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Al-Moyassar is the Gift of the *Falaj*

Paul Alan Yule

In 1981 led by Gerd Weisgerber, the study group of the German Mining Museum were the first to investigate Early Iron Age (EIA) and Late Iron Age (LIA) settlements nourished by the *falaj*, M46. First built in the EIA in the Wadi al-Moyassar (till c. 1995 'al-Maysar'), M46 channelled water downslope north to south to the EIA site M42, centuries later to the old town of al-Moyassar, some 2.5 km away. Originally the *falaj*, a mere 700 m in length, was built to irrigate the M42 settlement. Recalling Herodotus's old adage regarding Egypt and the Nile, analogously al-Moyassar is the gift of the *falaj*. Similarly, the *falaj* placed heavy obligations upon its people [1].

Recently, M. Mouton challenged the chronology of this *falaj* and the integrity of the Samad LIA chronology in its principles and in individual observations (Mouton–Schiettecatte 2014: 77–99). The EIA and Samad LIA chronology and that of M46 are inextricably linked to each other, as they arose together in a chronological way: The older sites are nearer to the *umm*, i.e. the mother well of the *falaj* (Fig. 1–3). Over the centuries, the inexorable drop of the water table forced the owner-farmers repeatedly to lower the channel in order to sustain access. Each time the *falaj* exited further downslope, dictated by the lower topography southwards. Older unpublished documentation upholds both the chronology for the pottery and for the *falaj*. If the history of *falaj* M46 now proves more complex than previously suspected, we should not forget that the discussion of the chronology is an on-going one, fuelled by newly found contexts and the original documentation. The EIA chronology itself is stable, aside from the discussion of the nomenclature of its different phases. In contrast, that of the LIA is known from fewer contexts and thus is more elusive. The best such stratified contexts lie in the UAE, with few such ones in Central Oman.

While as previously argued (e.g. Wilkinson 1977), the importation of the *falaj* from Iran to south-eastern Arabia can no longer be assumed, in fact the *falaj* also existed in early times in the latter country. Weisgerber reiterated that the *falaj* need not be older in south-eastern Arabia than Iran (2003: 63). In the former it is only better studied, especially as a result of the research of Waleed Yasin al-Tikriti. In 1981 Weisgerber explained what he called "*falaj* mechanics" of M46: The *falaj* originally brought water as close as some 22 m south-east of the settlement M42 and close to the surface. Since it was easier to move the settlement than dig deep wells and from whence water had to be hoisted, as the water table dropped the LIA dwellers moved their settlement downhill south of M42 which resulted in the origin of the house M4304 and its immediate relatives, still dependent on the *falaj*. For those who know it, let us not forget that the excavation report of 1981 was only a preliminary one (Weisgerber et al. 1981). Most of the documentation of this long-term project remained unpublished (Yule in press). In 1996, by means of excavation I set about to complement, test and verify Weisgerber's chronology for M46 and its dependencies (Yule–Weisgerber 1999: 98–106 Fig. 2–8). At that time we posed the question, did the Samad LIA gradually evolve out of the EIA, or are we dealing with two distinctly separate assemblages; can we date this transition?

In 2014 two books appeared, one regarding the EIA and LIA in south-eastern Arabia, the other regarding the settlement archaeology for all of Arabia (Mouton–Schiettecatte 2014; Yule 2014). The first contains a general re-statement

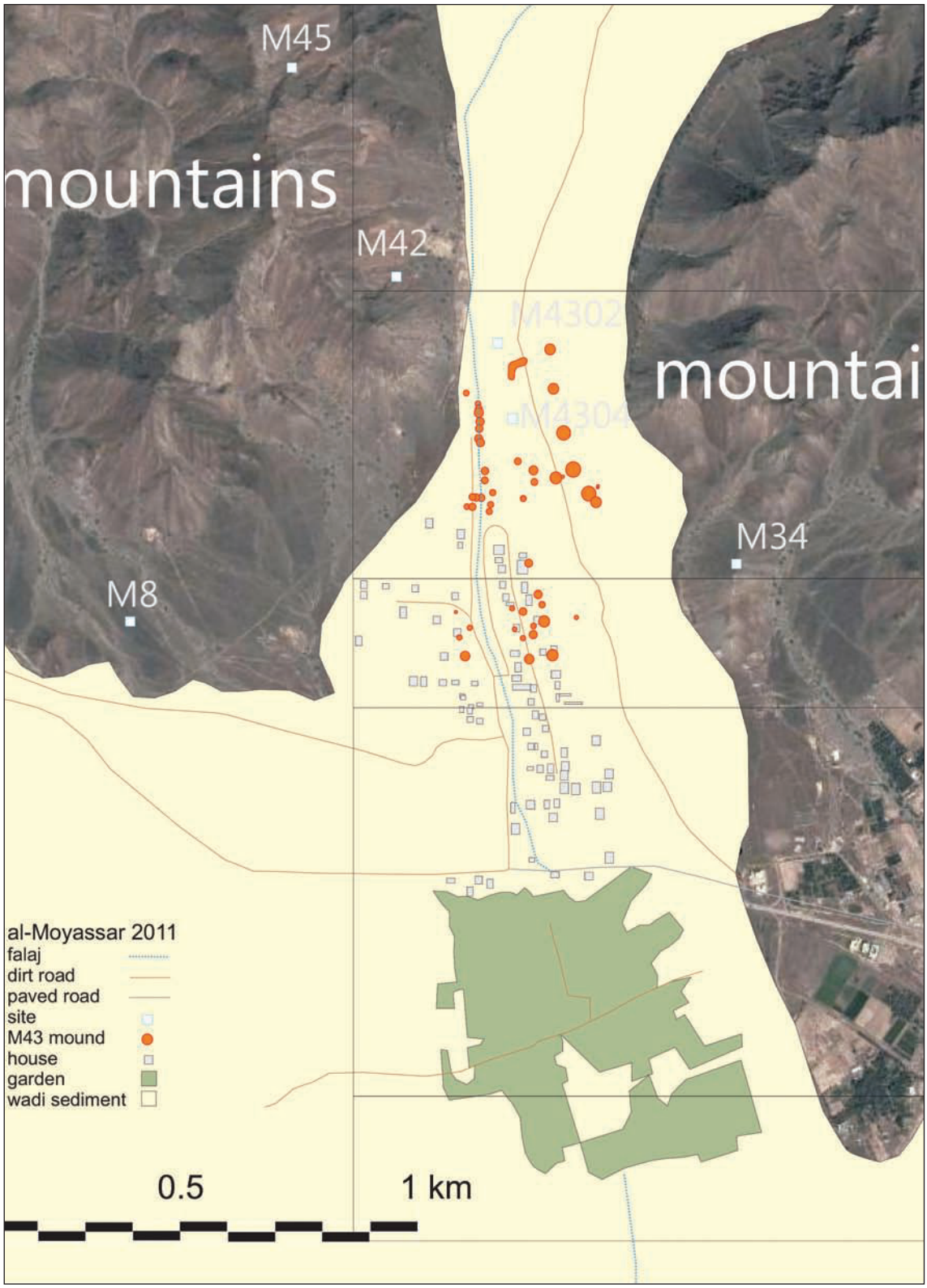

Figure 1: *Plan of al-Moyassar North shows the site areas. The village encroaches on the M43 settlement.*

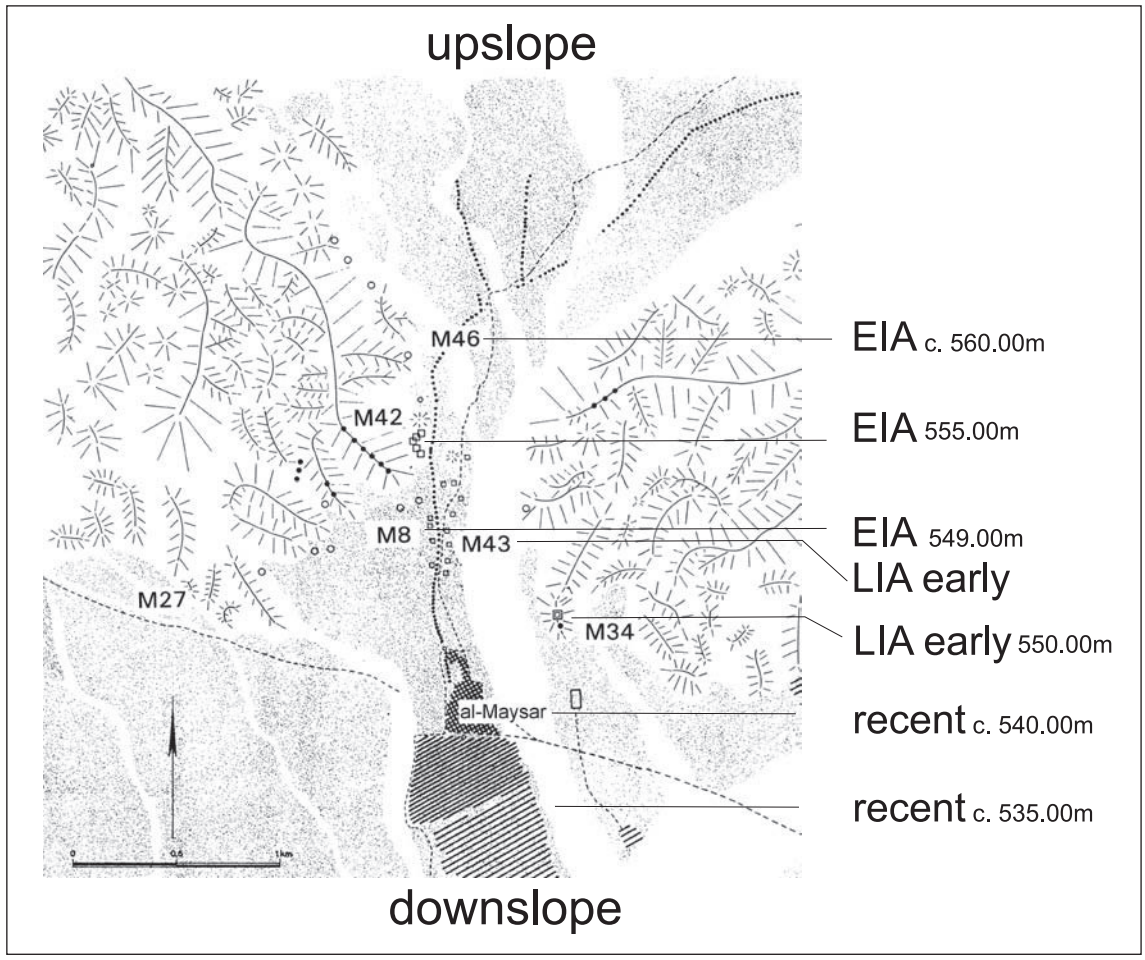

Figure 2: *Plan of al-Moyassar which shows the horizontal stratigraphy, or spatial/temporal chorology for the five phases of M46 in, which is later in date toward the south.*

Figure 3: Al-Moyassar *North toward the south-east in 1996. Centre: the M43 settlement mounds and the* M46 falaj.

and updating since I last seriously addressed the issue of chronology in 2009 (Yule 2009). The second book contains Mouton's attempted deconstruction of the integrity of the Samad LIA chronology and of contexts related to the *falaj* M46.

Mouton reveals his re-dating agenda in two citations. First: Lowering of the *falaj* channel, is „probably due to the lowering of water table that supplied it" (p. 86). In addition, „If qanat M46, at Maysar, was actually associated with the dwelling of the Samad culture…" (p. 95). In both cases he doubts the causal relationship based on the pottery chronology. However, in another place (p. 86) Mouton equivocates and conforms to Weisgerber' chronology. He mounts the following criticisms:

1) The pottery from the EIA oldest settlement, M42, is not stratified and the thermoluminesence dating is out of context (p. 86).
2) Downslope from M42 along M46, the LIA subsequent settlement, M43 (a chain of some 44 settlement hills) is of alleged EIA date (p. 86).
3) In addition, 450 m to the west of M46, the LIA fort, M34, he re-dates to the EIA (p. 86).
4) More basically, Mouton recapitulates on nearly every single page of his 22 page re-interpretation of the Samad LIA that this period shows a gradual transition from the EIA in terms of pottery as well as stratigraphy (p. 78–82, 86, 95, 96).
5) As argued, pottery decoration and shape carry over from the EIA into the next period, and the LIA populations simply gradually replace the EIA ones in terms of stratified sites.
6) Finally, the material culture of Mouton's période préislamique recente, the 'PIR', which he originated for UAE sites, he believes to be very similar to the Samad LIA: Thus there is, "…no need to retain this cultural distinction…" (p. 80) 2. He explains that the cultural relations of the populations of the two regions are close but not identical (Mouton letter 20.12.2014). Nonetheless, the finds from the excavated PIR cemetery at ʿAmlaʾ/al-Fuwaydah he mistakenly attributes to the "Samad culture" (p. 79 fig. 63).

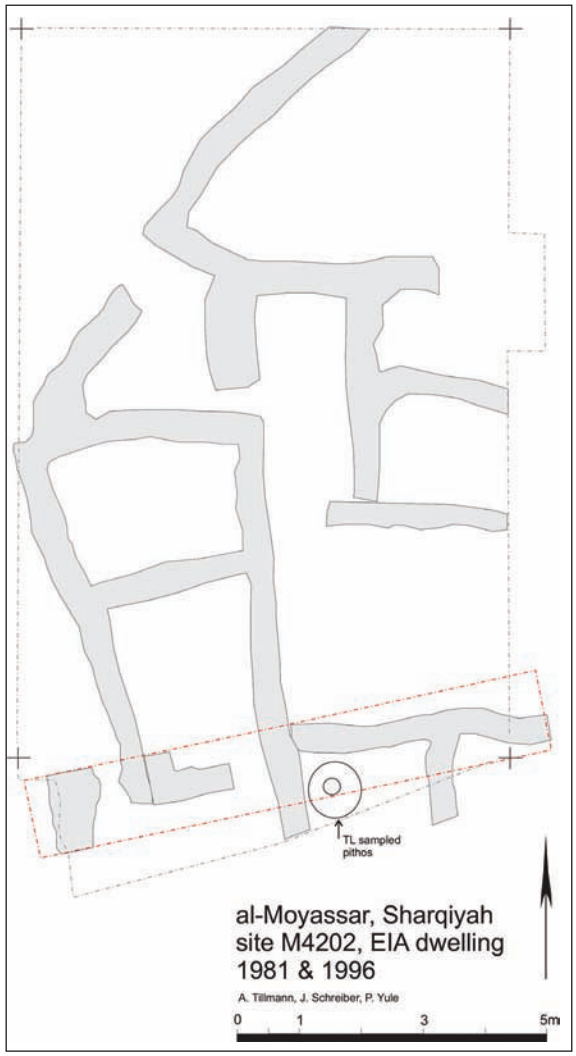

Figure 4: *Plan of the EIA III site M42 which shows the position of the thermoluminescence sample of 280 BCE +170 in the lower right.*

Figure 5: *Thermoluminesense dating of a pithos in situ in the EIA settlement M42. Cf. Fig. 4.*

Several of his arguments misquote the sources, ignore published evidence, or are unsubstantiated. These elicit on the part of the reader mistrust, frustration and scepticism regarding the Samad LIA chronology and that of M46, as colleagues have told me over the years. For example, dubious among the deficits which Mouton identifies are a paltry 37 prehistoric human skeletons from the Bochum excavations at Samad and al-Moyassar from 1980–91 (p. 82): In fact, we uncovered and evaluated 191 such individuals – a thankful informational basis for my gender study of the Samad LIA population (M. Kunter in Yule 2001 I: 477–80). Mistakes based on an unawareness of the published reports result in his interpretation which replaces existing solutions with non-existing problems. We shall take up these points in what follows.

Allow me here to re-acquaint you with the find zone, al-Moyassar North. Our story begins with the earliest site, the *falaj* M46 which was built to irrigate the EIA settlement M42. Originally, M46 was a shallow *falaj* built in the wadi gravel with a surface of some 565 m altitude; the Samad LIA M43 lies 5 m lower and some 700 m toward the south. Since M46 irrigated no other site, originally M42 was its raison d'etre. This settlement yielded pottery and a thermoluminesence date of 280 BCE +170. According to Mouton (p. 86): the TL dating results from a „single sherd from the graves" (cf. Fig. 4 and 5), although over the years drawings, photos and texts were published which show a large storage vessel in situ – from whence G. Wagner measured this date. Mouton refers to the M42 pottery as from the surface despite cross section drawings which elucidate just the contrary (Yule–Weisgerber 1999: 104–6 Fig. 8). The available pottery excavated from the sites M42 (Yule 2001 II: Taf. 523) and M4302 (Yule 2001 II: Taf. 524–5) are local EIA indistinguishable from that of the exclusively EIA Lizq fort L1 which is comprehensively described by S. Kroll (most recently 2013: 191–3). Kroll's student, J. Schreiber, dates the pottery from L1 to EIA II (2007: 52 map 8) in the chronological nomenclature for Central Oman (Schreiber 2010: 52 Karte 8). Schreiber considers M42 to date, *"… wohl relativ spät innerhalb der Frühen Eisenzeit…"* (2007: 60).

In fact, EIA sherds occurred rarely among the pottery from the M43 settlement chain (Table 1; Yule 2001 II: Taf. 524.5 & 11). But one should actually consider the number from the unpublished material: 219 sherds are classified as

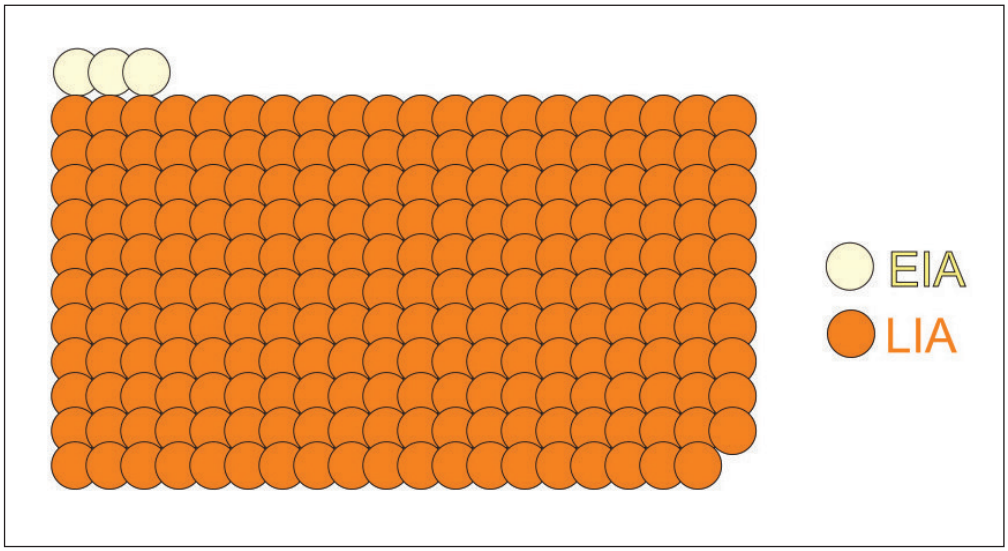

Table 1: *Sherd count from the different mounds of site M43 show LIA pottery which dates this settlement.*

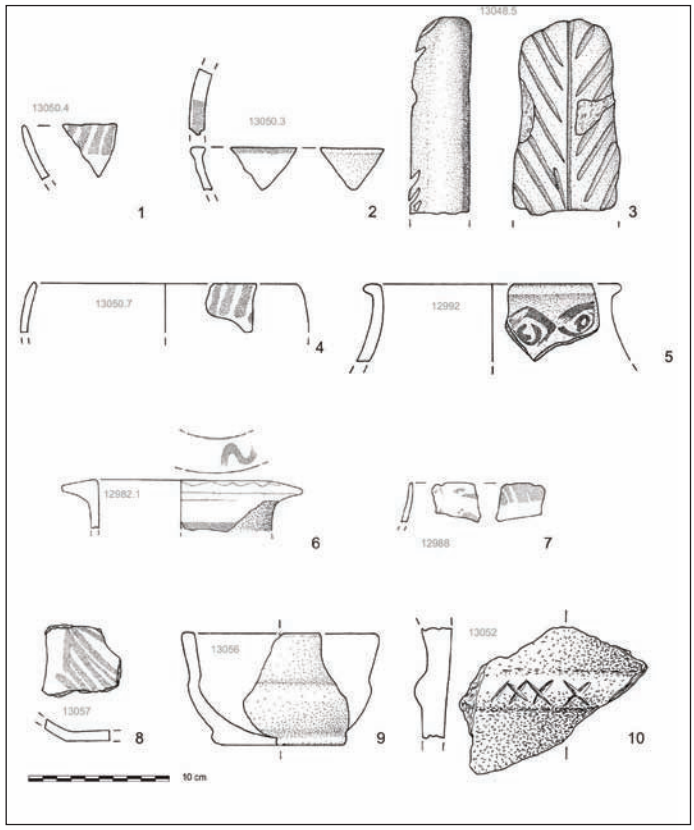

Figure 6: *Stratified and excavated pottery from the EIA III dwelling M42 complements the thermoluminescense date.*

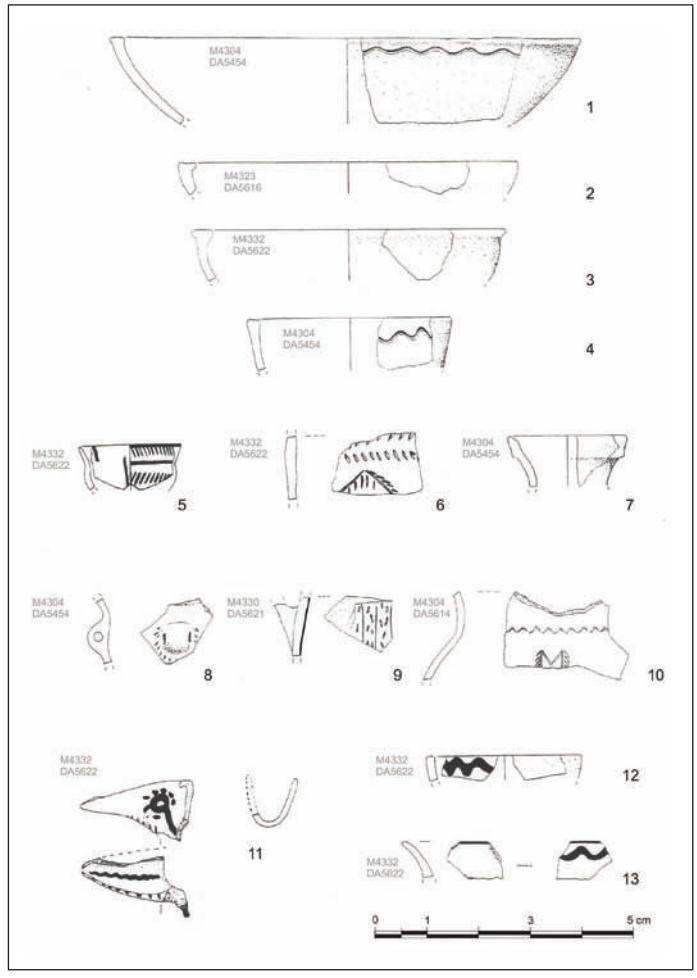

Figure 7: *219 sherds from the settlement M43 are largely of Samad LIA date. However, 5 and 11 are of EIA date. Most of the unpublished sherds are excavated from the M4304 dwelling.*

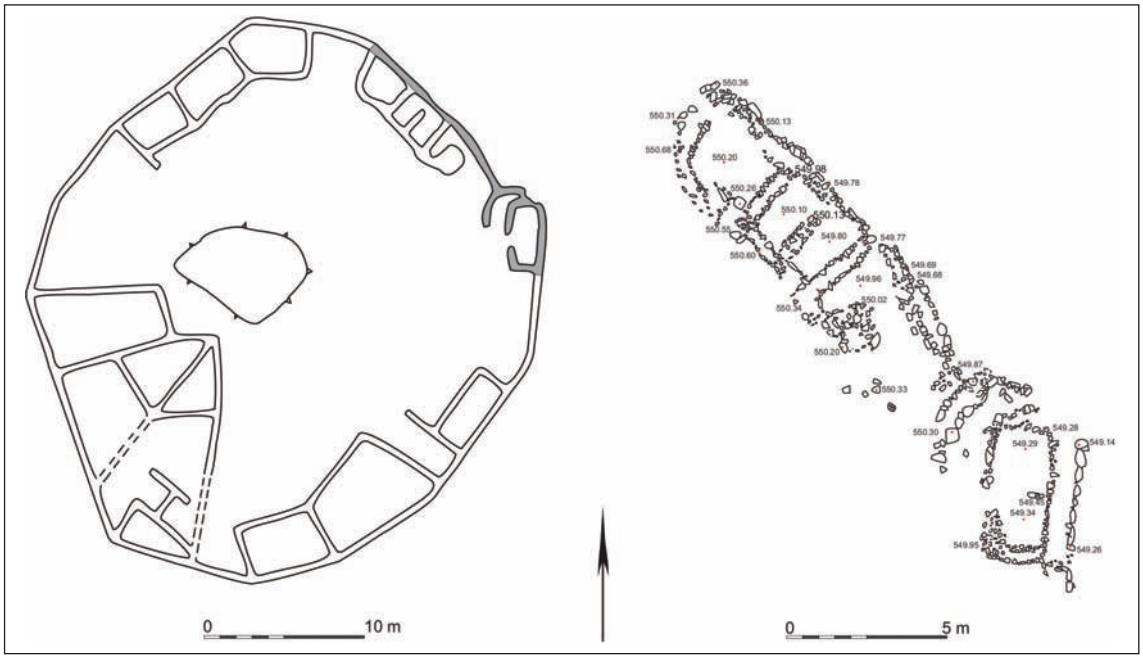

Figure 8a: *The Samad LIA fort M34 in al-Moyassar has casemate walls.*

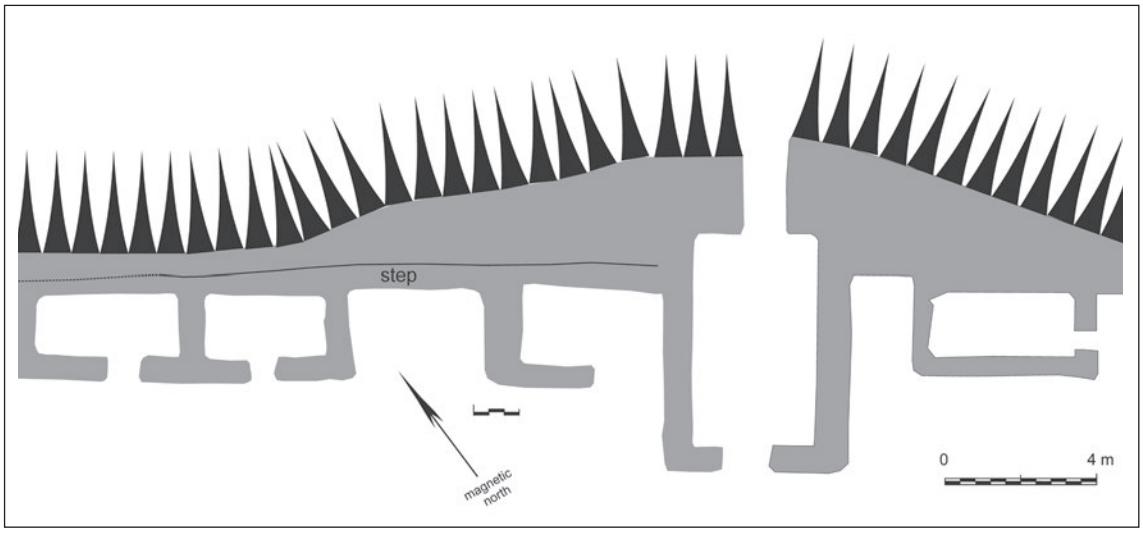

Figure 8b: *The Samad LIA fort at al-'Atqiyah/J. Sunsunah also has casemate walls. Detail of northern entrance.*

Samad LIA and three or four are EIA from these 44 settlement hills. These mavericks do not suffice to change the dating of the entire settlement chain site. We should not over-estimate the precision of our dating method. It would seem as if the Bedouin chief, Mālik bin Fahm, once said apodictically to his potters, "I am tired of EIA pottery, from today on you will not make any more but only LIA shapes and fabrics. Be careful on which hill you discard them". Analogously, in Europe occasional finds e.g. of Neolithic and Bronze Age scraps in early medieval contexts happen routinely without provoking attempts to re-date the medieval period.

A. Tillmann excavated the house ruin M4304 in 1981 (Figs. 6 and 7; Tillmann in Weisgerber et al. 1981: 234, 236–8; Yule in press). He made two

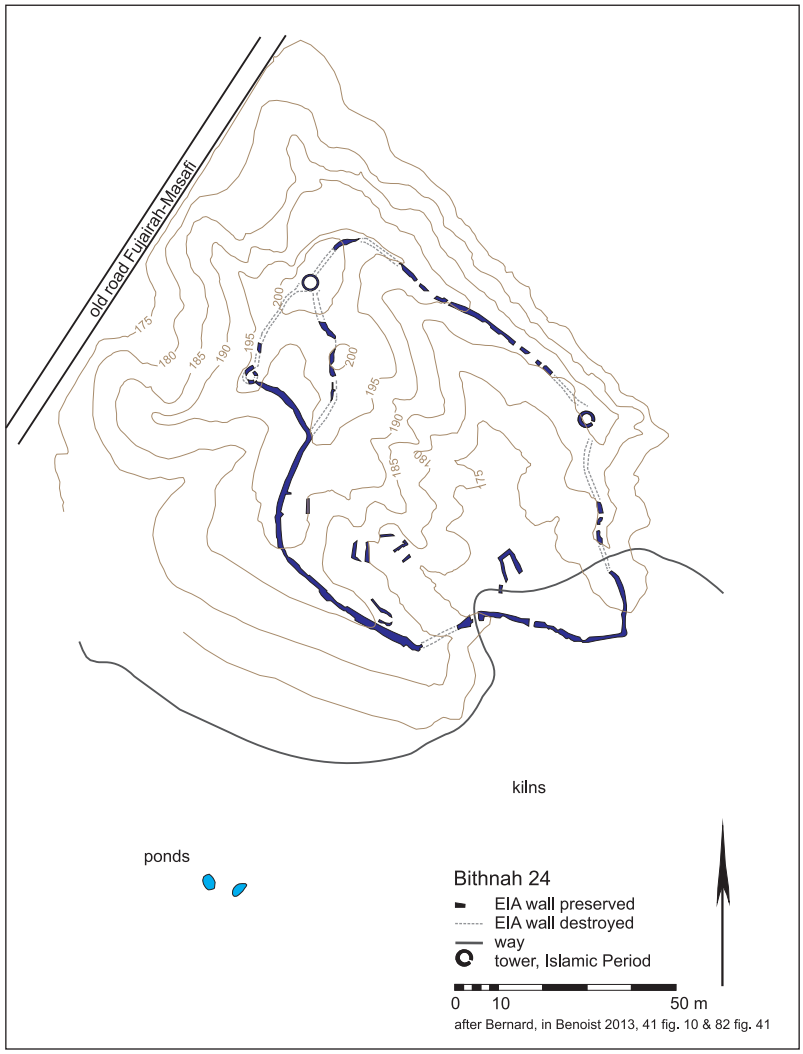

Figure 9:
Plan of the EIA fort Bithnah-24

end to end trenches in this hill, both 1.4 x 4 m in surface which today are still visible. At c. 1.45 m depth he reached a thick clay house floor in his trench 1. His shallow trench 2 was not pursued and is known basically from a plan (Yule in press). Mouton emphasises that for M43 "Samad-type pottery is not supported by the publication of the material" – basic for his attack and our defence. However, Weisgerber et al. 1981 and Yule 2001 contain four plates with published LIA pottery from M43. The bottom line is that the published and unpublished stratified pottery from this settlement is of Samad LIA date, despite an incorrect dating description of the pottery in the preliminary report (Weisgerber et al. 1981: 238, cf. 1981: 236–7 Abb. 78–9).

Also dependent on the water from M46, the hillfort M34 protected the M43 dwellings. Mouton writes that M34 has all of the characteristics of EIA forts, of which he articulates none. I challenge anyone to explain which similarity is intended. M34 has no comparisons with any other EIA or LIA forts except that they are built on a mountain, e.g. Bithnah 24 (Figs. 8a, 8b and 9). Mouton implausibly re-dates a copper alloy P10 arrowhead found there (Yule 2001a I: 103, 108: mostly from LIA, also EIA III contexts) to support his re-dating for the building. Turning to the pottery, he describes it as EIA. However, but for two sherds all is clearly of Samad LIA date. Sovereignly ignoring the TL dating of 130+150 CE of the pottery from M34, and the published LIA pottery, Mouton re-dates this context to EIA. Certainly, the dating of the M46 dependencies still can be cited as in 1981 (Table 2).

Having cleared the dating of the pottery, we now can map the chorology of the M46 *falaj* itself (Table 3, Fig. 2). Phase 1 of M46 reaches only the

site	references in Weisgerber et al. 1981 & Yule–Weisgerber 1999; Yule 2001 II	period
M4302	1999 110 Fig 11	EIA
M4304	1981 page 236 Abb. 78.1–7; 79.10–19; 2001 II Taf 524.1, 4, 7, 10,	LIA
M4323	2001 Taf. 524 .2	LIA
M4325	1981 page 237 Abb. 79.12, 14, 15).	LIA
M4329	2001 Taf. 524.13?	LIA
M4330	2001 Taf. 524.9	LIA
M4332	2001 Taf. 524.2, 3, 5, 6, 11, 13	LIA

Table 2: *The site M43 consisted of 44 mounds dated by means of excavated and surface LIA pottery.*

site	pottery	pottery comparison	date	tl dating
M42	EIA	Lizq L1	EIA III	288±170 BCE
M4302	EIA	Lizq L1	EIA III	-
M34	LIA early	different graves	LIA early	130±150 CE
M4304	LIA early	different graves	LIA early	-
M46	none	none	EIA-recent	-

Table 3: *Dating summary of the different al-Moyassar North sites along the falaj M46.*

settlement M42 at c. 555 m altitude. Phase two correlates with the early LIA settlement M4304 at 550 m altitude. There is a lateral break of some 150 m in the middle of the M43 settlement at about 545 m altitude. Laterally from M43 and M46 the Fliehburg M34 belongs to this phase. Between phase 3 and 4 the region was uninhabited for as much as a millennium. By the time of *falaj* phase 4 we enter the subrecent and recent period. The first mention of al-Maysar/Moyassar (=Maghsar) occurs in the 13th century CE in Yaqut's Muʿjam al-buldān (Yule 2001 I: 193 note 1767). *Falaj* phase 5 cannot be dated in absolute years but obviously follows phase 4 since it lies lower, to the south and there are no settlements further south, that live from the *falaj*. This *falaj* extension was to little avail since the aquifers were soon exhausted. Between here and the EIA M42 the water table dropped some 15 m in altitude. Lines of recent *falaj* construction shafts continue to be visible to the south of the present-day garden is, but to little avail because after being finished the aflāj soon exhausted local aquifers.

The settlements and cemeteries of al-Moyassar North cleave linearly into EIA, early Samad LIA phases, and subrecent to recent ones.

In light of the pottery, thermoluminesence and other evidence, it is clear that the higher and more northerly sites (e.g. M42) are of EIA date. The neighbouring excavated hill south of M42 is the contemporary M4302. M4304 is of the Samad LIA. The pottery dating and the chorological position of settlements along the M46 *falaj* must comply with each other. But the pottery chronology cannot register fine chronological changes within this complex minutely.

Weisgerber observed renewal of M46 and its descendants – first a sketch published in 1999, later as photos during a *falaj* repair in his last article of 2003 regarding our topic (Fig. 10). These show four visible *aflāj* (Fig. 10) These show three visible aflāj. A fourth one lies higher. Al-Moyassar North is the best place I know to study the inception of the Samad LIA which here is unthinkable without the *falaj* M46 context: However, we have no guarantee of a perfect and complete reflection of the IA past. The *falaj* and finds date each other reciprocally relatively, but the absolute chronology dangles precariously on two thermoluminesence datings. Colleagues who address this period may not appreciate the difference between relative and absolute chronology in our methodological repertoire, since none have commented on it yet.

Weisgerber's "*falaj* mechanics" are

Figure 10: *Al-Moyassar falaj renewal, 1996–2005.*

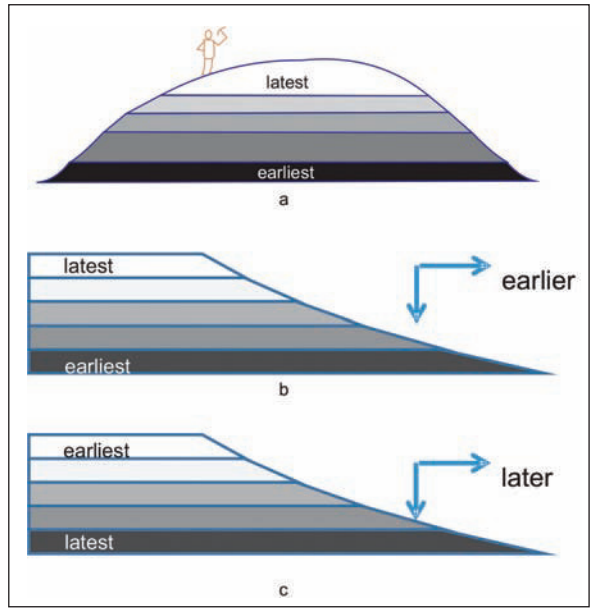

Figure 11: *All three diagrams show that in an irregular topography, older levels can be met laterally and not just vertically.*
A: Diagram settlements of a hill
B: Stratigraphy in a normal case
C: stratigraphic diagram for the aflāj in the case of a sinking water table.

synonymous with horizontal stratigraphy which we complementarily use to date the *falaj* M46. As one proceeds in irregular topography, earlier layers occur laterally and not just vertically where they surrounding earth has been eroded. These dating principles are neither new nor arcane. Already in the 17th century the Dane Nicholas Steno proposed several rules for geological stratigraphy which others such as James Hutton elaborated on. Steno was involved in a debate of how objects which resembled shark teeth got into rocks. In fact, they were fossilised shark teeth, which stymied most at that time, since they were found far away from oceans. Having convinced most that previously oceans once existed, where today there are none, he established the existence of this kind of fossil. His stratigraphy diagrams apply directly to our *falaj*, M46. Strangely, horizontal

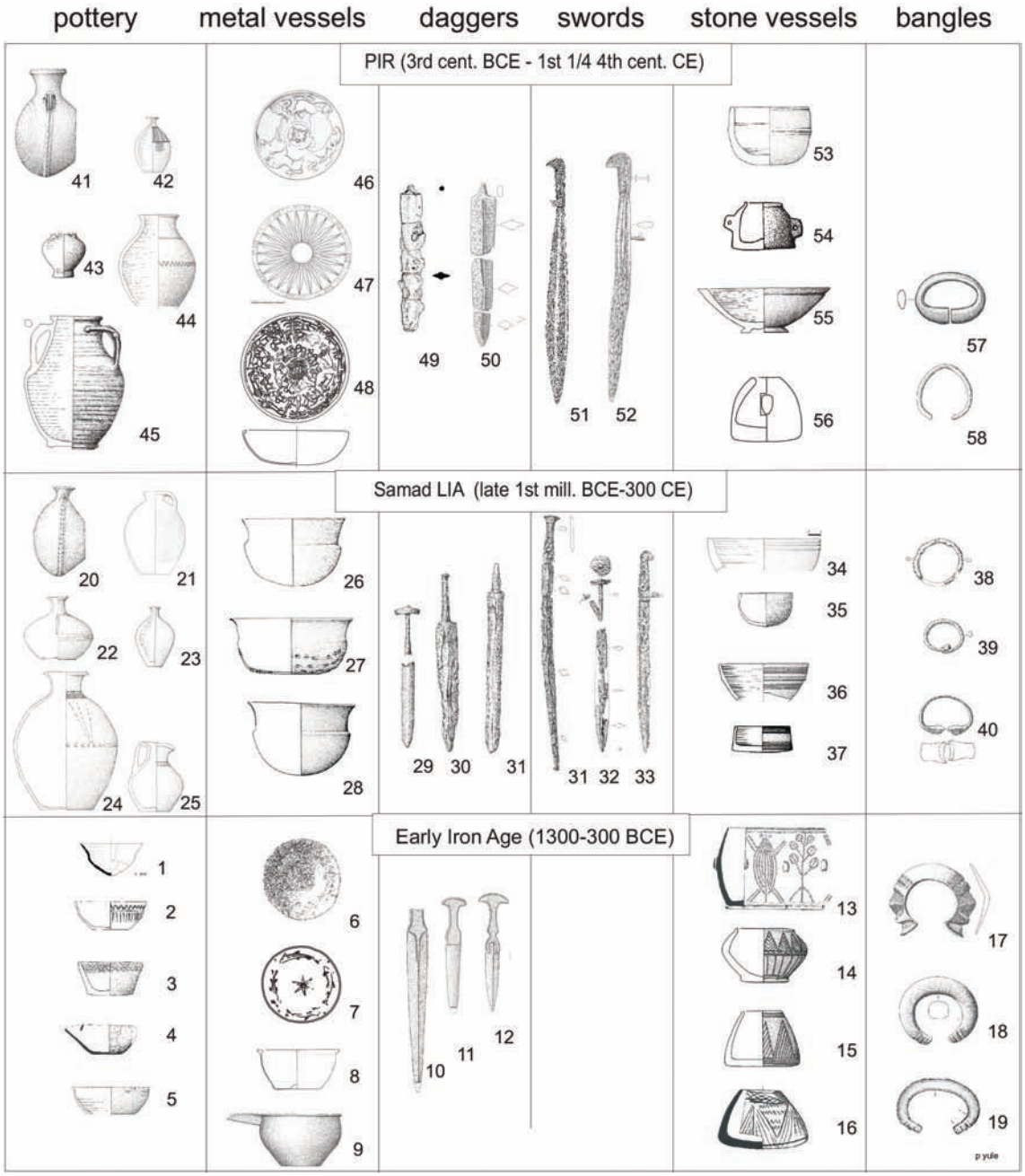

Figure 12: *Characteristic finds of the EIA, PIR and Samad LIA generally contrast with each other. The PIR and Samad LIA share, however, a few forms.*

stratigraphy in no way appears in that old classic of 1954 written by Mortimer Wheeler, even if it was often used on the European continent since the late 19th century, e.g. by the famous Swedish archaeologist Oscar Montelius and many others (Eggert 2001: 222–47). Fig. 11 shows the principle of horizontal stratigraphy as a diagram. You do not necessarily have to go downward for the stratigraphy to get older. But wait a minute. Did we not say that over time the water table dropped? Then exactly the opposite happens in the *falaj* as a function of time.

One of Mouton's ideas has been neglected in our study. He argues that stratigraphically and in terms of pottery decoration, there is a gradual transition from the EIA to the Samad LIA in Central Oman. The only site where this can be argued in terms of stratigraphy is from one non-excavated site at Ibrāʾ. The EIA and LIA stratigraphic continuity which Mouton mentions (95 note 212) no doubt hearkens back to J. Schreiber (2007: 277). This belief might be admissible, but there is neither a cross-section view nor were the observations made by means of excavation. In order to make the point of a gradual transition, Mouton attacks the dating of well-dated contexts such as M42, M4304 but also those of their cemeteries. In order to argue for an intimate connection between EIA and LIA, he must ignore or re-date clear single-period sites, for instance the Lizq fort, L1 (Kroll 2013) and the M34 fort.

At al-Moyassar, Weisgerber's site "43:1" is identical with our M4304. The latter corrects the site designation published in his report of 1981 (p. 238). Actually Tillmann wrote "M43/4", "Maysar 43 4" or "43 4-1" etc. in the original drawings of all of the M43 contexts and their pottery. But in the publication of 1981 only "M43" appears for both the M43 settlement chain and the ruin M4304. In fact, he did not excavate the first and northernmost M43 hill, but rather the fourth one. Mouton (p. 86) perpetuates Weisgerber's and Tillmann's mistake that "M43" (actually house ruin M4304) contained EIA pottery. Although Tillmann wrote that the lowermost house contained pottery like that of the nearby EIA M42 settlement (p. 238), none of the sherds reproduced in his report for hill M4304 (Tillmann 1981: 236–7 Abb. 78–9) or which are unpublished are of EIA date. This error generated not only Mouton's confusion, but also that of all other authors who discussed M43 and more specifically M4304. In no single sherd of EIA pottery occurred at M4304, although a few occurred at other M43 hills (Fig. 7).

Fig. 12 shows diagnostic finds of the EIA, PIR and Samad LIA. If an experienced professional finds these three assemblages difficult to distinguish from each other, then others less familiar with the material will have even more difficulty. Please note that each artefactual category – pottery, metal vessels, daggers, swords, stone vessels, bangles – contrasts between the three periods.

Footnotes

1 - This essay derives from a larger one (2016) in which my argumentation is fuller. I thank the Interdisciplinary Center for Scientific Computing of Heidelberg University for enabling a survey in December 2014 in Central Oman. Finally, the Seminar for the Languages and Cultures of the Near East of provided logistical and linguistic support. The Ministry of Heritage and Culture allowed this research. My colleague, Thomas Stöllner, of the German Mining Museum in Bochum enabled my accessing of the old documentation of the 1980s fieldwork of Gerd Weisgerber. We thank Michel Mouton for his ideas regarding this topic in and out of print: No sand grain, no pearl.

2 - Since cultural anthropologists may feel uncomfortable with the term 'Samad Culture', I prefer the more neutral 'Samad Assemblage'.

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Fig. 1 & 2 Google Earth & DBM 2011; 3, 4, 7, 11, 12 Yule; 5 Wagner; 8 redrawn after Heckes, Tillmann (Weisgerber 1982: 86 fig. 4.1); 9 Benoist 2013: 82 fig. 41; 10 Weisgerber [1989] 2003: 74 fig. 24.

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