows created by the two mountain ranges (Kushnir *et al.*, Chapter 4 of this volume). It varies from 700 mm along the coast to a maximum of 1,500 mm over Mount Lebanon. It drops to 300–400 mm in the Bekaa before rising to 500–600 mm over the Anti-Lebanon. Finally, on the eastern Syrian side of the range, it drops to 200–300 mm (e.g. Service Météorologique du Liban 1977; Fig. 3.1). The vegetation in undisturbed areas shows marked zonation according to rainfall and altitude. On the western flanks of Mount Lebanon, it varies from evergreen oak and pine forest below 1,000 m, to deciduous oak woodland up to ca. 1,500 m, to cedar, fir, and juniper forest up to ca. 2,000 m, to sub-alpine habitats above. In those parts of the Anti-Lebanon where woodland survives, it ranges from deciduous oak to juniper at higher elevations (Abi-Saleh & Safi 1988).

In recent years, several palaeoenvironmental projects have been undertaken in Lebanon, which have provided information on conditions through the late Pleistocene and early Holocene. The most detailed data has come from a 36 m core drilled in the karstic Yam-mouneh Basin, which lies at 1,360 m on the eastern flanks of Mount Lebanon (Figure 76.1; Deville *et al.* 2010; Gasse *et al.* 2011, and this volume). A combined study of the sedimentation record, pollen samples, and the  $\delta^{18}\text{O}$  analysis of carbonates from ostracods has indicated a harsh Last Glacial Maximum with little arboreal vegetation. There appears to have been a drop in the circulation of karstic groundwater at that time, and it has been suggested that this may have resulted from it being stored in ice above 2,000 m on Mount Lebanon. Evidence for possible glacial moraines have been found

in the upper Qadisha (Cedar) Valley as well as elsewhere (Moulin *et al.* 2011). From ca. 16 ka BP, there appears to have been a rapid re-establishment of humid or warmer conditions, and deciduous oaks appear to have recolonized ca. 13 ka. Two other records were obtained for the terminal Pleistocene and early Holocene from an oxygen and carbon isotopic analysis of speleothem deposits from Jiita (Jeita) Cave just north of Beirut, and from a pollen core from the Aammiq wetland area in the southern Bekaa Valley (Hajar *et al.* 2008; Verheyden *et al.* 2008). Both of those hint at higher aridity around the time of the Younger Dryas.

### 76.2 RESEARCH ON THE EPIPALAEOLITHIC AND PRE-POTTERY NEOLITHIC

The most active period of archaeological field research on the Palaeolithic and Neolithic of Lebanon occurred in the 15 or so years prior to the outbreak of war in 1975. There were a wide range of surveys and excavations undertaken at this time, and good recent reviews are in Yazbeck (2004), Häidar-Boustani (2013) and Shaw (Chapter 61 of this volume). Earlier accounts are in the syntheses of Cauvin (1968), Besançon *et al.* (1972, 1975–1977), Copeland (1975) and Hours (1975, 1992). The inventories of Stone Age sites in Lebanon produced by Copeland and Wescombe (1965, 1966), and Copeland and Yazbeck (2002), are useful sources on the individual sites. However, in spite of the relative surge of fieldwork at that time, the Epipalaeolithic is less known than the late Lower, Middle, and Upper Palaeolithic; the Pre-Pottery Neolithic is poorly known relative to the Pottery Neolithic.

Since the late 1990s, archaeological field research has restarted in Lebanon, but in relation to the Epipalaeolithic and Neolithic this has been largely restricted to excavations at the cave sites at Moghr el-Ahwal in the Qadisha Valley (Garrard & Yazbeck 2004, 2008, 2013) and to small-scale re-evaluations of the Pre-Pottery Neolithic A site of Nachcharini in the Anti-Lebanon and the late Pre-Pottery Neolithic B site of Tell Labwe South in the Bekaa (Garrard *et al.* 2003; Häidar-Boustani 2013) (Fig. 76.1).



**Figure 76.1** Palaeolithic and Neolithic sites in Lebanon and adjacent areas. 1 – Abu Halka (Upper Palaeolithic); 2 – Keoué (Middle Palaeolithic); 3 – Moghr el-Ahwat (Middle and Epipalaeolithic, Neolithic); 4 – Masloukh (Lower Palaeolithic); 5 – Byblos (Neolithic); 6 – Nahr Ibrahim (Middle Palaeolithic); 7 – Ras el Kelb (Middle Palaeolithic); 8 – Jiita (Epipalaeolithic); 9 – Ksar 'Akil (Middle, Upper, and Epipalaeolithic), Abri Bergy (Epipalaeolithic), Antelias (Upper and Epipalaeolithic); 10 – Ras Beirut (Lower and Middle Palaeolithic); 11 – Borj Barajne (Epipalaeolithic, Neolithic); Tell aux Haches (Neolithic); Tell aux Scies (Neolithic); 12 – Naamé (Middle Palaeolithic); 13 – Mouktara (Neolithic); 14 – Borj Qinnarit (Lower Palaeolithic); 15 – Bezez (Lower, Middle, and Upper Palaeolithic, Neolithic), Abri Zumoffen (Lower Palaeolithic); 16 – Qana (Middle Palaeolithic); 17 – Joub Jannine (Lower Palaeolithic); 18 – Saaidé (Epipalaeolithic, Neolithic); 19 – Tell Ard Tlaili (Neolithic); 20 – Tell Labwe (Neolithic); 21 – Nachcharini (Epipalaeolithic, Neolithic); 22 – Tell Nebe Mend (Neolithic); 23 – Yabrud (Lower, Middle, Upper, and Epipalaeolithic); 24 – Baaz (Epipalaeolithic, Neolithic); 25 – Ghoraifé (Neolithic); 26 – Tell Aswad (Neolithic); 27 – Tell Ramad (Neolithic); 28 – Berekhat Ram (Lower Palaeolithic); 29 – Quneitra (Middle Palaeolithic); 30 – Ain Mallaha (Epipalaeolithic), Beisamoun (Neolithic).

The following provides a brief review of our knowledge of the Epipalaeolithic and Pre-Pottery Neolithic in Lebanon, and this is followed by a summary of the excavation results from Moghr el-Ahwal, with its Kebaran to Late Neolithic sequence.

### 76.3 THE KEBARAN

The Kebaran is the best known of the Epipalaeolithic periods, having been excavated at three sites in the foothills of Mount Lebanon northeast of Beirut, and from the surface of a small number of open-air sites. The excavated sites are Ksar 'Akil (Bergman *et al.*, Chapter 30 of this volume) and Abri Bergy in the Nahr Antelias, ~3 km inland from the present coast, and Jiita II in the Nahr el Kelb, ~8 km inland (Fig. 76.1). The small cave at Abri Bergy was excavated several times between 1900 and 1948, the last being by Ewing (Copeland & Waechter 1968). The cave was destroyed by quarrying in 1969. The large rockshelter of Ksar 'Akil was the subject of two major excavations, the first being undertaken by Ewing and others (1937–38 and 1947–48), who excavated extensive 20 m Middle and Upper Palaeolithic deposits as well as 2 m of Epipalaeolithic (Bar-Yosef 1970: 48–50; Copeland 1975; Bergman *et al.*, this volume). This was followed later by the rigorously controlled excavations of Tixier (1969–1975) who excavated to a depth of 7 m (Tixier & Inizan 1981; Mellars & Tixier 1989). The rockshelter at Jiita II was carefully excavated by Hours (1964–75) (Chavaillon & Hours 1970; Hours 1973, 1976, 1992).

Hours (1976, 1992) divided the Kebaran in Lebanon into two phases: the Early and Classic Kebaran. The Early Kebaran was found at Jiita II (levels IV–II<sub>2</sub>) and Ksar 'Akil (Tixier levels 3–1, Ewing levels IV–II). There were variations in the assemblages between the sites, but typical features included small bladelets with semi-abrupt fine inverse or direct retouch, tiny scalene triangles and Dhour Choueir bladelets. In later stages, abruptly retouched or truncated pieces also appeared. The Classic Kebaran was found at Jiita II (level II<sub>1</sub>–I), Ksar 'Akil (Ewing level I), and Abri Bergy (level V). It was variously characterized by Kebara points, Jiita points, bladelets with acute truncations, and long bladelets with single or double oblique truncations; in later stages, bipointed bladelets and micro-gravettes, small borers and micro-end-scrapers also appeared (Besançon *et al.* 1975–1977: 38–41; Copeland & Yazbeck 2002: 144–5).

Apart from flaked stone assemblages, bone points including one with incised decoration were obtained from Jiita II (Copeland & Hours 1977), and both bone points and perforated marine shell beads have been described from the Kebaran levels at Ksar 'Akil (Newcomer 1974; Inizan & Gaillard 1978). At Jiita II the rubble footings of a probable shelter measuring ca. 5.5 × 2.5 m were found constructed against the inner rock face of the locality with hearths inside (Melki 2004). Kersten (1987, 1989, 1991, 1992) reported the faunal assemblages from the Ewing excavations at Ksar 'Akil. Within the Epipalaeolithic levels, *Dama mesopotamica* accounted for 41% of the large mammal fauna, followed by *Capra aegagrus* (19%), *Capreolus capreolus* (4.5%), and *Sus scrofa* (3%) (Kersten 1989: 187). J. Clutton-Brock (pers. comm.) has studied the fauna

from Jiita II, which lies in a deeply incised craggy valley slightly further inland, and at this site, *Capra* is the dominant species with *Dama* forming a lower percentage.

### 76.4 THE GEOMETRIC KEBARAN AND NATUFIAN

Until the recent excavations at Moghr el-Ahwal (see below), the Geometric Kebaran was only known from the excavated cave-site of Abri Bergy levels II–I in Nahr Antelias (Copeland & Waechter 1968) and from the surface of a number of open-air sites. These included Neba'a el-Mghara, located at about 1,200 m elevation in the Nahr el Salib to the northeast of Beirut (Hours 1970), and several sites in the Sands (fossil sand dunes with palaeosols) to the immediate south of Beirut (Fleisch 1970). The industries are characterized by geometric microliths and particularly by oblong, abruptly backed and bi-truncated trapeze-rectangles, and by other tools such as short borers and Falita points (Besançon *et al.* 1975–1977: 42–43; Copeland & Yazbeck 2002: 145). Apart from the lithic assemblages, very little other data is available from the sites except for a few details on the fauna of Abri Bergy, which includes *Dama*, *Capra*, *Capreolus*, rare *Sus*, and a single specimen of *Ursus* (Hooijer 1961: 56).

Prior to work at Moghr el-Ahwal, the Natufian was also only known from a few localities in Lebanon (Copeland 1991; Garrard & Yazbeck 2013). The only reported site with a rich and extensive occupation is Saaidé II, which lies beneath the modern village on a low promontory on the western side of the Bekaa Valley with springs and marshland at its base (Fig. 76.1). Schroeder (1991) excavated three test trenches at the locality in 1970. Although it is disturbed by modern terracing and house building, the site appeared to have covered several thousand square metres. The lithic industry was dominated by blade tools including end-scrapers, burins, borers, notches and denticulates, truncations and backed pieces. The microliths were characterized by lunates, the majority with abrupt backing and only one with Helwan retouch. The geometrics also included triangles and trapezes. An extensive limestone and basalt groundstone industry was recovered from the surface of the site including boulder mortars, deep cylindrical mortars, and shaft-straighteners. A longitudinally split limestone mortar was found above a human burial during the excavations (Solivères 1975–1977). Churcher (1994) studied the diverse fauna, finding species characteristic of woodland, open country, and marshland. The larger mammals included *Bos primigenius*, *Capra aegagrus*, *Gazella gazella*, *Cervus elaphus*, *Capreolus capreolus*, and *Lepus capensis*. There was also a wide range of carnivores and birds as well as many fragments from *Testudo*.

Apart from Saaidé and Moghr el-Ahwal (see below), the Natufian has only been reported from four localities on the western side of Mount Lebanon and two in the Anti-Lebanon Mountains. The former are surface collections from the open-air site of Borj Barajne in the Sands south of Beirut and excavated disturbed material from Jiita II East, the large cavern of Jiita III and Antelias Cave northeast of Beirut (Fig. 76.1; Copeland 1991; Garrard & Yazbeck 2013). The sites in the Anti-Lebanon include surface material from Ain Chaub

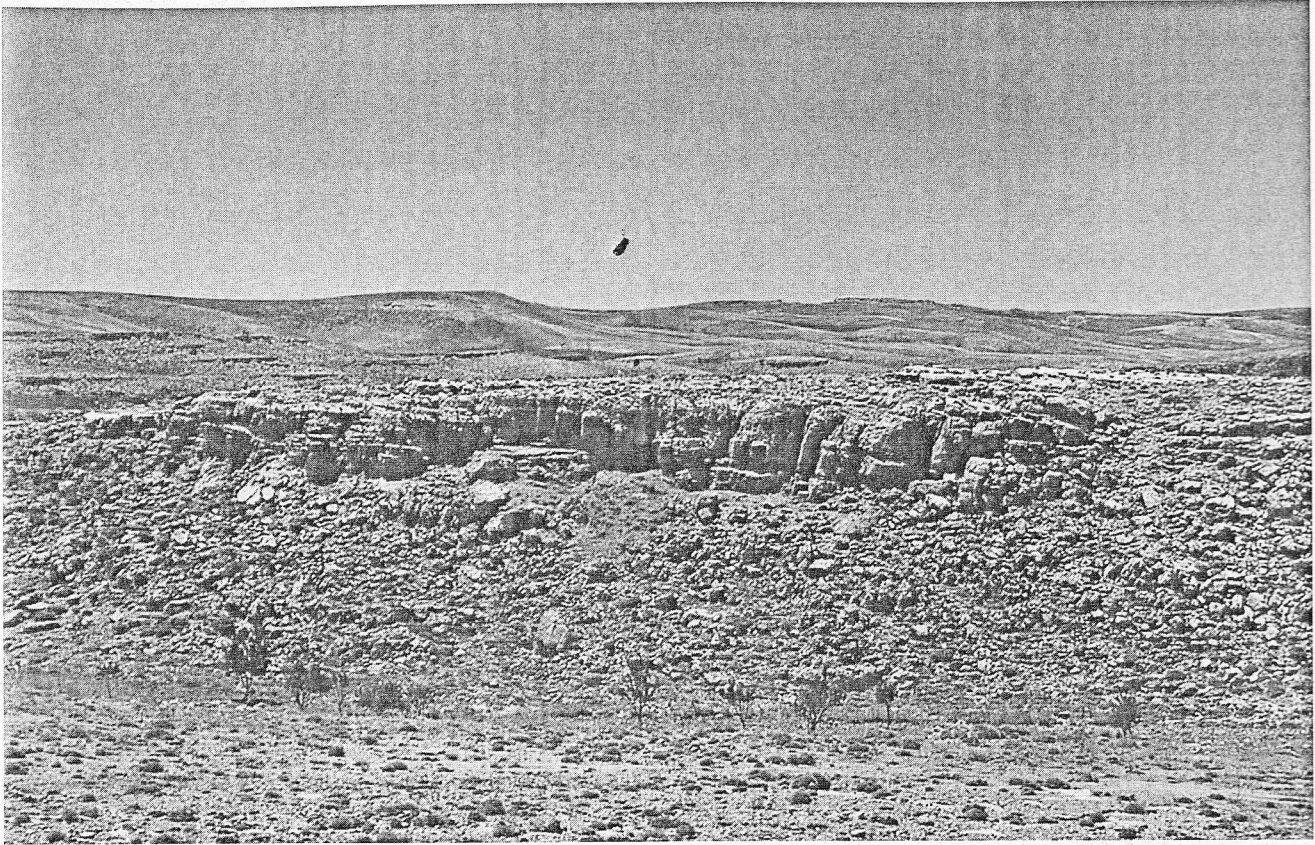


Figure 76.2 View southwest of Nachcharini Cave.

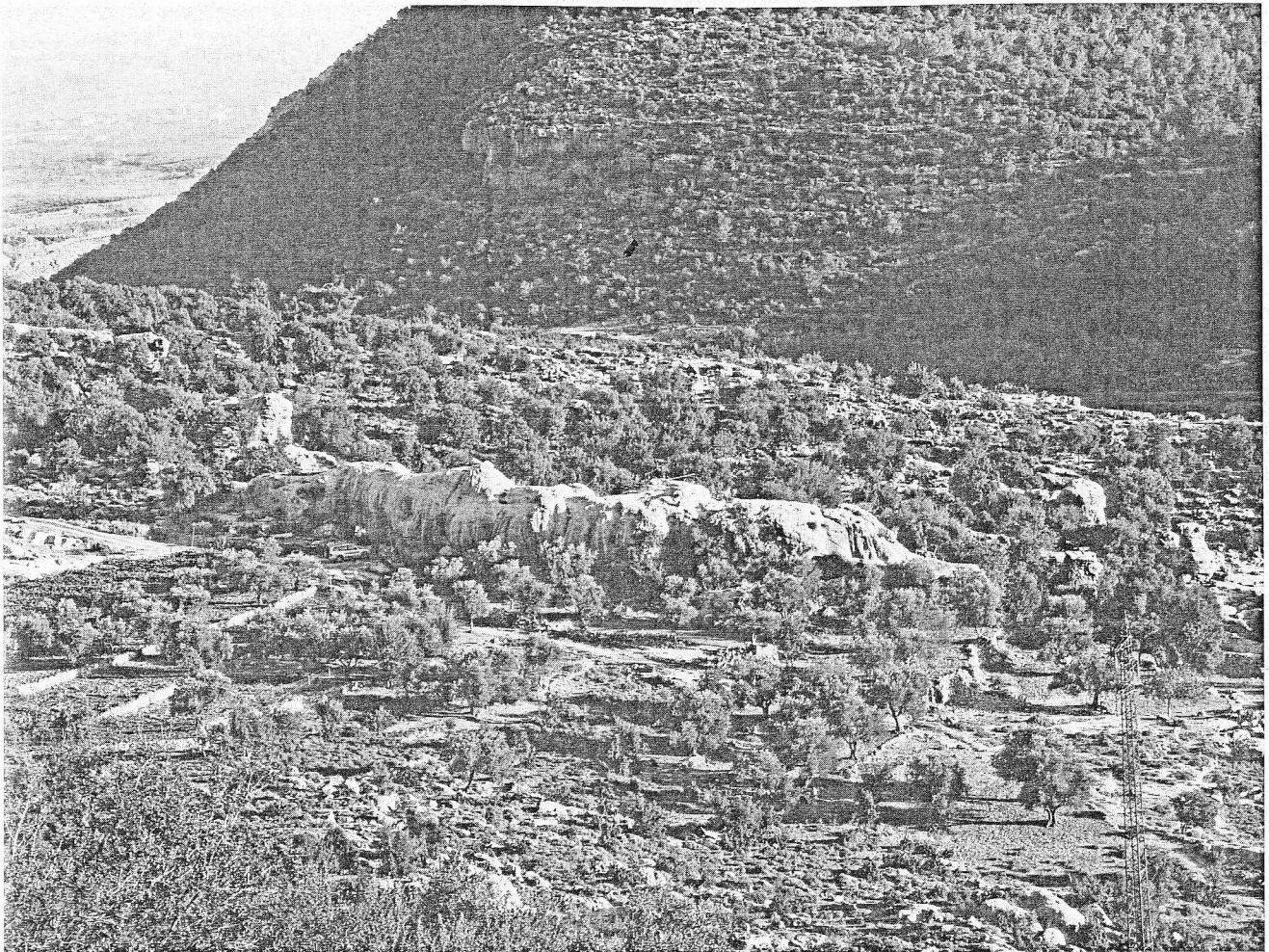
and excavated finds from Nachcharini Cave (Copeland 1991). No traces of the Natufian were found during recent reinvestigations at this cave (Pirie 2001; Garrard *et al.* 2003).

### 76.5 THE PRE-POTTERY NEOLITHIC

The Pre-Pottery Neolithic is very poorly known in Lebanon relative to the Pottery Neolithic, and, so far, no definite traces have been found of the Early or Middle Pre-Pottery Neolithic B (Haïdar-Boustani 2013). The Pre-Pottery Neolithic A has been identified in surface collections from the multi-period open-air site of Borj Barajne in the Sands south of Beirut and at Tell aux Haches in the same area. At both sites, the Pre-Pottery Neolithic A is characterized by el-Khiam points (Cauvin 1968; Fleisch 1970; Kukan 1978; Copeland 1991). This period is best known from Nachcharini, a small cave within a craggy chain of dolines, high in the Anti-Lebanon at 2,120 m (Fig. 76.1, 76.2). It was excavated by Schroeder in 1972 and 1974 (Kukan 1978; Copeland 1991), and reinvestigated in 2001 (Pirie 2001; Garrard *et al.* 2003). The reinvestigation involved cleaning the old sections and sieving the contents of a large looter's pit cut through the original trenches. There were hints of Natufian and Pre-Pottery Neolithic B from the original excavations, but the densest occupation was Pre-Pottery Neolithic A. It was characterized by Hagdud truncations (bi-truncations on bladelets) and

by el-Khiam and Salibiya points. The industry was bladelet dominated and appeared specialized relative to those from contemporary village sites in the southern Levant. Given the high elevation of the site, it is likely to have been used seasonally by hunting groups. Faunal remains from the original excavations of Schroeder have been studied by S. Rhodes (pers. comm.) and include *Ovis orientalis*, *Capra aegagrus*, *Cervus elaphus*, *Dama mesopotamica*, and *Gazella* sp.

The Late Pre-Pottery Neolithic B is known from a small number of localities in western Lebanon and in the Bekaa. On the coastal side of the mountains, this includes surface collections from Tell aux Scies in the Sands south of Beirut and Dik el Mehdi II in the foothills, 12 km northeast of Beirut (Cauvin 1968; Fleisch 1970). It is also known from Moghr el-Ahwal in the Qadisha Valley. In the Bekaa, Late Pre-Pottery Neolithic B has been found in the basal levels of Tell Labwe South (Kirkbride 1969), in small-scale excavations at Saaidé I on the western side of the Bekaa (Hours 1969), and in the basal levels of a deep trench in the Great Courtyard of Jupiter's Sanctuary at the Roman site of Baalbek (Rokitta-Krumnow 2011). At Tell Labwe South, it was characterized by Byblos and Amuq points, long denticulated sickle blades and the use of naviform bipolar blade core technology as well as obsidian. Recently, the site has been reinvestigated by Haïdar-Boustani, Ibáñez and colleagues who identified Late Pre-Pottery Neolithic B at the base of the mound (Haïdar-Boustani 2013; Khalidi *et al.*



**Figure 76.3** View north over Timsah Rock at Moghr el-Ahwal. (A black and white version of this figure will appear in some formats. For the colour version, please refer to the plate section.)

2013). No animal or plant remains have been reported from these Late Pre-Pottery Neolithic B localities, so it is uncertain whether domesticates were present.

#### 76.6 EXCAVATIONS AT MOGHR EL-AHWAL IN THE QADISHA VALLEY

The scarcity of information relating to late Palaeolithic and Neolithic settlement from the coastal mountains of Lebanon as well as further north in western Syria and the Hatay province of Turkey resulted in the initiation of a survey and excavation project in the Qadisha Valley of northwest Lebanon between 2003 and 2008. The valley drains the highest sector of Mount Lebanon to the southeast of Tripoli, and its vegetation zones were described in Section 76.1. Approximately 20 Palaeolithic and Neolithic sites were identified, and excavations focused on two adjacent caves at Moghr el-Ahwal, ~620 m asl, overlooking the Qadisha ravine (Fig. 76.1; Garrard & Yazbeck 2004, 2008, 2013).

The south-facing caves are contained in a karstic rock formation known locally as Timsah (Crocodile) Rock (Fig. 76.3) and whilst the smaller cave/shelter (Cave 2) is 3–5 m deep and 11 m wide, the larger cave (Cave 3) is 30 m deep by 5–8 m wide. The radiocarbon ages from Cave 2 indicate Geometric Kebaran, Natufian, Late Pre-Pottery Neolithic B, and Late Neolithic; Cave 3 ages indicate Kebaran and Geometric Kebaran to Natufian (Garrard & Yazbeck 2008, 2013). In both cases, the Geometric Kebaran formed the densest occupations, characterized by microlithic trapezes and rectangles in association with many end-scrapers and retouched pieces on blades, alongside a smaller number of burins, notches, and denticulates. The Natufian contained a small number of lunates with abrupt retouch. In the two caves, a portion of a bone sickle haft and a uniserial bone harpoon were found, closely paralleling examples from the Natufian at Kebara Cave (Garrard & Yazbeck 2013; Meignen *et al.*, Chapter 27 of this volume). At Cave 3, a stone-lined pit with a plaster base was found stratified within Natufian levels.

Cave 2 has several human burials. At least one of these was Geometric Kebaran and comprised the articulated lower legs and one foot of an adult with two small polished pebbles in association.

Several of the other burials were Late Pre-Pottery Neolithic B (based on direct dating of the bones) and comprised the disarticulated remains of at least two adults, a juvenile, and an infant. Apart from two small fragments, no cranial remains were found in association, suggesting that the skulls may have been separated before final burial.

The fauna from the Epipalaeolithic levels at the caves (Y Edwards, pers. comm.) is dominated by *Capra aegagrus*, but includes *Bos primigenius*, *Cervus elaphus*, *Dama mesopotamica*, *Capreolus capreolus*, *Sus scrofa*, and *Lepus capensis*, plus a range of rodents, carnivores, birds and *Testudo*. No faunal remains were found that could be definitely attributed to the Neolithic.

## 76.7 DISCUSSION

Both the Middle and Late Epipalaeolithic and the Pre-Pottery Neolithic are poorly known from Lebanon relative to other regions of the Levant. The recent excavations at Moghr el-Ahwal in the Qadisha Valley have provided new data on these periods, but many uncertainties remain about the overall distribution of population and the economic status of the Pre-Pottery Neolithic B communities.

On the coastal side of Mount Lebanon, detailed survey has been inhibited by the rugged terrain and extensive surviving forest, and with the exception of the Sands south of the Beirut promontory and the Akkar Plain in the north, the coastal plain is narrow, as it has been at periods of lower sea level. It is quite likely that the Epipalaeolithic communities were small and widely dispersed, and with the extent of forest in the early Holocene (Gasse *et al.* 2011; Chapter 19 of this volume), it is unlikely that the area would have been attractive to early farmers.

Within the Bekaa, extensive survey of the tells has only yielded a few surface traces of Pre-Pottery Neolithic B, whilst earlier sites may be hidden under deep alluvium. The Late Pre-Pottery Neolithic B in the deep sounding at Baalbek raises the possibility that Pre-Pottery Neolithic B may be found at the base of other major sites (Haïdar-Boustani 2013). So far no plant or animal remains have been reported from any of the Pre-Pottery Neolithic B excavations in Lebanon, and it is uncertain if domestication began early or later in this region. Wasse (2001) speculated that wild goat populations would have been widespread in Lebanon in the terminal Pleistocene and early Holocene, and that it could have been one of the core areas for their domestication in the Levant. However, so far there is no supporting evidence. Cauvin and Cauvin (1993) and Cauvin (1994) have suggested that Lebanon may have been a secondary centre of neolithization.

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