

## The Neolithic Period in the Central Region of the Emirate of Sharjah (UAE)

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The Central Region of the Emirate of Sharjah has become a focal point of Stone-Age research in Southern Arabia. Due to the 1995 discovery of BHS18 by the local Sharjah team and the successful cooperation with Tübingen University from 1996 to 2005 at this site the 5<sup>th</sup> millennium BC can be considered a well-known period of the Neolithic in this inland area of SE-Arabia. The late Neolithic phase will therefore not be in the centre of the present paper, which will concentrate on the evidence for human presence in the area during the earlier Holocene.

The rock-shelter of FAY-NE1 (=Faya North-East 1) was excavated because of its combination of favourable conditions for human dwelling with indications for continued accumulation of sediment in front of the sheltered area. A sediment-depth of some 5m under the present surface provided evidence for repeated human presence at FAY-NE1 during more than 130.000 years (ARMITAGE et al. 2011). However, the Holocene period generally provided less than 1m of sediment at FAY-NE1. Therefore the contribution of this site to our knowledge of the Neolithic period is limited. Non-the-less it produced excellent evidence for its beginnings. The stratigraphic sequence shown in Fig. 1 is a snap-shot reflecting the arrival of humans at this place during the Early Holocene after a long absence during the Upper Pleistocene.

In this part of the site the Palaeolithic layers are sealed by a layer of dune-sand. Two OSL-dates indicate its deposition some 35.000 years ago (Armitage et al. 2011). A stratigraphic discontinuity separates the sand from the layers above. While the sand is sterile, the layer above contained several arrow heads made of distally pointed blades with a short stem produced by steep retouch at the basal end (Figs. 1, 2, 4). They resemble Qatar-B-Points, but also remind of points described by Pullar (1974) from Bir Fasad in Oman. Therefore the name "Fasad-Points" was chosen for the blade-points from FAY-NE1 in earlier publications (H.-P. Uerpmann, D. Potts & M. Uerpmann 2009; H.-P. & M. Uerpmann 2009; M. Uerpmann 2011). As the term "Fasad-Point" was in the meantime also used for larger and more irregular points (Charpentier 1996 with further lit.) we now propose to use the name "Faya-Points" for the Early Neolithic blade-points from FAY-NE1.

Most important is the fact that two Faya-Points were found in proximity to marine shell-fragments which provided <sup>14</sup>C-dates. These dates were measured as 9583±66 bp (Hd-26089) and 9657±50 bp (Hd-27511). Calibrated against the marine09 curve, they correspond to ages between 8661 and 8317 calBC (2σ).<sup>1</sup> Given the stratigraphic situation (Fig. 1) it is obvious that these finds reflect the first arrival of humans at this site after its abandonment by Palaeolithic people some 25.000 years earlier when the last Pleniglacial period began. The finds of *Turbo*-shells are evidence for a coastal connection of the first Holocene occupants of the site. In the Inland Basin of the Sharjah Emirate Faya-Points were also found at a number of surface-sites – indicating a mobile way of life of the respective populations.

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<sup>1</sup> In spite of the recent paper by Zazzo et al. (2012) the problems of reservoir-correction of radiocarbon dates of marine shells from sites on the Arabian shores of the Indian Ocean are not solved. Empirically, shell dates calibrated against standard marine calibration-curves turn out older than corresponding charcoal dates calibrated against tree-ring curves. In earlier publications the present authors applied reservoir-corrections of 400 or 300±100 years when calibrating shell dates - resulting in younger calendar ages. The present paper will provide separate cumulative probability-graphs of terrestrial and marine <sup>14</sup>C-dates, the last ones both without and with an additional reservoir-correction of 300±100 years.

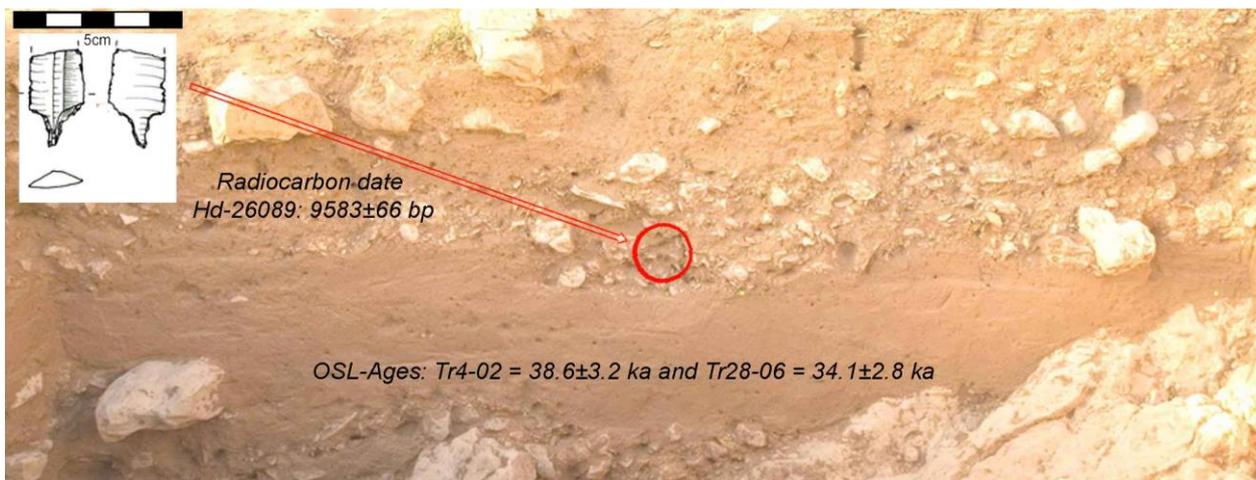


Fig. 1: Examples of Faya-points from Faya-NE01 (above) and stratigraphic transition from the late Pleistocene aeolian sand layer to the early Holocene gravel with approximate find-spot of the Faya-Point 11210 and one of the radiocarbon dated Turbo-shells

Many of the Faya-Points found at FAY-NE1 (Figs. 1, 2, and 4) are broken at the tip and most of these finds represent non-local raw materials. Apparently people came to the site in order to replace broken arrow-heads. Cores indicate the production of tipped blades, but none of the excavated specimens has a size big enough for the blades shown in Fig. 2, nor for extracting the long blanks necessary for making Faya-points. Obviously these cores only reflect the final stages of core reduction and not the whole range of blade technology applied at the site. This is a clear difference from sites farther northwest in Arabia and in the Levant. There naviform cores of high-quality raw-material were exploited by specialists, producing standardized blanks for distribution in Neolithic village communities (Quintero & Wilke 1995).

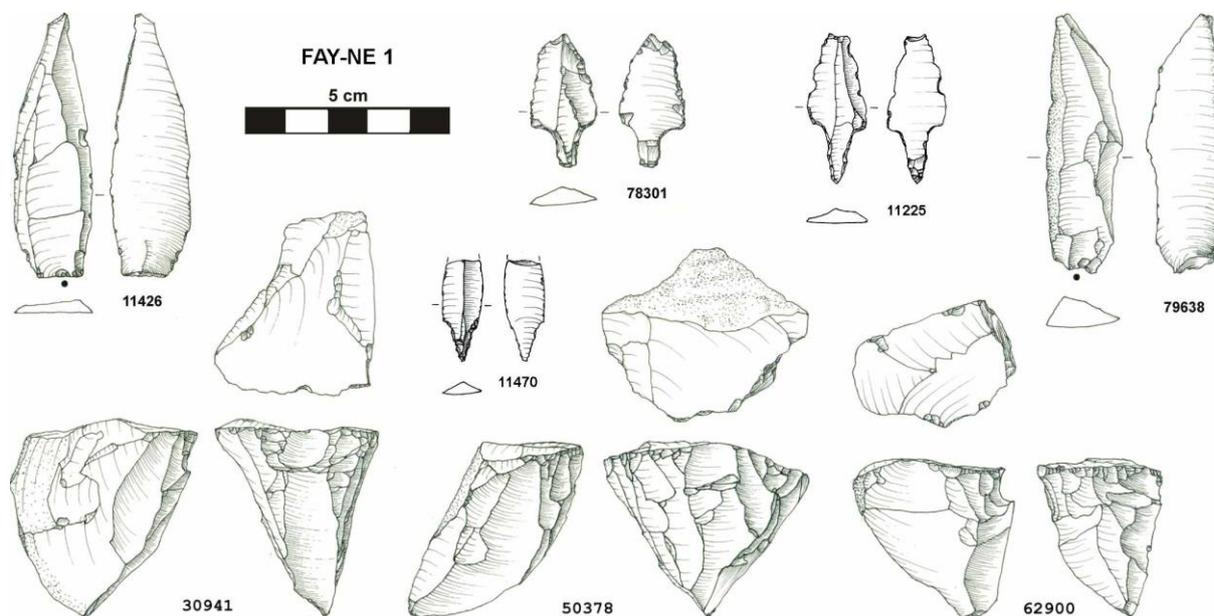


Fig.2: Broken Faya-points, tipped blades, and residual blade cores from FAY-NE 1

Unfortunately no animal or plant remains were found in the Early Neolithic context at FAY-NE1. Therefore nothing can be deduced with regard to the subsistence of the first Holocene dwellers. It remains an open problem whether the typological similarity of Faya-points, Qatar-B-

points, and Byblos-points – together with the corresponding radiocarbon dates – can be considered as evidence for an early expansion of Neolithic populations from the Fertile Crescent into the Arabian Peninsula, as postulated by Drechsler (2007) or Uerpmann/Potts/Uerpmann (2009). In any case the first Holocene dwellers at Jebel Faya did not develop locally. They arrived at the site with a flint technology which was completely different from that of phase A of the Palaeolithic found some 40cm deeper in the sediments of FAY-NE1 (Armitage et al. 2011).

Higher up the sedimentation at FAY-NE1 was not regular enough to provide much stratigraphic information with regard to the later Neolithic occupation. There is typological evidence for use of the site by people who produced trihedral rods and bifacially retouched objects. Some radiocarbon dates were obtained for the Late Neolithic period. They fall into the general range of dates for the so-called Arabian Bifacial Tradition (ABT) and correspond to the winged arrowheads found in late Neolithic contexts of the wider area (Nos. 11660 + 61614 in Fig. 4). In total the contribution of FAY-NE1 to our knowledge about the later Neolithic is limited and less conclusive than the evidence from the sites FAY-NE10, FAY-NE15 and BHS18.

Excavations of the Joint Tübingen-Sharjah Project FAY-NE10 – a small cave c. 500m north of FAY-NE1 – in 2006, 2007 and 2010 reached archaeologically sterile sediments at a depth of about 1m below the Iron- and Bronze-Age levels excavated by the local team. Four stratigraphic units could be distinguished, which in the following will be discussed from bottom to top.

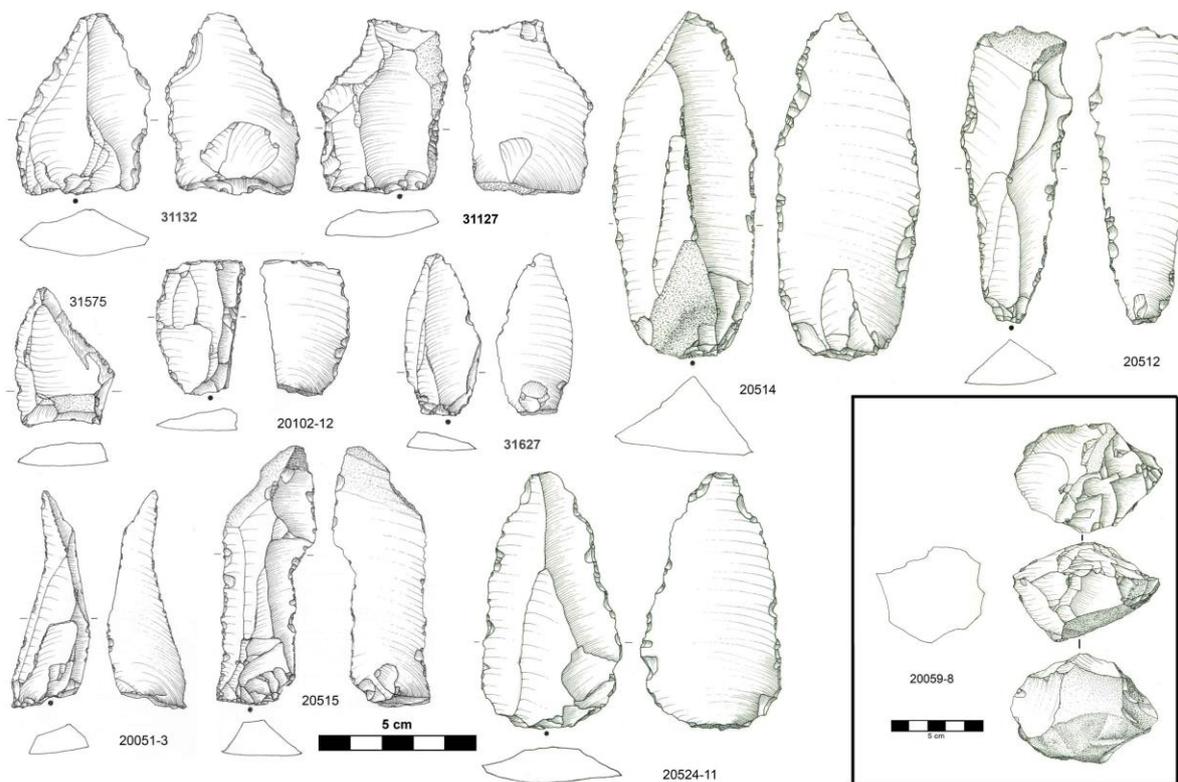


Fig. 3: Examples of artefacts from the Megaform-unit of FAY-NE10  
(box: example of a core at reduced scale)

The lowest artefact-bearing horizon reached at FAY-NE10 contains a flint industry characterized by large cores, flakes and blades, some of them with irregular retouch (Fig. 3). Because of the large size of many of the artefacts this layer was called the “Megaform” unit. During excavation it was assumed that the Megaform assemblage might turn out to be of Palaeolithic age because of faceted platforms and Levallois-type reduction. However, radiocarbon dating of two marine shell-samples – one of them a pierced shell of a large member of the *Naticidae*-family – provided dates in the 8<sup>th</sup> mill. BC (Fig. 5). Thus, the horizon with the

Megaform artefacts is younger than the unit containing the Faya-points at FAY-NE1. These finds indicate human presence in the Central Region of Sharjah during the 8<sup>th</sup> millennium BC. At present the “Megaform Unit” of FAY-NE10 must be considered the 2<sup>nd</sup> horizon of the Neolithic period in this region.

An archaeologically sterile horizon separates the Megaform-unit from the next layer above, which is rich in a particular kind of archaeological finds: Numerous small fragments of burned human bones were scattered throughout the layer and over the whole excavated area inside the cave (Kutterer et al. 2012). Obviously the site was used for the deposition of cremated human remains – perhaps as tokens in the sense of McKinley (2006:86). A number of small pierced marine shells (de Beauclaire 20xx and in prep.) may have been deposited together with the cremated bones. However, some flint finds also indicate knapping activity at the site. The only diagnostic find from this layer is a trihedral arrow-head (Fig.5, FAY-NE10-20398-1). Radiocarbon dates on marine shells from the “Cremation Unit” place this horizon into the later half of the 7<sup>th</sup> and perhaps the beginning of the 6<sup>th</sup> millennium BC.

An interesting find from this unit comes from a layer outside the cave which nevertheless clearly corresponds to the “Cremation Unit”. It is a fragment of the lower 3<sup>rd</sup> molar of a small ruminant which represents a sheep (*Ovis*). Neither goats (*Capra* sp.) nor the Tahr (*Hemitragus* sp.) nor gazelles (*Gazella* sp.) have the small posterior enamel-protrusion visible in the fragment from FAY-NE10. As wild sheep did not occur in the area during the Holocene (Uerpmann 1987; Uerpmann & Uerpmann 2008), the specimen from NE10 must represent a domestic sheep. The radiocarbon dates for the Cremation Unit range from c. 6600 BC to 5900 BC (Fig. 5).

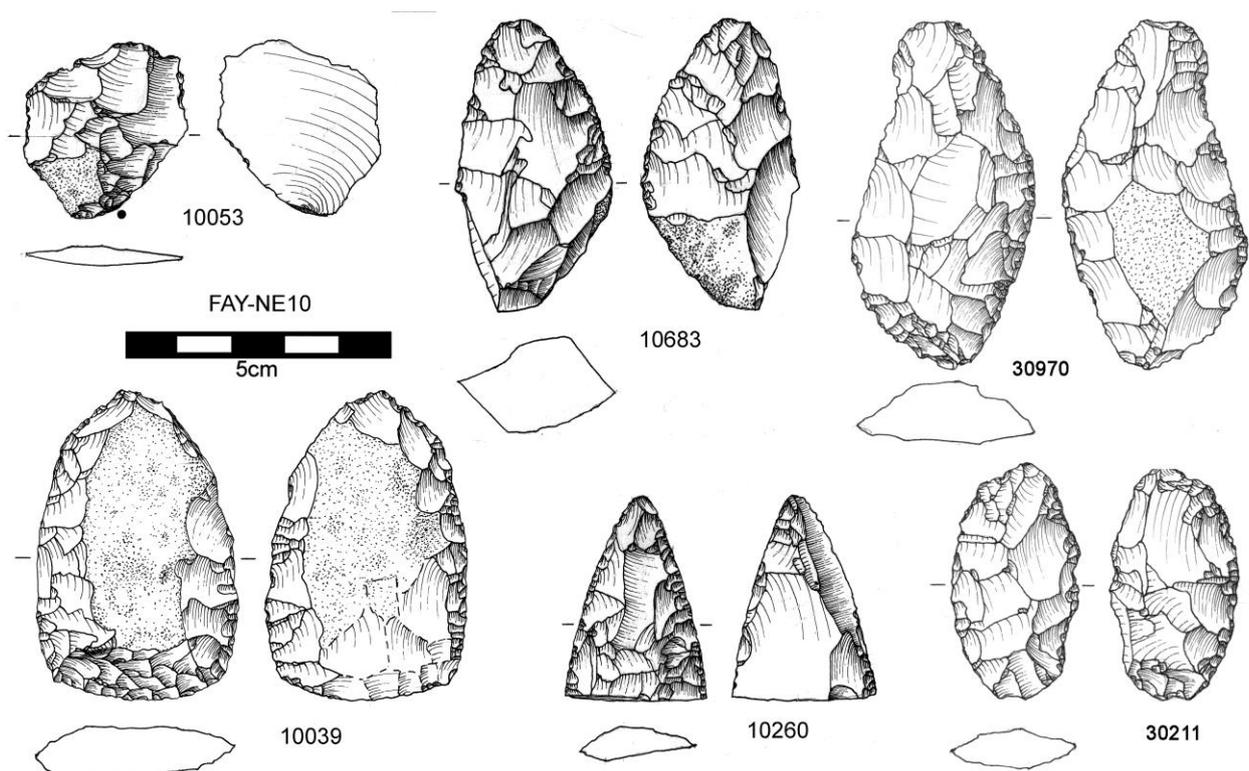


Fig. 4: Flint Artefacts from the ABT-level of FAY-NE10

The uppermost Stone-age level in the cave is a dark layer, c. 20cm thick, which delivered numerous stone artefacts. Characteristic are debris from the production of bifacially retouched tools (Fig.4-10053) as well as unfinished (Fig.4-10683) or broken foliates (Fig.4-10260) together with some few complete ones. Obviously the cave was mainly used as a workshop. Some ash-lenses and marine shell beads provided material for radiocarbon-dating. Both the artefacts and the dates allow for a clear attribution of this unit to the so-called “Arabian Bifacial Tradition”

(ABT). In addition to flints there are some ground stone objects from this horizon. Their raw-material is granite and clearly of non-local origin. The fireplaces and the numerous flints and adornments – mostly small pierced marine snail-shells – from this layer indicate that people used the little cave both as living space and flint workshop during the last quarter of the 6<sup>th</sup> and into the first half of the 5<sup>th</sup> millennium BC. Among the few animal remains from this layer there is another tooth of a domestic sheep (*Ovis*) and bones of cattle (*Bos*). These animal remains testify to a pastoral economy.

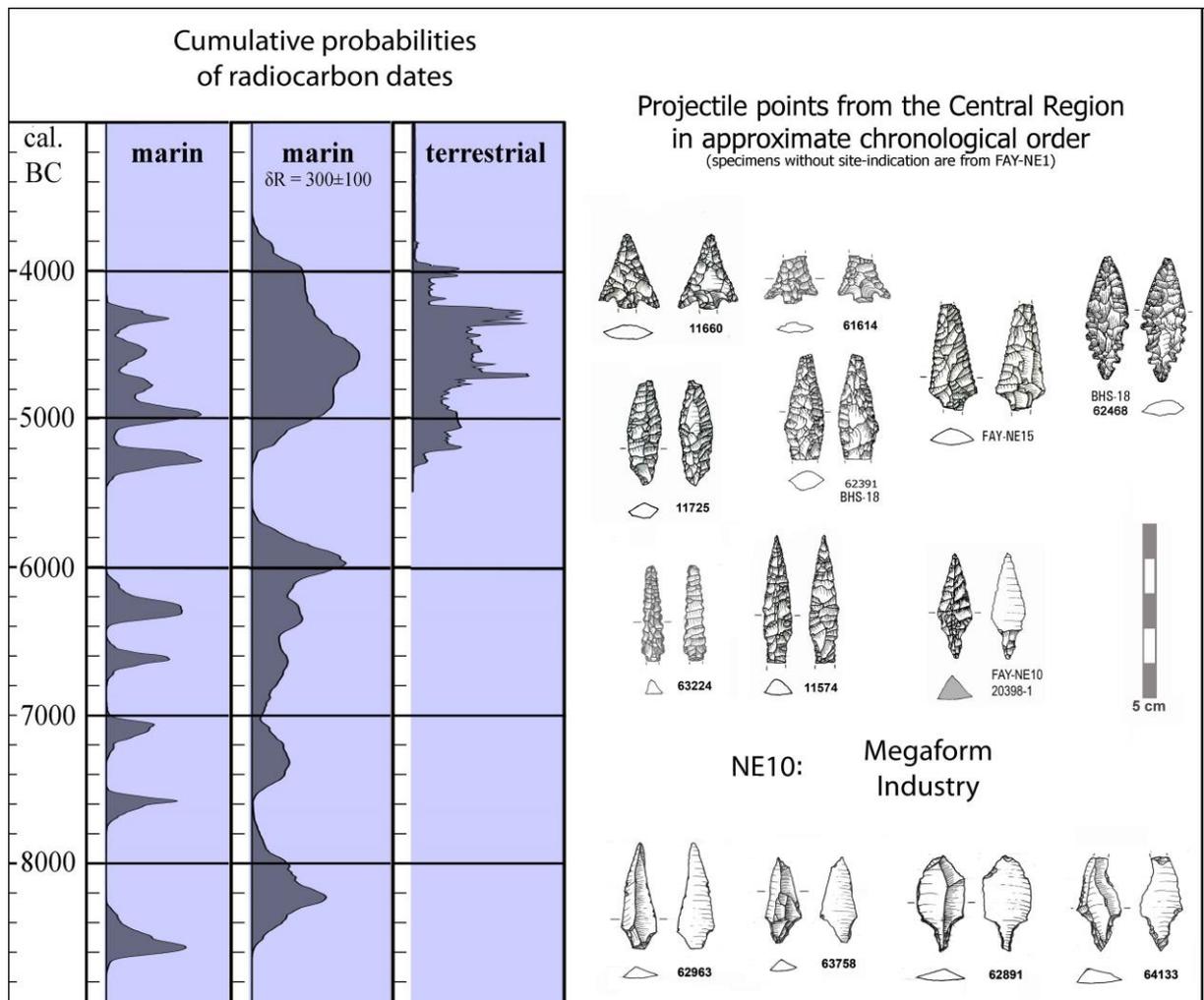


Fig. 5: Radiocarbon dates (cumulative probabilities) and stratified projectile points from the Central Region of the Emirate of Sharjah

The archaeological situation changes in the 1<sup>st</sup> quarter of the 5<sup>th</sup> millennium BC: Two graveyards – BHS18 and FAY-NE15 – both with adjacent structures and indications for day-to-day activities provide a lot of specific information which is not yet available for the earlier part of the Holocene. While BHS 18 has already been dealt with in several publications, the importance of FAY-NE15 was only recognized in 2005. Excavations in 2006 and 2010 provided evidence for the graveyard and an occupation of this site from the early 5<sup>th</sup> millennium BC into its last quarter. Faunal remains indicate a herding economy. The up to now excavated parts of the graveyard are badly preserved, however, and do not allow for conclusions beyond assuming a high degree of similarity with BHS18. The dwelling area of FAY-NE15 has well preserved stone structures. Small differences between the adornments found at FAY-NE15 and BHS-18 might indicate deviating group-identities between the people burying their dead ones at the two sites (M.

Uerpmann et al. 2012). Radiocarbon dates on ash from FAY-NE15 cover the period between about 4900 and 4200 calBC.

Final indications for Neolithic human presence in the Central Region of Sharjah come from scattered fire-pits found over the years during surveys of the excavation teams on the pediment-plains around the central mountains. Radiocarbon dates from the ashes of such scattered hearths indicate nomadic movements in the area during the centuries around the shift from the 5<sup>th</sup> to the 4<sup>th</sup> millennium BC. Sondages made at one of these scattered sites were described by Drechsler (2010) from Wadi al-Thanaïis near Jebel Aqaba. The respective radiocarbon dates are indicated at the upper end of Fig. 5. The “dark millennium” (M. Uerpmann 2003) as a period without archaeological indications for human presence in the area is indicated by a gap of about 1000 years to the next radiocarbon date from an archaeological context in the Central Region of Sharjah Emirate coming from the Hafit-type grave of BHS89 (Jasim 2012:270). This grave is less than 1 km away from Wadi al-Thanaïis. With a radiocarbon date of  $4555 \pm 20$  bp – or 2885-2738 cal BC ( $2\sigma$ ) calibrated against the marine09 curve without additional reservoir correction – represents the beginning of another phase of intense human presence in this area during the Early Bronze Age. Given the fact that a lot of new evidence for human presence *and absence* in the area during the last 130.000 years was found during the work of the Joint Tübingen-Sharjah project it seems likely that the “Dark Millennium” represents just another period of strongly reduced settlement activity in the dry areas of SE-Arabia.

Fluctuations in human presence/absence in desert areas were accentuated by the transition of human subsistence from hunting to herding. The carrying capacity of an arid landscape for ungulates depends on herd and pasture management. Without intelligent management of water and plant resources animal-density of is over time reduced to a minimum: Series of good years lead to fast growth of wild populations, causing over-grazing during normal years, and population collapses in bad years. Intelligent herd-management, including population-control and pasture-scheduling, optimizes the relationship between plant resources and herd animals. In desert environments the mutual relationship between domestic animals and their human herders can therefore be called “symbiotic” in the real sense of this term, because both the domestic animals and their herders take biological advantage of this coexistence. Thus, herders can reach higher population densities in desert areas than hunter-gatherers and their prey. In competitive situations herders will thus be able to outcompete hunter-gatherers. Archaeologically this is an obvious fact documented by the rapid spread of Neolithic economy from the Fertile Crescent in all directions. Arabia as the open hinterland of the Fertile Crescent would have been the first target for territorial expansion of flourishing Neolithic populations. Therefore we consider herding and gathering as a more plausible form of subsistence than hunting and gathering for the populations arriving in SE-Arabia during the Early Holocene.

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