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■ **The Messum/Menongue Complex: Early Holocene stone tool assemblages in Namibia and Angola**

Jürgen Richter

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**Universität zu Köln**  
**Institut für Ur- und Frühgeschichte**  
Weyertal 125  
50923 Köln  
[www.ufg.uni-koeln.de](http://www.ufg.uni-koeln.de)

## The Messum/Menongue Complex: Early Holocene stone tool assemblages in Namibia and Angola

by Jürgen Richter, Köln

**Zusammenfassung:** Die – noch spärlichen – paläoklimatischen Daten aus der Zentralen Namib deuten trockene Bedingungen an der Wende vom Spätpleistozän zum Holozän und feuchtere Bedingungen während des Früh- bis Mittelholozäns an. In zwei stratifizierten Steinartefakt-Inventaren des Frühholozäns der Zentralnamib treten mikrolithische Geräte und bifaziell retuschierte Spitzen auf. Formenkundliche Vorläufer für diese lokalen frühesten mikrolithischen Inventare fehlen bislang völlig.

Ein Blick auf gleichzeitige Steinartefakt-Industrien im subsaharischen Afrika zeigt, daß im südlichen Teil des Kontinents wenigstens zwei unterschiedliche, mikrolithführende Inventarkomplexe bestanden haben: Der Nachikufan I/IIa-Komplex (mit Schwerpunkt in Sambia) und der Messum/Menongue-Komplex (mit Schwerpunkt in Namibia und Angola). Die namibischen Siedlungsplätze des Messum/Menongue-Komplex wurden spätestens im Mittelholozän aufgegeben. Lokale Wilton-Industrien treten hier im nördlichen Namibia nicht vor 8 500 B.P. auf. Siedlungsplätze des Later Stone Age in Süd- und Zentralnamibia wurden hingegen bis 6 000 B.P. kontinuierlich belegt. Von diesen Inventaren fehlen bislang jedoch formenkundliche Daten.

**Abstract:** Scarce palaeoclimatic data may indicate Late Pleistocene/Early Holocene dry conditions and Early/Mid-Holocene moister conditions in the Central Namib Desert. Geometric microliths and bifacial points were found to be associated in two local Early Holocene stone tool assemblages.

Typological antecedents are absent from Namibia. Other Late Pleistocene and Early Holocene industries from Africa south of the Sahara are compared and the existence of at least two Early Holocene microlithic techno-complexes in southern Africa (Nachikufan I/IIA-Complex and Messum/Menongue-Complex) is suggested.

The central Namibian shelters of the Messum/Menongue-Complex (Messum 1 and Austerlitz) were abandoned at latest in the Mid-Holocene. Local Wilton assemblages do not occur earlier than ca. 8 500 BP. Southern and central Namibian sites were continuously occupied until ca. 6 000 BP but lack typological data.

### Introduction: Climatic setting

Quoting 'Early Holocene' in the headline of the present paper, this is done in a general sense of world-wide climatic change supposed to have been taken place during the 11th millennium BP. – Direct evidence for the Pleistocene – Holocene boundary in Namibia is extremely scarce at the present stage of research (Table 1).

Investigations in the southern Central Namib Desert yielded climatic data from 'vleis' (fossil silt accumulations of ephemeral lakes; Butzer 1984, 50, 51). Silt sequences from Sossus Vlei, Tsondab and Kuiseb River valleys (Vogel & Visser 1981; Seely & Sandelowsky 1974) indicate increasing fluvial activity between 33 000 and 18 000 BP, and, less significant, between 14 400 and 12 600 BP. Early Holocene silts were deposited between 10 700 and 8 600 BP.

Comparisons with other Namibian palaeoclimatic data support the existence of an Early Holocene wet phase (between 12 000 and 9 000 BP; Heine 1979) although interpretations of the data are somewhat controversial (Rust et al. 1984). Pollen records argue for local dry conditions in the Central Namib Desert

Table 1. Early Holocene geological  $^{14}\text{C}$  samples from Namibia

Date BP	Lab.No.	Site	Reference
8 640 $\pm$ 70	Pta-1501	Tsondabvlei	Vogel & Visser 1981
8 705 $\pm$ 165	Hv-8385	Tweerivieren	Heine 1978
9 310 $\pm$ 90	Pta-3043	Etosha	Rust et al. 1984
9 460 $\pm$ 90	Pta-1503	Sossusvlei	Vogel & Visser 1981
9 600 $\pm$ 90	Pta-1579	Sossusvlei	Vogel & Visser 1981
9 800 $\pm$ 200	?	Kwihabe	Cooke & Verhagen 1977
9 960 $\pm$ 390	Hv-1098	Lüderitz	Heine 1982
10 000 $\pm$ 200	?	Kwihabe	Cooke & Verhagen 1977
10 000 $\pm$ 200	?	Tsondabvlei	Seely & Sandelowsky 1974
10 000 $\pm$ 90	Pta-3050	Etosha	Rust et al. 1984

since 18 000 BP (Van Zinderen Bakker 1984). In fact, increased fluvial discharge in the Namib Desert reflects higher inland precipitation rates rather than moister conditions in the desert itself.

Cave deposits in the Central Namib Desert, however, give some hints on local climatic oscillations during Early Holocene times. In Mirabib Hill Shelter an aeolic red sand underlies a dark grey layer of highly organic character dated to the 9th millennium BP (Sandelowsky 1977, 243). The transition to the 'central sandy layer' (7th/6th millennium BP; *op. cit.*, 243) is marked by some granite debris from the roof of the shelter (*op.cit.*, 241) due to intensive weathering. Sediments and microfaunal remains from Cha-ré and Hennops Cave east of Walfish Bay repeat the Mirabib chronology (Sandelowsky 1983, 609).

Messum 1, a rock shelter east of Cape Cross (Wendt 1972, 14) produced a comparable sequence but less complete than Mirabib: A basal red sand under a granite debris horizon is postdated by a grey ashy layer of the 3rd millennium BP (Richter 1984, Fig. 4). At Austerlitz Shelter near Khorixas in Damaraland (Wendt 1972, 13) a big amount of sandstone rock debris from the roof of the shelter was deposited during and after the 10th millennium BP (see Table 2). Here an upper ashy layer did not contain any sandstone debris.

Of course, trends presently visible in the cave deposit record need confirmation from further research in the Central Namib Desert. Nevertheless, an Early/Mid-Holocene wet phase framed by radiocarbon dates between ca. 9 500 and 6 500 BP appears to gain some probability. In Mirabib and Cha-ré the same amelioration may cover a time span between ca. 8 500 and 6 500 BP and may have caused heavy weathering at an evolved stage as indicated by a widespread debris facies (*cf.* Messum, Austerlitz). Underlying aeolic sand layers owe their existence to drier conditions which must have prevailed in a period before.

Table 2. Early Holocene archaeological  $^{14}\text{C}$  samples from Namibia

Date BP	Lab.No.	Site	Reference
8 200 $\pm$ 90	Pta-1536	Mirabib	Sandelowsky 1977
8 230 $\pm$ 70	KN-2143	Namtib	Freundlich et al. 1980
8 410 $\pm$ 80	Pta-1368	Mirabib	Sandelowsky 1977
8 970 $\pm$ 90	Pta-3527	Rosh Pinah	Sievers 1984
9 420 $\pm$ 80	Pta-3705	Austerlitz	Richter 1991
9 430 $\pm$ 90	KN-I-610	Apollo 11	Freundlich et al. 1980
9 750 $\pm$ 90	Pta-3580	Rosh Pinah	Sievers 1984
10 420 $\pm$ 80	KN-I-611	Apollo 11	Freundlich et al. 1980

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The basal red sand layers of all Mirabib, Messum 1 and Austerlitz shelters yielded stone tool assemblages connected to the Late Pleistocene or Early Holocene by stratigraphic position and 14C dates discussed above (Richter 1990; 1991, 249).

At Mirabib Hill Shelter the basal red sand contained only 3 very crude white quartz scrapers amongst 35 unretouched stone artefacts (Sandelowsky 1977, 256). The covering dark grey layer underwent the first 'Wilton' occupation about 8 500 BP providing a terminus ante quem for the basal red sand industry.

At Messum 1 the 'horizon e' industry (basal layer) is distinguished from the artefacts of the upper horizons by a yellowish patina (Richter 1984, 6; 1990, 315). 92 out of 2 484 artefacts were retouched. More than 30 % of the formal tools retain microlithic size (Fig. 1). Micro-triangles, micro-points and other backed microliths are associated with scrapers, notched pieces/borers, burins, backed points and a triangular bifacial point. The occasional occurrence of faceted platforms even on microlithic tools is worth mentioning.

The Austerlitz basal sandy layer ('complex e'; Richter 1991, 121–131) produced only 12 formal tools including 2 microlithic trapezes, a micro-point, a backed bladelet, 5 medium-sized tools and 3

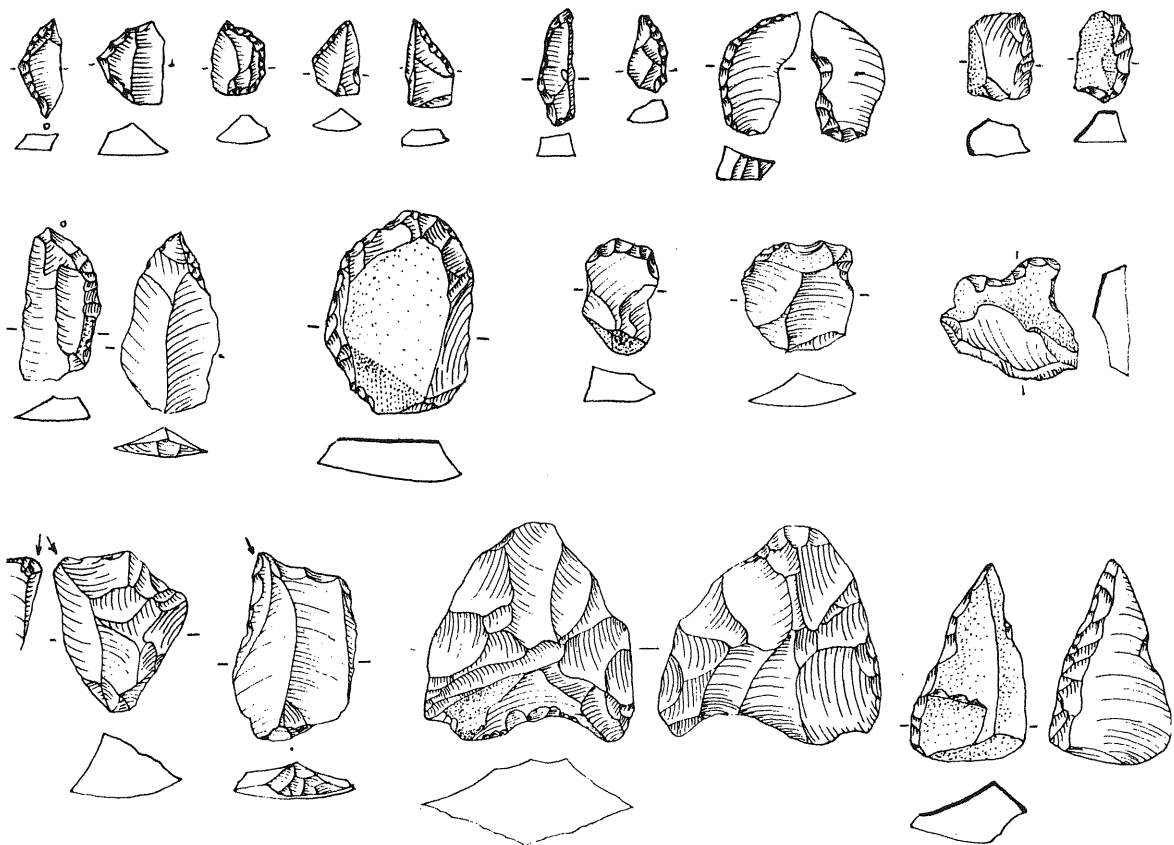


Fig. 1. Formal stone tools from an undated but stratified inventory at Messum 1 shelter/Namibia (scale as Fig. 2).

macrolithic sidescrapers. Among the medium-sized tools a large backed segment, a burin and a bifacial point demand particular interest (Fig. 2).

Although not very numerous, the Austerlitz 'complex e' inventory retains great importance because of the  $^{14}\text{C}$  date of  $9\,420 \pm 80$  BP (Pta-3705) and the obvious resemblance to the Messum 1 'horizon e' industry.

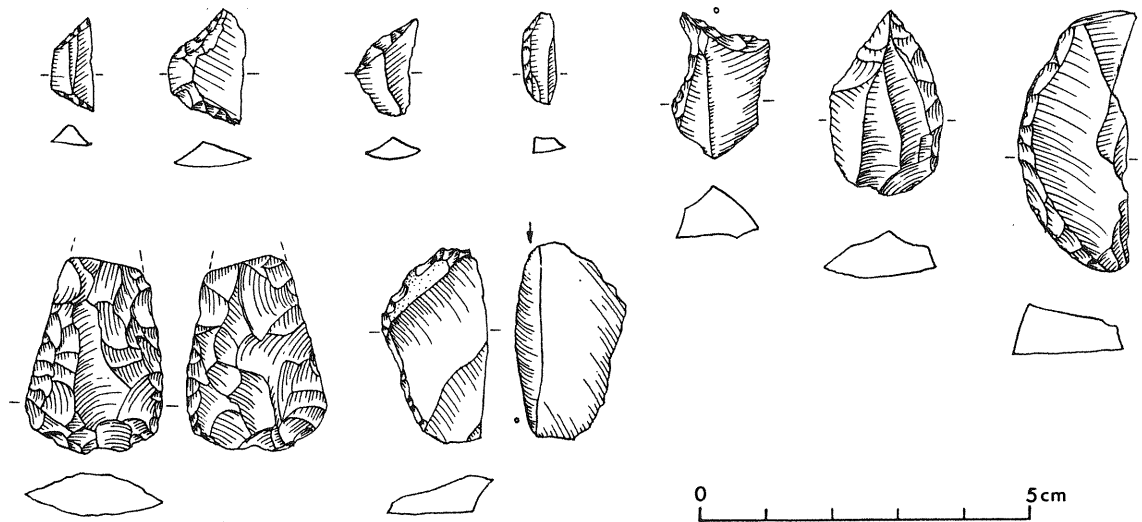


Fig. 2. Formal stone tools from a stratified Early Holocene assemblage at Austerlitz shelter/Namibia.

### The Namibian hinterland of the Namib Desert

Only two sites in the Namibian interior have produced assemblages from the time range under discussion. Both inventories come from the southern border of the country, one of them, Rosh Pinah, is situated on the edge of the southern Namib Desert.

The Apollo 11 Later Stone Age sequence ('unit C') ranges from the 10th to the 7th millennium BP, thus providing one of the earliest dates for predominantly microlithic industries in southern Africa (Wendt 1974, 19). An even earlier radiocarbon date  $10\,420 \pm 80$  BP (KN-I 611) may have been contaminated by the underlying Early Later Stone Age (non-microlithic) layer (op. cit.).

At the nearby Rosh Pinah Shelter, a brown earthy deposit with abundant ostrich eggshell and plant remains (Sievers 1984, 32) contained 232 artefacts. 4 utilized, 1 retouched and 2 medium-sized backed pieces form a toolkit too small to be diagnostic. A radiocarbon sample from this layer is dated to the 10th millennium BP.

The archaeological  $^{14}\text{C}$  dates from Namibia covering the time range under discussion (10 500 – 8 000 BP) are summarized in Table 2.

### Early Holocene industries: the Namibian evidence

The present state of Early Holocene research along the Namib Desert does not allow for a comprehensive model but it seems worthwhile to summarize some characteristics:

- 1) Industries of the 10th millennium BP are relatively rare.
- 2) Microlithic elements are present from the 10th millennium onwards.
- 3) Two sites in central Namibia yielded bifacial points associated with microlithic elements.
- 4) At 4 sites the Early Holocene industries were the first to be deposited or the oldest to be preserved.
- 5) Only one site yielded Early Holocene industries and previous (non-microlithic) industries (Apollo 11).
- 6) From the typological point of view no predecessors of the Messum/Austerlitz industries are known in Namibia.
- 7) The two northern Namibian sites were abandoned after the Early Holocene occupation.
- 8) The 3 southern Namibian sites were continuously occupied until the Mid-Holocene.

### The African framework: Origins of microlithic tradition

The typological character of the earliest microlithic industries in Africa and the chronological background need some further consideration. Recent excavations all over the African continent proved microlithic industries to have occurred considerably earlier than had been previously thought.

#### Southern Africa

Microlithic technology was present in Late Pleistocene south African assemblages between 40 000 and 12 000 BP (Deacon 1984, 228) but did not continue until Holocene times.

To the contrary, south African industries returned to macrolithic tradition from 12 000 BP onwards (Deacon 1984, 228) being contemporaneous with the microlithic Nachikufan I industry in Zambia for several thousand years (Fig. 4).

A comparison of locally earliest microlithic occurrences with locally latest macrolithic ('Oakhurst', 'Lockshoek', 'Pomongwan') assemblages throughout the subcontinent suggests regional replacement of the 'Standard Late Stone Age' inventories. The microlithic technology did not evolve out of regional tradition in south Africa but seems to have been adopted from the North. Being finally restricted to the southern Cape region in the 7th millennium BP the latest 'Oakhurst' inventories even coexisted with contemporaneous Wilton 'Standard Late Stone Age' inventories (Sampson 1974, 318).

#### Central and eastern Africa

Pleistocene microlithic industries have been reported particularly from central and eastern Africa (Matupi, ca. 40 000 BP: Van Noten 1977; Ishango, ca. 18 000 BP: Heinzelin 1957; Munyama, ca. 15 000 BP: Van Noten 1971; Kisese, ca. 14 500 BP: Van Noten 1982, 39; Nasera, ca. 18 000 BP: Mehlmann 1977; Lukenya Hill, ca. 18 000 BP: Gramly 1976).

All these industries have a diminution of tool size and a very low degree of standardization in common. Geometric forms usually lack or, at least, maintain a very small percentage among the single toolkits.

Nelson (unpublished, quoted after Masao 1979, 212) has put forward a distinction between unstandardized 'Basal Late Stone Age' industries and Holocene 'Standard Late Stone Age' industries in eastern Africa which could well be applied to central and southern African assemblages as well. 'Basal

LSA' industries can not be linked to their Holocene successors ('Standard LSA') by means of stratigraphic continuity. There is little evidence that 'Standard LSA' industries have developed out of the above mentioned 'Basal LSA' predecessors having disappeared several thousand years before the beginning of the Holocene.

#### The Zambian sequence

From Zambia Late Pleistocene microlithic occurrences are known to have probably persisted until the Early Holocene. Thus the Nachikufan I sequence provides the only evidence in Africa for a continuum between 'Basal LSA' industries and 'Standard LSA' industries.

A chronological gap between ca. 16 000 BP (Leopard's Hill) and ca. 11 000/10 000 BP (Leopard's Hill, Mwela Rocks; cf. Sampson 1974, 355) has partially been closed by the Kalemba data (period III, horizon K-N; Phillipson 1976).

The interface between Nachikufan I and IIA industries produced 14 C-dates to the 10th millennium BP (cf. Sampson 1974, 355).

Although so-called 'Magosian' (perhaps Umguzan related) assemblages precede the Nachikufan I at Nsalu and Leopard's Hill (cf. Sampson 1974, 359). Phillipson (1976, 201) emphasized the indigenous technical development of the Zambian 'mode 3' (MSA) antecedents as displayed by the Kalemba sequence.

#### Northern Angola and western Zaire

Recent Belgian investigations in western central Africa established another Late Pleistocene and Early Holocene sequence. The transition from Lupemban to Tshitolian industries 'is marked by the progressive liberation from the bifacial tradition towards the appearance of new forms' (Van Noten 1982, 53), particularly micro-tranchets and backed elements. A series of radiocarbon dates was obtained from the Kinshasa plain ranging from the 15th to the 8th millennium BP thus supporting the existence of a typological sequence. Still, the single stages of the development have not been securely dated in detail but certainly bifacially retouched implements were present during Late Pleistocene, Early and Mid-Holocene times.

#### Southern Angola

The Menongue River site, excavated by Franca (1960; Ervedosa 1978, 128), yielded fluvial sediments containing exclusively an industry then identified as 'Magosian'. Sampson (1974, 252) compared the Menongue inventory with Umguzan assemblages to the south. Segments, micro-segments, triangles, trapezes and micro-points were associated with backed points, notched pieces/borers and burins (Fig. 3). Again, bifacial points were present. There is no radiocarbon datation for this assemblage.

This rich site from the Angolan interior appears to show strong typological similarity to the Austerlitz and Messum 1 inventories although the proportions seem to be somewhat larger than those from the Namibian sites: All inventories have in common bifacial points of different form and size, burins, micro-segments, triangles and trapezes. Alternally retouched points occur in Menongue and Messum 1.

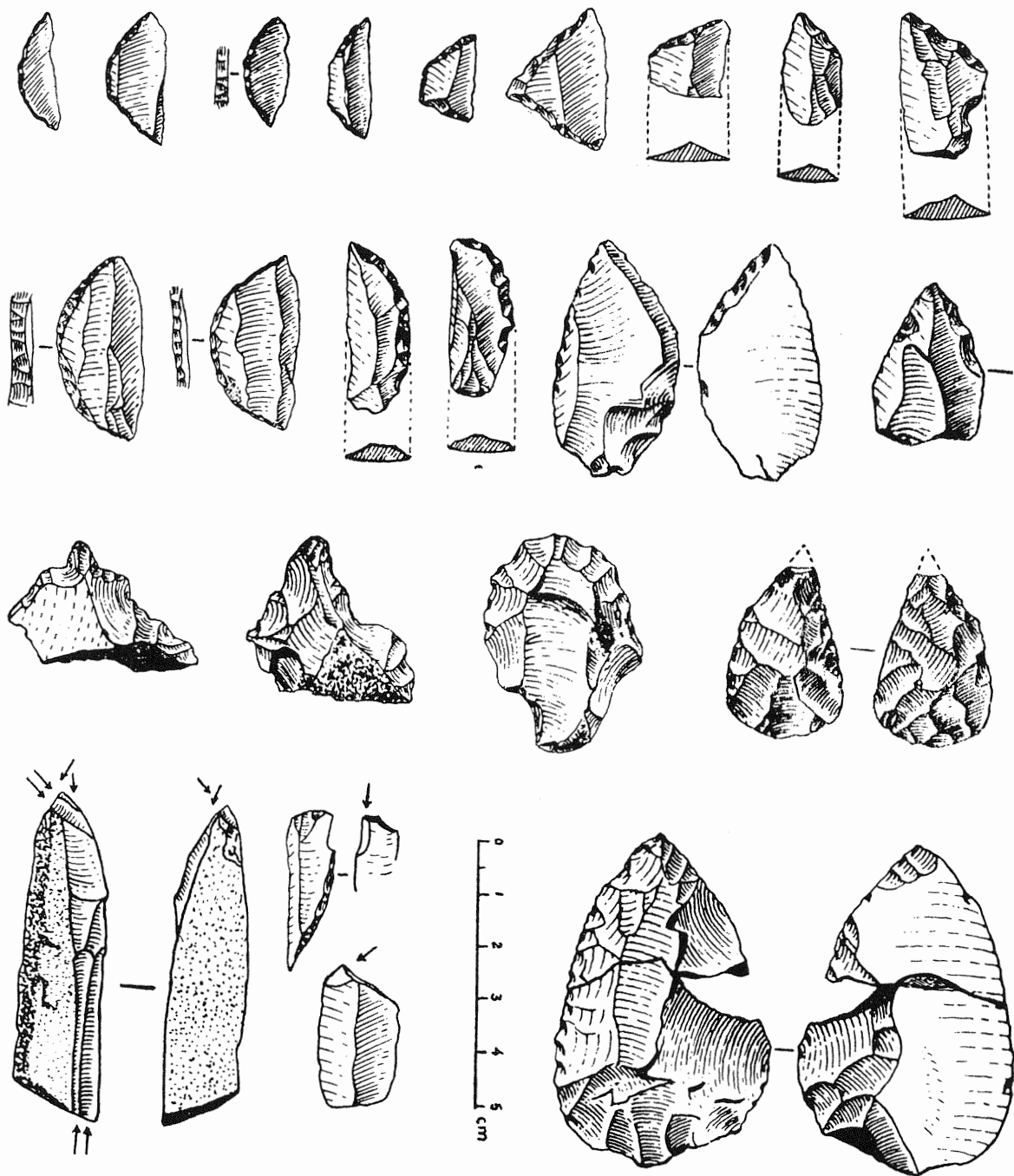


Fig. 3. Formal stone tools from an undated and unstratified inventory at the Menongue River Site in southern Angola (after Ervedosa 1980).



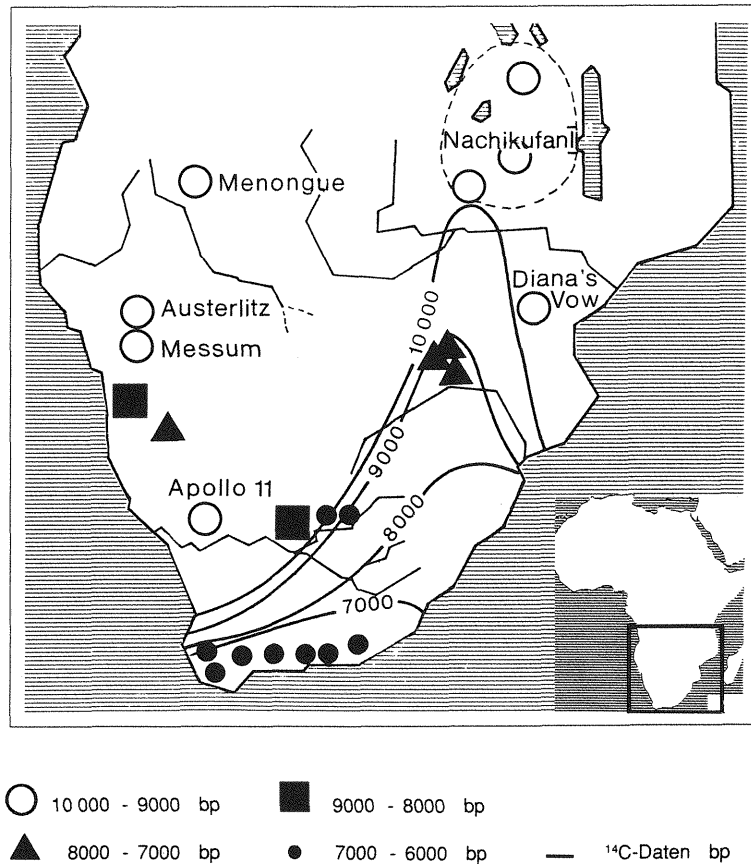


Fig. 4. Late Pleistocene and Early Holocene sites mentioned in the text. Symbols show locally earliest microlithic occurrences. Isochronic Lines show generalized distribution of locally latest occurrences of macrolithic Oakhurst-related assemblages (years BP). Compiled after Deacon 1984, Phillipson 1977, Freundlich et al. 1980.

#### Discussion: The origin of microlithic industries in Namibia

The habitus of the northern Namibian (Messum, Austerlitz) and the related southern Angolan assemblages (Menongue) appears to be a singular typological feature among Late Pleistocene and Early Holocene industries all over southern Africa. There are no relations to the contemporaneous macrolithic Oakhurst complex from the Cape and Transvaal but there is little resemblance to contemporaneous microlithic 'Basal LSA' or Nachikufan I/IIA industries as well.

Certain affinities to Late Pleistocene industries with backed elements and bifacial points (for example the Umguzan in southern Zambia) are contradicted by the chronological evidence from Namibia and by fully microlithic proportions in the Namibian toolkits. Nevertheless, bifacial tradition continued from Late Pleistocene until Mid-Holocene times in Angola (Lupembo-Tshitolian and Tshitolian) and could have had an impact on Early Holocene tool making tradition in Namibia and southern Angola.

Thus the existence of two Early Holocene microlithic traditions in the southern part of Africa is supposed, the Nachikufan I/IIA complex without bifacially retouched tools and a group of inventories in northern Namibia and southern Angola (Messum 1, Austerlitz and Menongue) with bifacially retouched tools. For the latter I propose the term 'Messum/Menongue Complex'.

Unfortunately, the southern Namibian Early Holocene assemblages cannot be taken into account due to the lack of typological data. Without any antecedents or successors in Namibia, the Early Holocene microlithic tradition may have existed only ephemerally in the Central Namib Desert. The small number of assemblages, small amounts of artefacts and relation to the desert ecotope suggest a high degree of mobility among the Early Holocene occupants of the Namib. Certainly they were not responsible for the later 'Standard LSA' development in the same region.

The hiatus between the basal Messum and Austerlitz assemblages (local Namibian Later Stone Age A; Richter 1991, 256) and the 'Standard LSA' or Wilton-related industries (local Namibian Later Stone Age B; *op. cit.*) in northern Namibia corresponds with a pattern observed among regional 14 C-dates by Vogel & Visser (1981). The Mid-Holocene gap in northern Namibian rock shelters may reflect preservation conditions or real demographic decrease or changing settlement behaviour towards (not yet excavated) open-air sites.

Early Holocene prehistory in the Central Namib Desert can presumably be better understood in terms of dynamic mobility and cultural contacts than in terms of gradual changing adaptation patterns and local tradition.

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