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Cultural adaptations in Dakhleh Oasis, Egypt, in the Early to Mid-Holocene

This paper is a review of the cultural sequence for Early to Mid-Holocene Dakhleh Oasis in light of new palaeoenvironmental evidence, and a dozen new radiocarbon dates for the period, making a total of twenty. Three late prehistoric cultural units, distinguishable by their artifact inventories and site locations, have been identified to date in Dakhleh Oasis. The earliest, dating to the ninth millennium, is called the Masara unit, while two later Neolithic units have been labelled the Sheikh Muftah and the Bashendi respectively. This paper reviews these late prehistoric units, outlining their distinguishing artifact inventories and site locations, and discussing palaeoenvironmental data and dating evidence for each unit.

The earliest, Masara unit, consists of two variants, A and B, differing on the basis of chipped stone raw material and tool assemblages, as well as site location. Masara Variant A is predominantly a blade and bladelet industry, made mostly on good quality fresh chert nodules. In the debitage, blades outnumber flakes, while the most common core type has a single platform, usually unfacetted. The toolkit (Table 1) includes notches, denticulates, and piercers, all on blades or bladelets, stemmed arrowheads, and only rare burins. In one collection, 70% of tools are microlithic, either backed bladelets or scalene triangles.

The second Masara variant, Variant B, shares with A such features as backed elements, the occasional notched or denticulated blade, and use of the microburin technique (Table 1), but it is in fact a very different industry, based largely on old worn chipped stone produced by an earlier culture, rather than on fresh chert nodules. It is not primarily a blade industry. Toolkits are dominated by classes fashioned from the worn material – rough notches, denticulates and piercers, but especially burins (60 - 80% of tools in most collections), a class which in this industry grades into core scrapers and single-platform cores. The burins are produced, usually on the proximal ends of thick-sectioned Levallois flakes, in a sequence that also yields distinctive double-patinated spalls with retouch, and various resharpening spalls (McDonald, in press).

Table 1

Collections from Masara B (sites 30/420-D1-1 and 30/420-C5-1) and Masara A (site 31/420-H10-1). Distribution of retouched tool types.

Specimens \ Sites	30/420-D1-1				30/420-C5-1				31/420-H10-1			
	Coll. 2		Coll. 1		Coll. 2		Coll. 4		Coll. 1		Coll. 2	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
4. Core-like end-scraper	7	10.8	9	19.1	1	5.0						
12. Single piercer	2	3.1										
17. Dihedral burin	29	44.6	23	48.9	13	65.0						
19. Burin on break or single-faced	6	9.2	4	8.5	1	5.0	1	9.1				
20 Multiple dihedral burin	10	15.4	3	6.4	2	10.0						
45. Pointed straight backed bladelet							2	18.1	7	18.9		
51. Pointed straight backed, rtch. base									1	2.7		
56. Curved backed bladelet									2	5.4		
64. Shouldered bladelet					1	5.0	2	18.1				
66. Fragment backed bladelet					1	5.0			8	21.6	10	83.3
67. Obtuse ended backed bladelet									1	2.7		
74. Notched flake	2	3.1	2	4.3	1	5.0						
75. Denticulated flake	2	3.1	1	2.1			1	9.1				
76. Notched blade	3	4.6	1	2.1					3	8.1		
77. Denticulated blade									1	2.7		
79. Notched or denticulated, cont. rtch.	1	1.5	1	2.1								
80. Truncated piece											1	8.3
82. Segment of semi-circle							3	27.3				
90. Scalene triangle									1	2.7		
95. Elongated scalene triangle with very short side									5	13.5		
101. Bladelet with microburin scar			1	2.1								
102. Microburin			1	2.1			1	9.1	1	2.7		
105. Retouched piece	3	4.6	1	2.1			1	9.1	6	16.2	1	8.3
112. Varia (arrowhead)									1	2.7		
Total	65	100.0	47	99.9	20	100.0	11	99.9	37	99.9	12	99.9

All categories numbered according to type list of J. Tixier (1963).

Masara sites of both variants, all surface sites, are relatively impoverished in artifact classes other than chipped stone, and in economic information. There are ground stone items including a few grinding slab fragments and hand-stones, as well as hammerstones, pounders, and a mortar made in tough quartzite. A few potsherds, both shale- and sand-tempered, occur on sites of both variants. Ostrich eggshell scatters are relatively rare, but buried eggshell water containers were found on one site, and a single eggshell bead on another. Apart from ostrich eggshell, virtually no faunal remains have been recovered from Masara sites.

The two Masara variants differ strikingly in site distribution (Fig. 1). Masara B sites, four of them so far, are confined to one small locality within Dakhleh, a portion of the sandstone ridge SW of the modern village of Ezbet Sheikh Muftah in east central Dakhleh. These sites occupy shallow basins within the sandstone cuesta, some of which they share with Masara A sites. Sites of the latter unit are distributed more widely, however, occurring also on the periphery

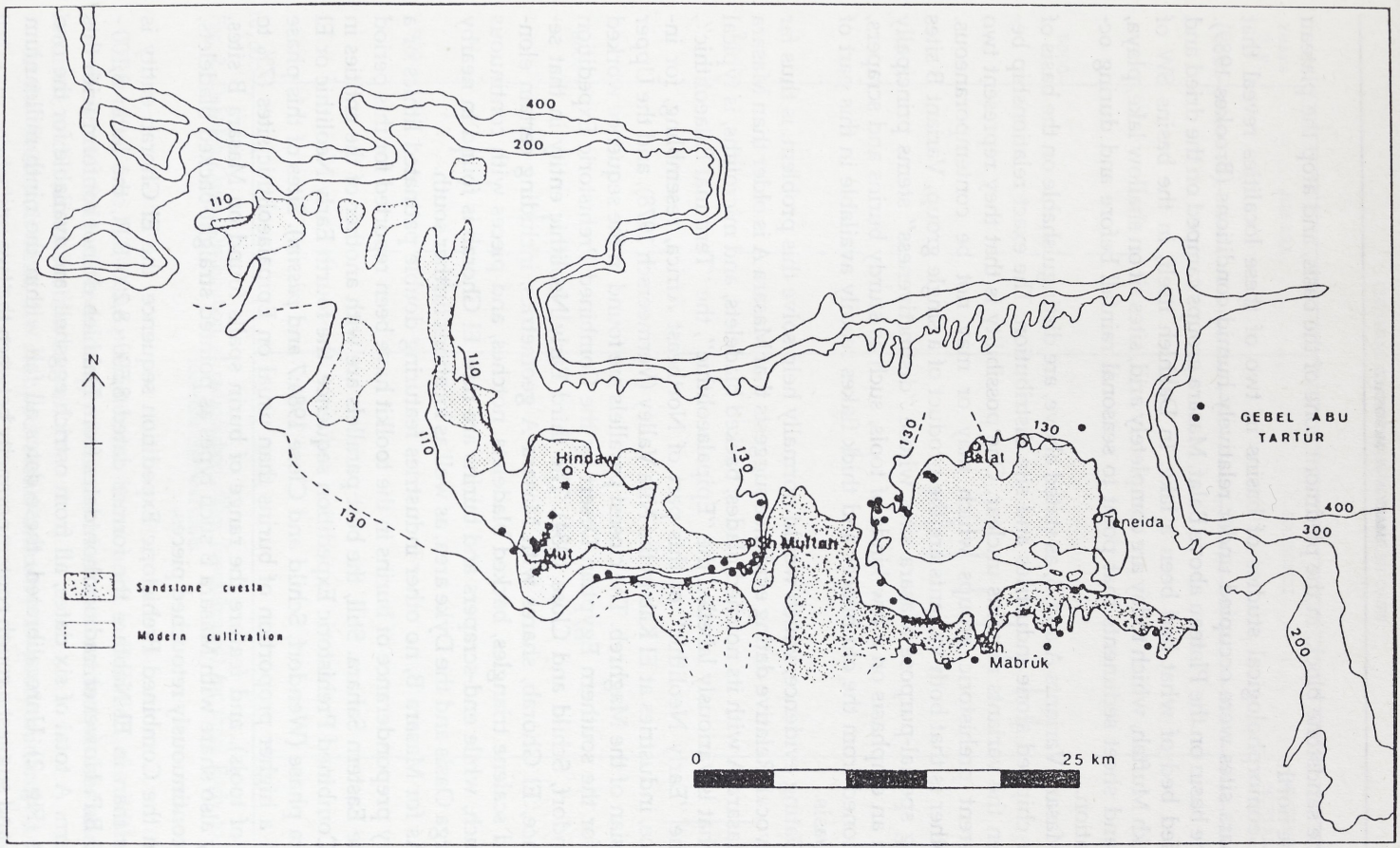

Fig. 1. Dakhleh Oasis. Distribution of Masara sites.

of the sandstone block, in the piedmont zone of the oasis, and atop the plateau to the north.

Geomorphological studies of basins in two of these localities reveal that Masara sites were occupied under relatively humid conditions (Brookes 1989). In the basin on the Plateau above Balat, Masara groups camped on the dried and eroded bed of what had been a lake. In Dakhleh itself, in the basins SW of Sheikh Muftah, which today are completely arid, sites sit on shallow lake, playa, or sand sheet sediments that point to seasonal rainfall before and during occupation.

Masara Variants A and B, as stated above, are distinguishable on the basis of their chipped stone industries and site distribution. The exact relationship between the variants remains unclear. One possibility is that they represent two different prehistoric groups which may or may not be contemporaneous. Another is that both variants are the product of a single group, Variant B sites being special-purpose Masara sites whose "distinctiveness" stems principally from an emphasis on a few kinds of tools, such as sturdy burins and scrapers, fashioned from the old bifaces and thick flakes readily available in this part of the oasis.

Dating evidence, which would normally help solve this problem, is thus far equivocal. Relative dating evidence suggests that Masara A is older than Masara B. Masara A with its notched blades, backed bladelets, and microliths, is typical of what is variously labelled the "Epipalaeolithic", the "Terminal Palaeolithic", or the "Early Neolithic" of this part of Northeast Africa, resembling, for instance, industries at El Kab in the Nile Valley (Vermeersch 1978), and the Upper Capsian of the Maghreb. The closest parallels are found in the sequence worked out for the southern Egyptian Desert by the Combined Prehistoric Expedition (Wendorf, Schild and Close 1984). The third Early Neolithic entity in that sequence, El Ghorab, shares with Masara A geometrics, including certain elongated scalene triangles, backed bladelets, notches, and pieces with continuous retouch, while end-scrapers and burins are rare. El Ghorab is found in nearby Kharga Oasis and the Dyke area, as well as locations further south.

As for Masara B, no other industries featuring double patinated lithics or a heavy preponderance of burins in the toolkit have been reported for this period in the Eastern Sahara. Still, the best parallels are with another of the entities in the Combined Prehistoric Expedition sequence, the fourth Early Neolithic or El Nabta phase (Wendorf, Schild and Close 1984:7 and *passim*). Sites of this phase yield a higher proportion of burins than usual on Epipalaeolithic sites (7% to 30% of tools), and feature the range of burin spalls found on Masara B sites. They also share with Masara B such types as pointed straight-backed bladelets, and continuously retouched pieces.

In the Combined Prehistoric Expedition sequence, the El Ghorab entity is older than in El Nabta – the former dated 8,500 - 8,200 B.P., the latter 8,100 - 7,900 B.P. However, radiocarbon dates from Dakhleh do not conform with this pattern. A total of six dates, all from ostrich eggshell, are available for the two units (Fig. 2). Unrecalibrated, these dates all fall within the ninth millennium B.P., and suggest a rough contemporaneity between the two units.

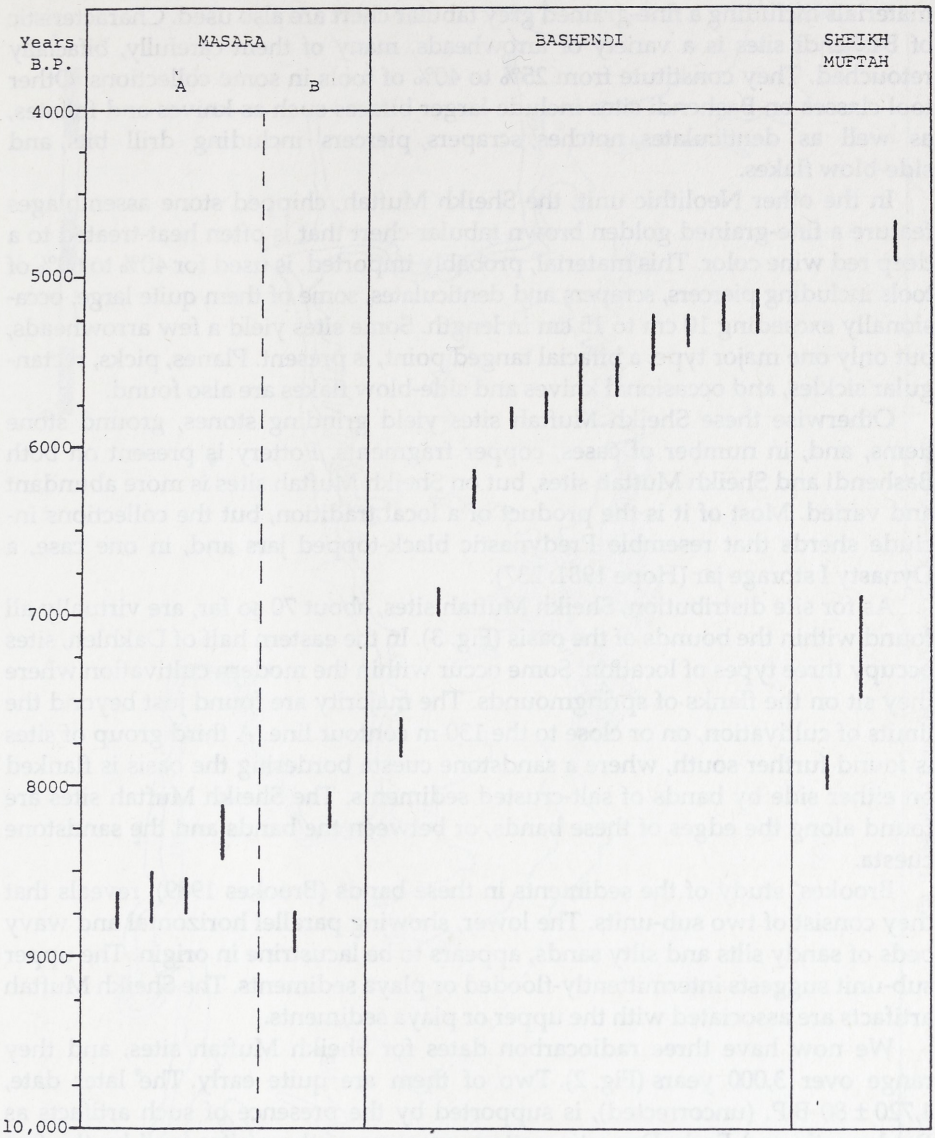

Fig. 2. Dakhleh Oasis. Distribution of radiocarbon dates (uncalibrated) for three Early to Mid-Holocene cultural units.

The other two Holocene prehistoric cultural units in Dakhleh, the Bashendi and Sheikh Muftah, differ strikingly from the Masara in artifact classes and site location, and from each other as well.

In the Bashendi unit, the chipped stone industry is predominantly a flake industry made on small nodules of chert and quartzite. A number of other

materials including a fine-grained grey tabular chert are also used. Characteristic of Bashendi sites is a variety of arrowheads, many of them carefully, bifacially retouched. They constitute from 25% to 40% of tools in some collections. Other tool classes on Bashendi sites include larger bifaces such as knives and foliates, as well as denticulates, notches, scrapers, piercers including drill bits, and side-blow flakes.

In the other Neolithic unit, the Sheikh Muftah, chipped stone assemblages feature a fine-grained golden brown tabular chert that is often heat-treated to a deep red wine color. This material, probably imported, is used for 40% to 60% of tools including piercers, scrapers and denticulates, some of them quite large, occasionally exceeding 10 cm to 15 cm in length. Some sites yield a few arrowheads, but only one major type, a bifacial tanged point, is present. Planes, picks, rectangular sickles, and occasional knives and side-blow flakes are also found.

Otherwise these Sheikh Muftah sites yield grinding stones, ground stone items, and, in number of cases, copper fragments. Pottery is present on both Bashendi and Sheikh Muftah sites, but on Sheikh Muftah sites is more abundant and varied. Most of it is the product of a local tradition, but the collections include sherds that resemble Predynastic black-topped jars and, in one case, a Dynasty I storage jar (Hope 1981: 237).

As for site distribution, Sheikh Muftah sites, about 70 so far, are virtually all found within the bounds of the oasis (Fig. 3). In the eastern half of Dakhleh, sites occupy three types of location. Some occur within the modern cultivation where they sit on the flanks of springmounds. The majority are found just beyond the limits of cultivation, on or close to the 130 m contour line. A third group of sites is found further south, where a sandstone cuesta bordering the oasis is flanked on either side by bands of salt-crusted sediments. The Sheikh Muftah sites are found along the edges of these bands, or between the bands and the sandstone cuesta.

Brookes' study of the sediments in these bands (Brookes 1989), reveals that they consist of two sub-units. The lower, showing parallel horizontal and wavy beds of sandy silts and silty sands, appears to be lacustrine in origin. The upper sub-unit suggests intermittently-flooded or playa sediments. The Sheikh Muftah artifacts are associated with the upper or playa sediments.

We now have three radiocarbon dates for Sheikh Muftah sites, and they range over 3,000 years (Fig. 2). Two of them are quite early. The later date, 4,720 ± 80 B.P. (uncorrected), is supported by the presence of such artifacts as Predynastic and Early Dynastic pottery on some of these sites, and by the fact that Sheikh Muftah material occurs together with Old Kingdom artifacts of the Fifth or Sixth Dynasty, in some cases in stratified contexts.

To return to the Bashendi unit, site distribution is quite different from that of Sheikh Muftah (Fig. 4). Sites occur within the oasis, both in the vicinity of the modern cultivation, or well beyond it. Unlike the Sheikh Muftah pattern, though, many sites occur beyond the borders of the oasis strictly speaking – at various locations on the Northern Plateau, and in the desert well to the south of Dakhleh.

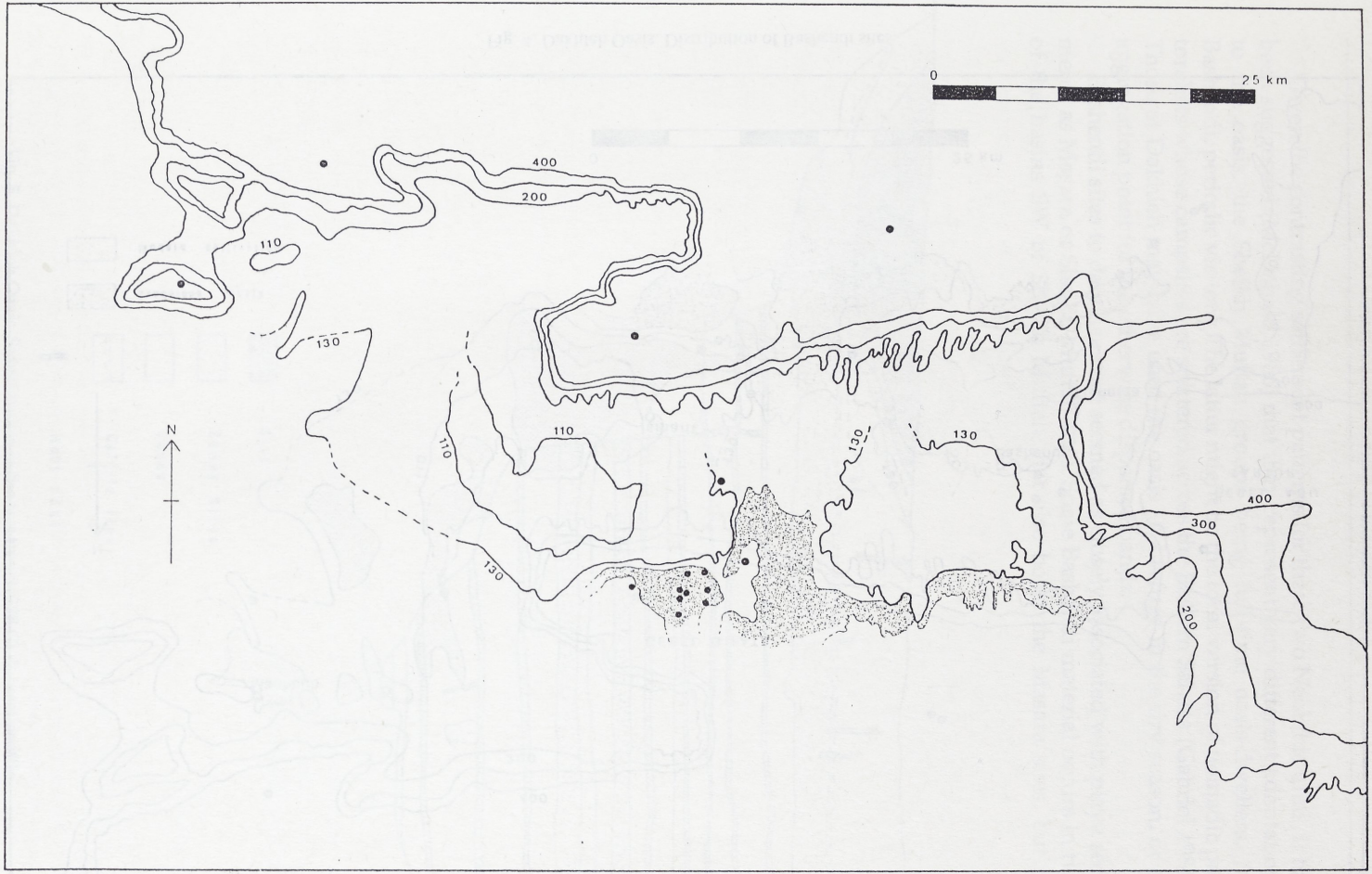

Fig. 3. Dakhleh Oasis. Distribution of Sheikh Muftah sites.

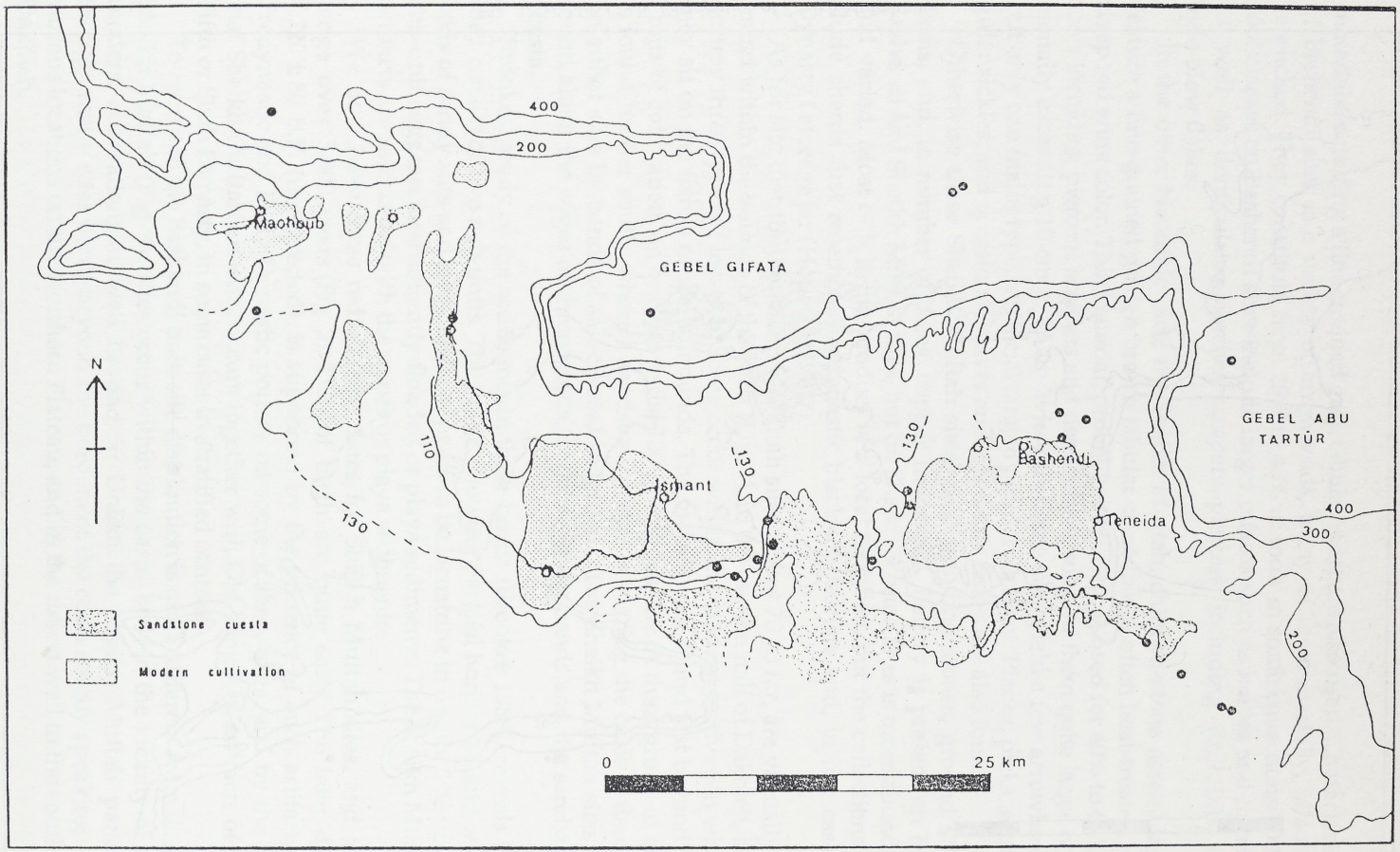

Fig. 4. Dakhleh Oasis. Distribution of Bashendi sites.

Given the contrasting settlement patterns for these two Neolithic units, it has been suggested (McDonald 1986) that they represent very different adaptations to the oasis, the Sheikh Muftah groups being full-time oasis-dwellers, the Bashendi, periodic visitors. The latter might be the local version of nomadic pastoralists whose campsites are scattered across the Eastern Sahara (Gabriel 1984). Those at Dakhleh may have used the oasis as a refuge in the dry season, or an aggregation point for the otherwise dispersed bands.

Bashendi sites to date have not seemed as closely associated with playa sediments as Masara or Sheikh Muftah sites. Some Bashendi material occurs in two of the basins SW of Sheikh Muftah that also boast the Masara sites, but no

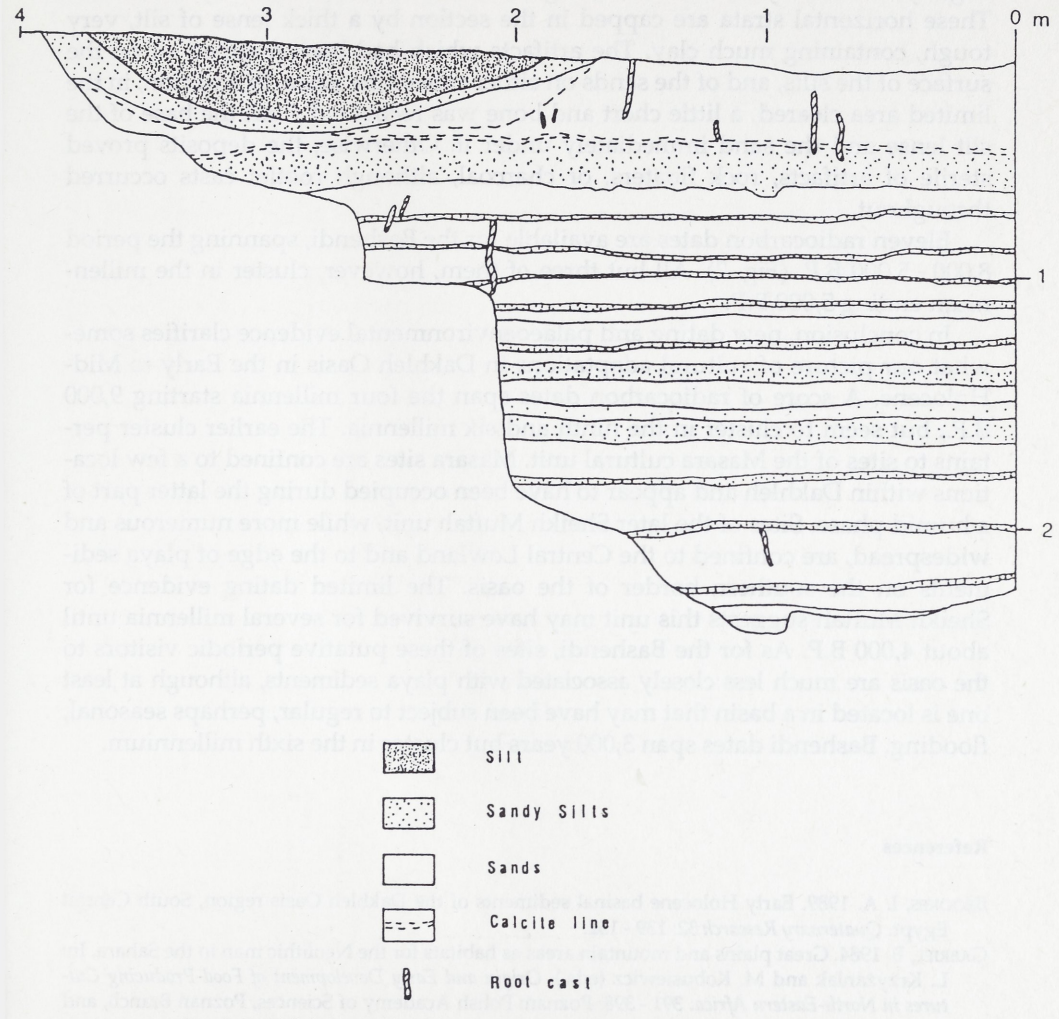

Fig. 5. Dakhleh Oasis. Stratification in the test trench 228 Cl. 1, west profile.

Bashendi sites have been found on the borders of the crusted playa sediments with the Sheikh Muftah material. For most Bashendi sites, associated Holocene sediments are gone, and the artifacts are scattered on bedrock, or on Pleistocene Laminated Sediments.

One site examined in 1988 did, however, yield some information on the Mid-Holocene environment. Site 30/450-A9-1, south of the oasis, is a large entity, *ca.* 2 × 4 km, consisting of scatters and heavier concentrations of Bashendi material sitting on the surface sands and silts.

A test trench excavated under one of these scatters after it was mapped, and dug to a depth of over 2 m without hitting bedrock, revealed a total of 30 strata (Fig. 5). From the bottom these consist of thin layers of sandy silts, separated by slightly thicker layers of sand, the grains of which are relatively unfrosted. These horizontal strata are capped in the section by a thick lense of silt, very tough, containing much clay. The artifacts which had been mapped sit on the surface of the silts, and of the sands on either side of the lense. In addition, in the limited area cleared, a little chert and bone was recovered from the base of the silt lense and the sand immediately under it. Otherwise, the deposits proved sterile of artifacts, rock floaters, or charcoal, although rootlet casts occurred throughout.

Eleven radiocarbon dates are available for the Bashendi, spanning the period 8,000 - 5,000 B.P. (Fig. 2). All but three of them, however, cluster in the millennium ending 5,000 B.P.

In conclusion, new dating and palaeoenvironmental evidence clarifies somewhat our picture of cultural adaptations in Dakhleh Oasis in the Early to Mid-Holocene. A score of radiocarbon dates span the four millennia starting 9,000 B.P., but seem to cluster in the ninth and six millennia. The earlier cluster pertains to sites of the Masara cultural unit. Masara sites are confined to a few locations within Dakhleh and appear to have been occupied during the latter part of a humid phase. Sites of the later Sheikh Muftah unit, while more numerous and widespread, are confined to the Central Lowland and to the edge of playa sediments on the southern border of the oasis. The limited dating evidence for Sheikh Muftah suggests this unit may have survived for several millennia until about 4,000 B.P. As for the Bashendi, sites of these putative periodic visitors to the oasis are much less closely associated with playa sediments, although at least one is located in a basin that may have been subject to regular, perhaps seasonal, flooding. Bashendi dates span 3,000 years but cluster in the sixth millennium.

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