



# The rise and ruin of a medieval port town: A reconsideration of the development of Julfar

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## Abstract

Julfar was a major port town of the Persian Gulf during the fourteenth and fifteenth centuries AD. A possession of the Hormuzi empire, it was a lucrative source of taxes and pearls, and a port of trade for northern Oman, tapping into maritime trading networks connecting the Middle East with Africa, India, Southeast Asia and China. The site is found north of modern Ras Al-Khaimah, UAE. Julfar Al-Nudud was previously considered to be a late suburb of an urban core, Julfar Al-Mataf, and is located on a creek opposite the latter. However, excavations in 2010 indicated that Al-Nudud was part of the original urban core, which had grown up on either side of the creek. Moreover, re-examination of previous work in Al-Mataf, where a large mosque and fortification were excavated (by British and French teams), shows that the two areas followed different trajectories. Significant occupation in Al-Nudud and southern Al-Mataf (revealed by previous Japanese excavations) ended before the start of the sixteenth century, while use of the mosque and fort in central Al-Mataf continued into the seventeenth century, albeit discontinuously. A revised concordance of the phases derived from the work of various archaeological teams is therefore proposed.

## KEYWORDS

Arabian Gulf, Chinese ceramics, Hormuz, Islamic archaeology, Persian Gulf, trade

## 1 | INTRODUCTION

The intention of this paper is to outline the stratigraphic and chronological sequence of Julfar al-Nudud (Ras al-Khaimah, UAE, henceforth referred to as Al-Nudud), and to compare it to the archaeological record revealed by former excavations at the neighbouring site of Julfar al-Mataf (henceforth Al-Mataf). Both are part of the same very major medieval coastal town, historically known as Julfar. The dating of the various excavated elements of Al-Mataf will then be reconsidered, and a concordance established with the phases at Al-Nudud, allowing us to examine the

developmental trajectory of the city. This will then briefly be set within its historical context.

Only passing reference will be made to the architecture and the major classes of finds, with the exception of the Far Eastern ceramics, which contain valuable dating evidence. The full architectural and artefactual record will be presented in the final monograph, currently in preparation, which includes specialist studies of the local ceramics, the glassware, the coins, and fish and faunal remains.

The excavations at Al-Nudud took place in February–April 2010, funded by the Government of Ras al-Khaimah, and conducted by a team from Oxford Brookes Archaeology

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and Heritage, with a study season following in September–October of the same year.

## 2 | HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Julfar was the only medieval port town on the Arabian coast of the Lower Gulf, and indeed the only known town in this area until the eighteenth century AD. Historical sources first mention it in the early tenth century (Tabari), regarding events in the seventh century AD (King, 1994: 206). References to the town of Julfar persist during the eighth–thirteenth century (including Maqdisi, Idrisi and Yaqt), but it is not until the early or mid-fourteenth century that the archaeological site known now as Julfar was definitely occupied (Kennet, 2003: 114). Some kind of centre was previously located at the nearby mounded site of Kush, between the late Sasanian period and the thirteenth century AD (Kennet, 1997, 2004: 13–14, table 2). From possibly as early as the tenth or eleventh century, an extensive area of date gardens was protected by a very large wall (today known as the Wadi Sur) running from the sea

at one end, and terminating at a fortified building (“Sheba’s Palace”) at the foot of the mountains (Figure 1) (Franke-Vogt, 1996; Piacentini & Velde, 2009: 329, figs. 3–4). The Julfar mentioned by historians and geographers both before and after the thirteenth–fourteenth century could equally have referred to the town (the urban and administrative centre that shifted from Kush to Al-Mataf and Al-Nudud) and the much larger and heavily populated walled oasis.

Later historical descriptions from Arab (al-Sakhawi), Persian (Nimhidi) and European sources (Barbosa, di Varthema, Thevet) of the fourteenth to sixteenth centuries reveal Julfar to have been a trading port, a pearling centre, a starting point for pilgrimage to Mecca, and a source of revenue and military support to the Kingdom of Hormuz (Aubin, 1973c: 143, n. 370; Barbosa, 1866: 34; di Varthema, 1863: 93; Piacentini & Velde, 2009: 322–323; Thevet, 1575: 329).

The archaeological site of Julfar consisted of an extensive stretch of mounding, littered with pottery, which ran for more than 4 km along the coast of Ras al-Khaimah. Al-Mataf and Al-Nudud were both on sand-bars, separated by a narrow creek, which opened up into an extensive lagoonal area on the landward side (Morley, Carter, & Velde, 2011).

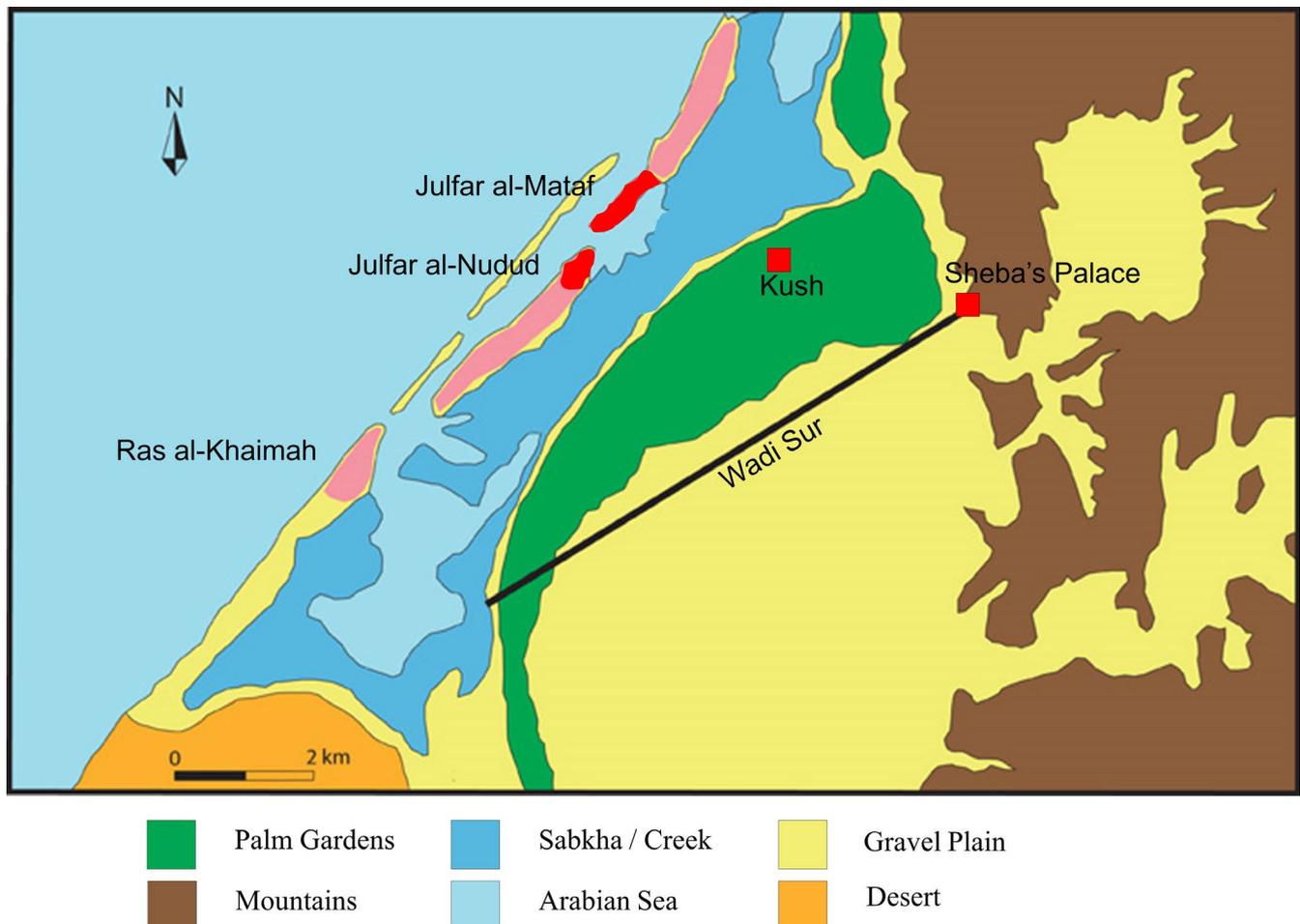
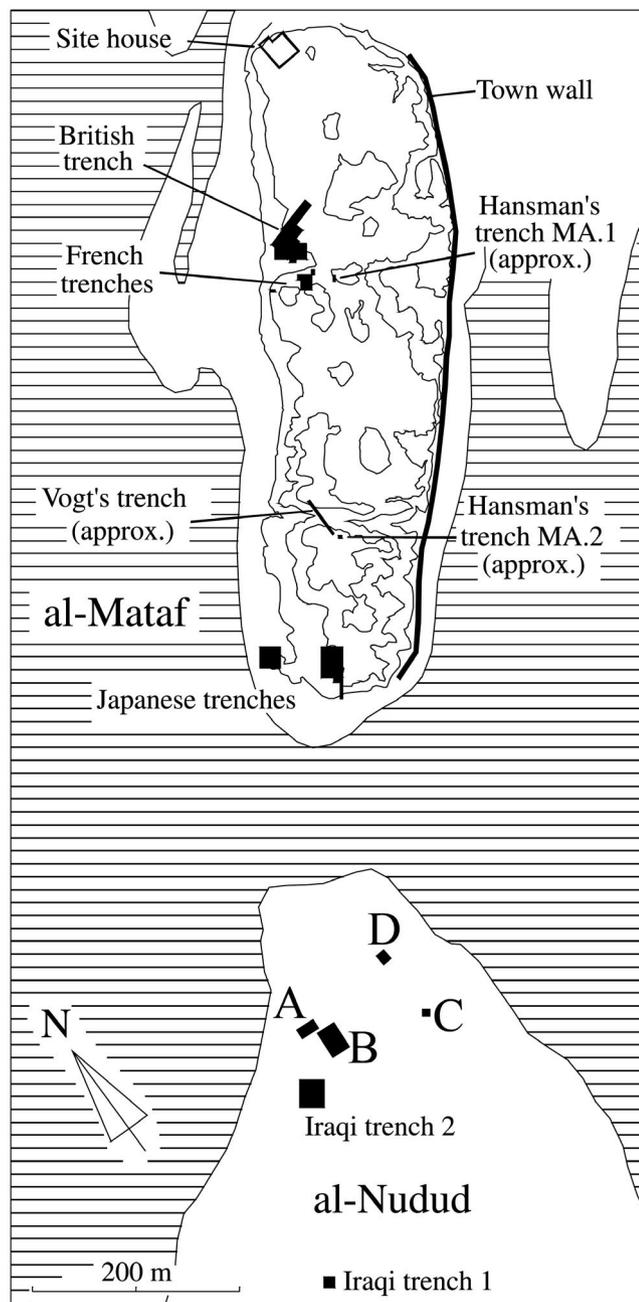


FIGURE 1 Configuration of the Julfar oasis and sites



**FIGURE 2** Location of excavation trenches at Al-Mataf and Julfar Al-Nudud

It was identified by de Cardi in 1968 (de Cardi, & Doe, 1971: 249–250), and test excavations were carried out at Al-Nudud by an Iraqi team in 1973–4, published in Arabic (Taha, 1975). More detailed investigations of Al-Mataf and Al-Nudud were then carried out by Hansman in 1977–8, and Vogt conducted test excavations at Al-Mataf in 1988 (Hansman, 1985; Vogt, 1991). A series of excavations by international teams then took place at Al-Mataf between 1988 and 1994, involving a German team which sought to identify the town wall surrounding the urban core; a Japanese team which excavated trenches in the southern part of Al-Mataf facing the creek which separated it from Al-Nudud; a British

team which explored the central mosque and adjacent area, and also tested Al-Nudud; and a French team which investigated the prominent remains of a fort in the centre of the town, close to the mosque (Hardy-Guilbert, 1991; Jansen, 1991; King, 1990, 1991, 1992; Sasaki, 1993, 1994, 2006; Sasaki & Sasaki, 1992). The Japanese excavations are the most extensively published, while a summary of the British excavations and an invaluable synthesis have been presented by Derek Kennet (Kennet, 2003, 2004). Figure 2 shows the locations of previous and recent investigations.

Kennet concluded that the occupation of Julfar al-Mataf ran from the early to mid-fourteenth century to the end of the third quarter of the sixteenth century AD, and that Al-Nudud could be characterised as part of a later expansion from the core of Al-Mataf, dating to the fifteenth and sixteenth centuries (Kennet, 2003: 106, 119). The new excavations indicate that a revision is required: Al-Nudud is not a later extension of the site, and its urban occupation appears to begin earlier than the centre of Al-Mataf (around the mosque and fort). Indeed, Al-Nudud may have comprised part of the first core of the town, located on either side of the mouth of the creek. Moreover, both Al-Nudud and the area of the Japanese trenches (just over the creek from Al-Nudud) were largely abandoned, or at least lost their urban character, before the end of the fifteenth century. Only the buildings in the centre of Al-Mataf (the large mosque and fort) continued to be maintained and rebuilt during the sixteenth century, and the use of these extended into the early seventeenth century AD.

### 3 | IRAQI EXCAVATIONS AT AL-NUDUD

The Iraqi team at Al-Nudud (which they called “Derbahania”) excavated two large trenches, which John Hansman reopened in 1977 (Hansman, 1985: 3, 5, 9) (Figure 2). Hansman noted 1.5 m of archaeological deposits in Trench 1, and 1 m of archaeological deposits in Trench 2, and observed that this was the depth of deposits at around 12 other locations elsewhere on the site, where the locals had been mining for building materials (Hansman, 1985: 9). The first Iraqi trench revealed disturbed deposits with traces of walling, while the second showed a first phase of architecture (Level IV), then a layer of ashy occupation with no structures (Level III), followed by two more phases of architecture (Levels I and II). The architecture consisted of mudbrick walling with stone footings, and numerous buried storage jars were associated with Levels I and II. Kennet describes the buildings as “small houses” but the plans tell a very different story, showing very substantial walling up to 2 m thick. The British team later excavated two test pits at Al-Nudud and identified a floor with a buried storage jar (King, 1991: 127–128). Both the general

sequence and the building forms noted by the Iraqis were broadly replicated in the excavations of 2010.

#### 4 | LOCATION OF 2010 EXCAVATIONS AND SITE DESCRIPTION

The location of excavations in 2010 was determined by the onset of development in the northern part of Al-Nudud. Once the vegetation was cleared, mounding and artefact scatters (pottery, glass, coins) were clearly evident. Unlike at Al-Mataf, the surface of the site was scattered with rocks, suggesting the presence of stone-built architecture. This was borne out by excavation. It was apparent that the surface had been disturbed by machinery in places, and excavation revealed that recent domestic and building rubbish had been dumped on parts of the site and spread out by bulldozers.

Four areas were selected for excavation within the threatened area (Figures 2 and 3), consisting of a trench on the highest part of the site (Trench A, 280 m<sup>2</sup>), a large trench on the downslope on the adjacent landward side (Trench B, 800 m<sup>2</sup>), a small mound on the landward edge of the site (Trench C: 15 m<sup>2</sup>) and a prominent mound on the edge of the infilled creek (Trench D, 114 m<sup>2</sup>). The underlying sandbank was reached in small areas of each trench.

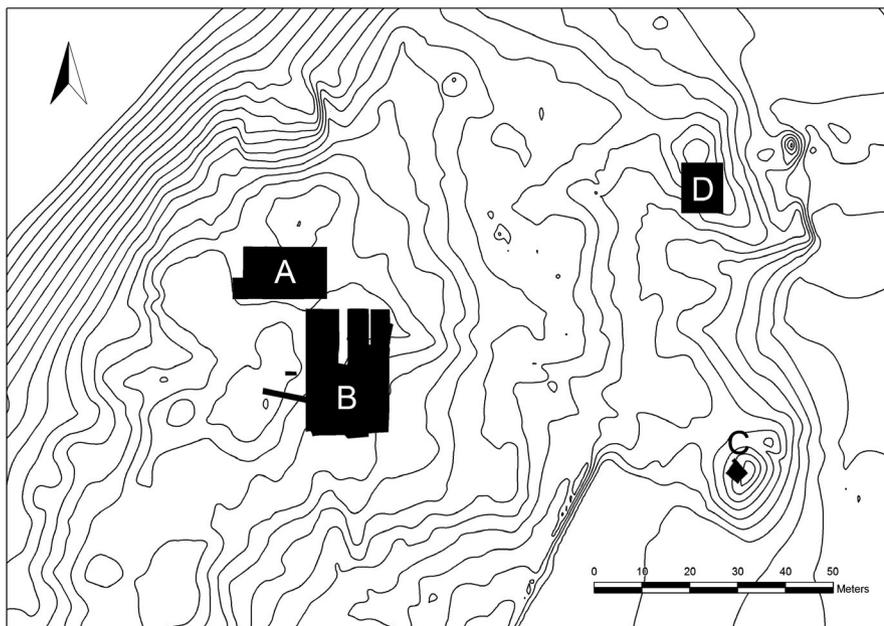
##### 4.1 | Stratigraphic and architectural record

Trenches A and B showed very similar sequences, both beginning with evidence of post-holes and transient activity on the shoreline (Trench Phases A.I and B.I, comprising *Site Period*

*1*), followed by the appearance of mudbrick architecture (A.II and B.II). The latter equate to *Site Period 2* and are referred to here as the Mudbrick Town. Complete building plans could not be obtained, as coverage was small at this depth due to time constraints and excavation was limited to following the course of the major walls, but each trench showed elongated rooms of c.10 m × 3.3 m (9 m × 2.5 m internally), subdivided in the case of Trench A, which may have comprised the buildings of courtyard houses (Figure 4). The mudbrick structures were then abandoned, but occupation continued at the site, as the mudbrick walls are cut by numerous postholes. This phase (Trench Phases A.III and B.III, equating to *Site Period 3*) recalls the period of unstructured occupation in Iraqi Trench 2.

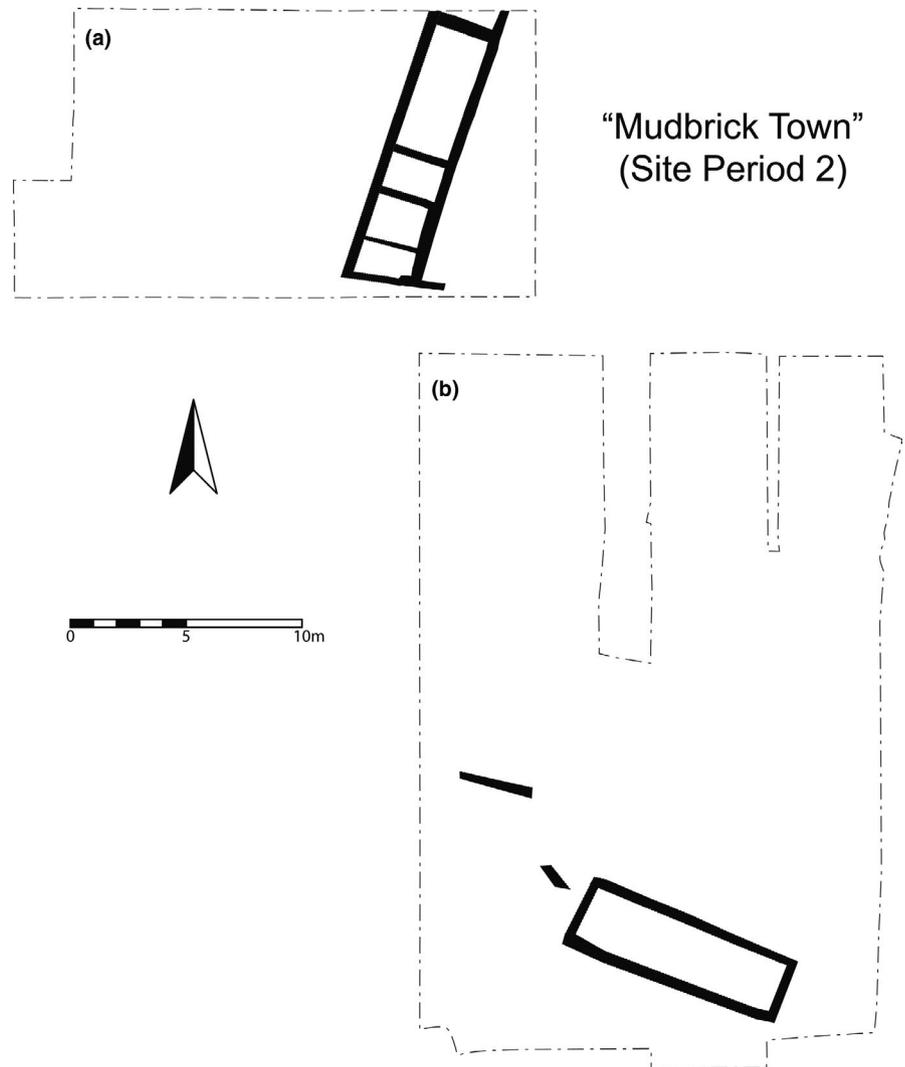
Both Trenches A and B then showed evidence of a major town with large stone buildings (*Site Period 4*, Figure 5). This marks a refoundation of the town. The stone walls had been heavily robbed out, and in many places were only evident in negative form (robber trenches surrounding floor surfaces). It is not possible to be sure whether the entirety of the walling was of stone or just the footings. Both the Iraqi and Japanese teams reported walling with stone foundations and mudbrick superstructures, the latter in Japanese Level 6 (Japanese Site Phase 2) where most of the walls were purely of mudbrick and “sandbrick” (Kennet, 2003: 105; Sasaki & Sasaki, 1992: 112). At the British excavations of the Friday Mosque, stone walling appeared only in British Phase IV, in this case with lime mortar (Kennet, 2003: 114).

It is possible to reconstruct plans of some of the major buildings, with street alignments (Figure 5). Installations included date presses, storage bins and numerous buried storage jars used as ovens (cf. Iraqi Periods I and II). Two phases of stone buildings were evident in Trench A (A.V and A.VI, the former being present mainly in the form of robbed-out walls and floors, and



**FIGURE 3** Contour plan and location of excavation trenches at Al-Nudud. Contour lines at 20 cm intervals

**FIGURE 4** Interpretive plan of the Mudbrick Town structures in Trenches A and B



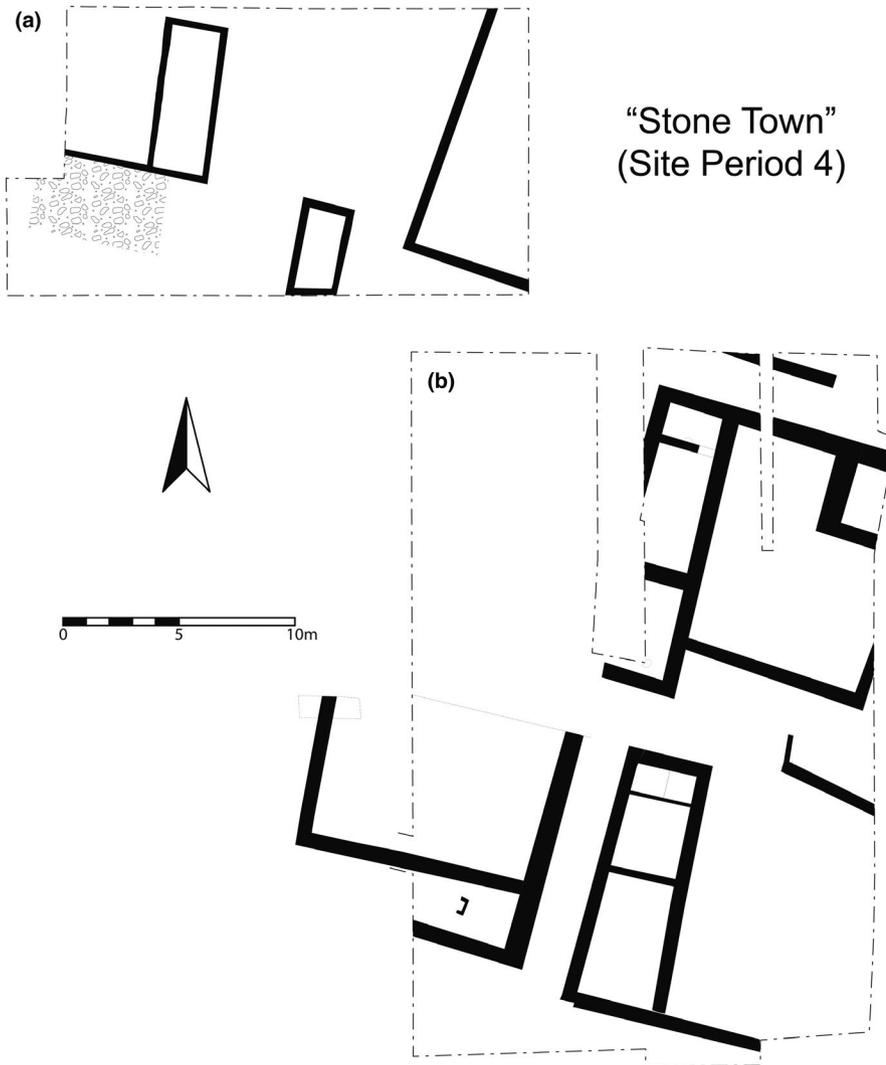
the latter as surviving patches of floor and a date press) but only one was evident in Trench B (B.IV, which contained evidence of rebuildings, but none that could be linked stratigraphically to clearly demarcate a separate phase). Together these Trench Phases comprise *Site Period 4* (Stone Town), along with D.III (see below). The reconstructable building plans showed at least two, probably three, courtyard houses in Trench B, consisting of elongated wings measuring c.12–13 m × 4 m (c.10.5 m × 3 m internally), each divided into three rooms, in one case containing traces of six square plastered bins. These flanked courtyards, one of which had a square room in its opposite corner. In Trench A, even more heavily robbed out, a similar building may have been present. Its second phase (A.VI) was associated with the date press (*madbasa*) and a separate cobbled floor mentioned above, while its first phase (A.V) was associated with at least three storage jars which had been buried and used as ovens (*tanur*).

These buildings were abandoned before the end of the fifteenth century (see below), and heavy stone robbing took place (Phases A.VII and B.V, *Site Period 5*). In Trench B, this stage at the site was characterised by further buried storage jars used as ovens, with posthole occupation. This implies

that patches of habitation still occurred among the ruins and robber pits of the old town. Finally, a phase was assigned to the heavily disturbed upper layers of the site (Phases A.VIII and B.VI, *Site Period 6*). It is impossible to say what kind of occupation was present, but very small quantities of eighteenth- and nineteenth-century material imply that habitation continued in an ephemeral manner.

The sequence was not identical in Trench D, where a post-hole occupation on a sand dune was capped by a rectangular stone building, which was then almost entirely robbed out. Radiocarbon and ceramic dating tentatively suggest that the stone building here should be associated with the early phase of the Stone Town in Trenches A and B. The radiocarbon dates also imply that it was robbed out soon after its construction, though this cannot be said with great confidence because of the small number of radiometric evaluations and high level of disturbance. Further post-hole occupation then ensued.

In Trench C, a series of midden deposits was found. These were difficult to correlate with the phases found elsewhere, and the concordance seen below is tentative and reliant on ceramic evidence.



**FIGURE 5** Interpretive plan of the Stone Town structures in Trenches A and B

	Description	Tr. A	Tr. B	Tr. C	Tr. D	
<b>Site Period 6</b>	Late disturbance	A.VIII	B.VI	C.III	D.V	
<b>Site Period 5</b>	Stone robbing and postholes	A.VII	B.V	C.II	D.IV	
<b>Site Period 4</b>	Stone Town 2	A.VI	B.IV			
	Stone Town 1	A.V			D.III	
<b>Site Period 3</b>	Mudbrick abandonment	A.IV	A.III	B.III	C.I	D.II
<b>Site Period 2</b>	Mudbrick Town		A.II	B.II		
<b>Site Period 1</b>	Shoreline activity	A.I	B.I			D.I

**TABLE 1** Site periodization and concordance of Trench Phases at Al-Nudud

## 5 | TRENCH CONCORDANCE AND SITE PERIODS

The Trench Phases were arranged into Site Periods according to Table 1. Although direct stratigraphic links between Trenches A and B were not available due to truncation by a bulldozer cut, it is certain that the Mudbrick Town phases of both were contemporary, and likewise

the Mudbrick Abandonment phase, and the Stone Town phase. Phase A.IV represents a post-hole occupation on the outskirts of the area with buildings which potentially covers both the Mudbrick Town and its abandonment phase.

Correlation with Trench D was difficult, and was based largely on pottery, supported by radiocarbon data. The dateable elements of D.II (posthole occupation) consisted of

more than 20 sherds of fourteenth-century Chinese green glazed stoneware, i.e. celadon (henceforth CGS) and a radiocarbon date calibrating to c.1280–1420 AD (see below). This radiocarbon date has a similar range to that of A.II (see below), and although pottery of any kind from A.II–A.III and B.II–B.III is rare, the available sherds are comparable to those of D.II. The levels associated with D.III (stone building, completely robbed out at the start of D.IV) contained both fourteenth- and fifteenth-century CGS, the earlier material probably being residual. It has been assigned to the same period as the Stone Town (*Site Period 4*, comprising A.V–A.VI, B.IV), which appears to begin in the late fourteenth century and then fills most of the fifteenth century, according to the Chinese-style pottery and radiocarbon dates (from B.IV). A rather early radiocarbon date from the lowest part of D.IV (c.1280–1400 BC) implies destruction of the stone building in Trench D before the start of the fifteenth century, which would place it at the earlier end of *Site Period 4*. It cannot be excluded that it derives from residual material brought up from D.II or D.III layers during stone robbing and later post-hole digging. Tentatively, we speculate that the Trench D stone building was built at the same time as the first stone buildings in Trenches A and D, but that it was relatively quickly abandoned and robbed out.

Correlation with Trench C is highly tentative as the quantity of diagnostic pottery was very low. However, the low quantity also means that if Trench C's phases have been misplaced then their assemblages are unlikely to skew the overall picture significantly.

## 6 | FINDS

There is no space for a detailed exposition of the finds. The specialist reports have been completed and will be published in the final monograph. Glassware (studied by Stéphanie Boulogne) included a range of bangles, beads and decorated tablewares, with the assemblage being most closely comparable to that of Qala'at al-Bahrain. Fifty-eight copper alloy (60 if two questionable fragments are included) and two silver coins were recovered from both surface and excavated levels (studied by Paramdip Khara, British Museum). Only 16 could be read, and most or all of these were out of context. No coins specific to Hormuz (Jarūn) were clearly identified, but these are likely to be included within the indecipherable majority of corroded copper coins. Jarūn coinage accounted for nearly a third of the coins studied by Lowick from Julfar Al-Mataf and Al-Nudud (Lowick, 1985: 95). Those from the 2010 Al-Nudud excavations which could be identified (some tentatively) included issues of the Mongol Khans of Bukhara, the Ilkhanids, the Khans of the Golden Horde, the Sultans of the Aq Qoyunlu, the Maliks of Nimruz, the Khans of Krim, a Safavid silver coin of Sulaiman I, as well as Safavid and Persian civic coinage of the seventeenth and eighteenth centuries. Identifications

and occurrences are presented in Table 2. Two coins were clearly intrusive, i.e. of late date yet found in levels of significantly earlier date, as determined by radiocarbon, ceramics and other indicators; in both cases they were from contexts cut by or very close to late disturbances (Coin 705: eighteenth-century Persian civic copper coinage; Coin 709, nineteenth-century Qajar copper; both Period A.VI, which is not later than the fifteenth century). While the coinage gives an idea of the range of commercial connections enjoyed by Julfar and Hormuz, it contributed nothing to the chronological analysis of the specific levels and will therefore not be discussed further in this report. The coinage will be fully presented in the final publication.

A comprehensive study of the ceramics was carried out by Ben Saunders (excepting the Far Eastern material, reported by Zhao Bing below), which showed an assemblage consisting largely of typical local unglazed earthenware ("Julfar Ware", ranging between 67% and 90% of the various phase assemblages) and storage jars (mainly also of local manufacture, between 2% and 14%, the variability being sensitive to whether areas with buried storage jars were uncovered in the relevant phase), along with glazed earthenwares (probably largely of Iraqi and/or Iranian manufacture, between 4% and 8%), Indian earthenwares (ranging between 1% and 5%), incised and moulded earthenwares (3% to 5%) and Far Eastern ceramics (appearing first in Phase 3, and never more than 1.7%). Archaeological bone, studied by Sheila Hamilton-Dyer, included an abundance of fish (mainly jacks, followed in frequency by tuna and then grouper) while mammal remains, studied by Jennifer Grant, overwhelmingly consisted of sheep/goat, with some cattle, dog, cat and very rare camel.

## 7 | CHINESE-STYLE CERAMICS

### 7.1 | Methodology

A total of 355 identifiable and stratified Chinese-style<sup>1</sup> ceramics are listed or discussed below, out of a total corpus of c.380 sherds. They were studied individually, photographed, drawn if appropriate, categorised by origin and type (see below) and assigned a date range by Dr Zhao Bing according to published comparisons. The basic methodology used to relate the dating evidence to the stratigraphy was to date the phases and their contexts by the latest material within them, according to standard archaeological practice. A certain amount of judgement had to be exercised regarding what constituted the latest material, in recognition that site formation processes had sometimes

<sup>1</sup>The term "Chinese-style ceramics" is borrowed from Dupoizat and Harkantiningasih (2007). This term includes both Chinese and Southeast Asian ceramics, because it is widely admitted that Southeast Asian potters seemed to refer to the exported wares from China for decorative motifs, styles and forms.

TABLE 2 Coin occurrences at Julfar Al-Mataf

	Tr. A	Tr. B	Tr. C	Tr. D	Surface
<b>Site Period 6</b>	<b>A.VIII</b> Coin 103: Persian civic copper (18th c. AD) 1 × unidentified copper	<b>B.VI</b> Coin 440: Persian civic copper (18th c. AD) Coin 444: Maliks of Nimruz (1236–1501 AD) 16 × unidentified copper	<b>C.III</b> Coin 105: Ilkhanid copper (Abaqa, 1265–1282 AD)	<b>D.V</b> Coin 465: Aq-Qoyonlu copper (1396–1508 AD) Coin 463: Khans of the Golden Horde (Uzbek Khan, 1312–1341 AD) 7 × unidentified copper	Coin 950: Khans of Krim silver (Daulat IV, 1775 AD) Coins 437, 449: Persian civic copper coinage (18th c. AD) Coin 450: Safavid silver (Sulaiman I, 1666–1694 AD) Coin 441: Khans of Bukhara (Jingis Khan, 1206–1229 AD) 6 × unidentified copper
<b>Site Period 5</b>	<b>A.VII</b> Coin 703: Persian civic copper (18th c. AD) 2 × unidentified copper	<b>B.V</b> 4 × unidentified copper	<b>C.II</b>	<b>D.IV</b> 2 × unidentified copper	
<b>Site Period 4</b>	<b>A.VI</b> Coin 709: Qajar copper (1848–1896 AD) Coin 705: Persian civic copper (18th c. AD) Coin 710: Maliks of Nimruz (1236–1501 AD) 1 × unidentified copper <b>A.V</b> Coin 799: Ilkhanid copper (Hulagu, 1256–1265 AD) 4 × unidentified copper	<b>B.IV</b> 1 × unidentified copper		<b>D.III</b>	
<b>Site Period 3</b>	<b>A.IV</b>	<b>A. III</b>	<b>C.I</b>	<b>B.III</b>	<b>D.II</b>
<b>Site Period 2</b>		<b>A.II</b>		<b>B.II</b>	
<b>Site Period 1</b>	<b>A.I</b>	<b>B.I</b>		<b>D.I</b>	

introduced intrusive material which was not detected in excavation, through extensive and repeated stone and soil-robbing from the sixteenth to the twentieth century, animal burrows, multiple post-hole occupation and recent bulldozing activities. Thus, when one or two isolated later sherds occurred in contexts which otherwise contained a much larger and homogeneous body of earlier material, and when the stratigraphic data also suggested that the context should belong to the earlier phase, then the context records were checked and if disturbance had been noted then the later sherds were discounted.

In contexts where no later disturbance could be detected, the more recent sherds were usually outnumbered by older examples. This indicates a high level of residuality, which is common in urban situations where stone-robbing, levelling and rebuilding were normal activities.

## 7.2 | Classes of material

*Chinese green glazed stoneware (CGS)*. A total of 103 sherds were found, divided into seven fabrics. Often referred to

as “celadon” in Western literature (Kennet, 2004: 49), this features a glassy green glaze over a grey stoneware body, with moulded decoration. At Al-Nudud these were mainly of Longquan manufacture (Fabrics 1–2, 4) but also Fujian (Fabric 5), Guangdong (Fabric 6), Jingdezhen (Fabric 7) and unidentified but likely South Chinese (Fabric 3). Forms included bowls and dishes. CGS makes up over 80% of the *Site Period 3* Chinese-style assemblage (none were reported from *Site Periods 1* and 2), after which it falls in frequency. The presence of high amounts of residual material in the later phases means that its drop in import quantity was probably even more pronounced than it appears.

*Chinese blue and white porcelain (CBW)*. A total of 104 sherds were present, with a slight preponderance of bowls over dishes, and a small number of box sherds. Large-scale manufacture and export are thought to have begun in the fourteenth century, and it is considered to have become the dominant Far Eastern import in the region during the sixteenth century (Kennet, 2004: 49, 51–52, 72). This is borne out by the evidence from Al-Nudud (see below). In our excavations at Al-Nudud, CBW did not appear until *Site Period*

4 (Stone Town) and increased in frequency thereafter at the expense of CGS.

*Chinese brown-black glazed stoneware (CBBS)*. Just nine sherds were present, and forms included a bowl of southern Chinese manufacture, a jarlet and a basin. It appears in each phase from *Site Period 3* onwards but is most common in the highly disturbed upper layers (*Site Period 6*).

*Chinese white porcelain (CWP)*. Six small sherds were found, including bowl and dish forms, in *Site Periods 5* (stone-robbing and post-hole occupation) and *6* (disturbed upper layers).

*Chinese ivory-creamy glazed stoneware (CIS)*. Just two sherds were found, including a bowl base, in *Site Period 6*.

*Chinese qingbai porcelain (CQB)*. Four small plain bowl sherds were found. *Qingbai* refers to a kind of fine white stoneware with a pale bluish translucent glaze.

*Chinese enamelled porcelain (CEP)*. One dish rim with red enamelled decoration was found, of the late fifteenth or early sixteenth century, in a *Site Period 6* layer.

*Chinese painted porcelain (CPP)*. One example was found, of the twentieth century, intrusively in a *Site Period 5* context.

*Southeast Asian green glazed stoneware (SEAGS)*. Seventy-six such sherds were found, in five different fabrics. These were of Thai origin (Fabrics 1–2 and probably 3) and Burmese origin (Fabric 5 and probably 4). The forms were mainly dishes with some bowls (nine sherds in Fabrics 3 and 4). They were found in all periods between *Site Periods 3* and *6*, increasing in frequency. The examples in *Site Period 3* may be intrusive.

*Vietnamese brown painted stoneware (VBPS)*. Just one base sherd of this type was identified, associated with *Site Period 4*.

*Vietnamese blue and white ware (VBW)*. Six bowl and dish sherds of this type were found, in *Site Periods 3, 4* and *6*. The example in *Site Period 3* may be intrusive. Kennet records that this type was found in the upper layers at Al-Mataf, with material of the sixteenth and seventeenth century (Kennet, 2004: 51).

*Southeast Asian white earthenware (SEAW)*. Seven dish sherds of this distinctive type were found, with opaque white glaze and a hard, fine reddish body. It was strongly associated with *Site Period 6* (disturbed upper layers). This type is generally considered to be Burmese but kiln evidence is awaited. At Al-Mataf it was associated with Phase III and referred to as Far Eastern White Glaze (Kennet, 2004).

“*Storage Jar Sherds*”. This category was used to include storage jar sherds of both Chinese and Southeast Asian origin, totalling 35 sherds. We argue against using the term “Martaban” as it lacks precise definition.

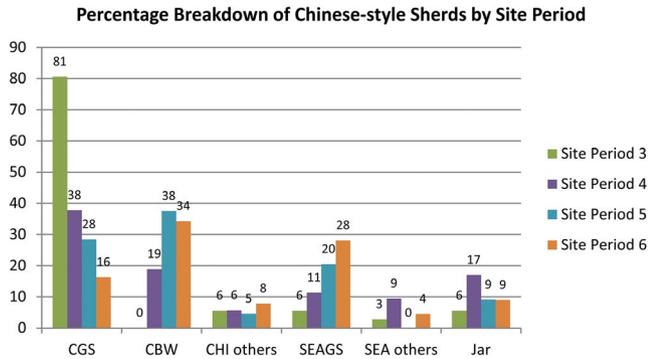
### 7.3 | Occurrence of Chinese-style classes

No Chinese-style ceramics were associated with *Site Periods 1* and *2*. This does not indicate that there were no imports at that time, as the assemblage was very small for those levels due to limited excavation. Table 3 shows the breakdown of different types by *Site Period*, while Figure 6 combines the categories within “CHI Others” and “SEA others” and gives the percentage contribution of each combined category. Figure 7 shows the percentage contribution of all Chinese-style material to each period assemblage.

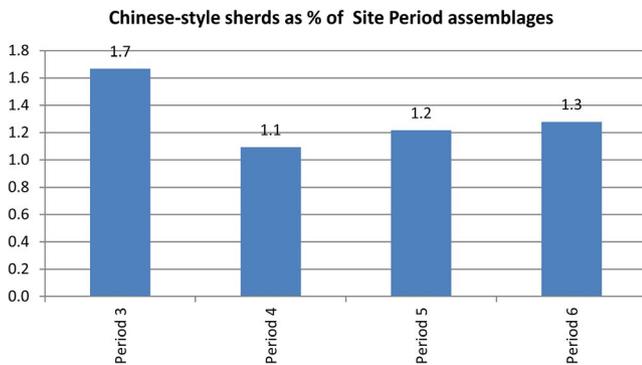
**TABLE 3** Occurrence of Chinese-style ceramics, by *Site Period*. See Figures 6 and 7 for percentage values

	CGS	CBW	CHI others	SEAGS	SEA others	Jar	Total
<b>Site Period 6</b>	29	61	6 CBBS 1 CQB 4 CWP 1 CEP 2 CIS	50	6 SEAW 2 VBW	16	178
<b>Site Period 5</b>	25	33	1 CBBS 2 CWP 1 CPP	18		8	88
<b>Site Period 4</b>	20	10	2 CQB 1 CBBS	6	1 SEAW 3 VBW 1 VBPS	9	53
<b>Site Period 3</b>	29		1 CQB 1 CBBS	2	1 VBW	2	36
<b>Total</b>	103	104	23	76	14	35	355

CGS, Chinese green glazed stoneware; CBW, Chinese blue and white porcelain; CHI, Chinese; CBBS, Chinese brown-black glazed stoneware; CQB, Chinese qingbai porcelain; CWP, Chinese white porcelain; CEP, Chinese enamelled porcelain; CIS, Chinese ivory-creamy glazed stoneware; CPP, Chinese painted porcelain; SEAGS, Southeast Asian green glazed stoneware; SEA, Southeast Asian; SEAW, Southeast Asian white earthenware; VBW, Vietnamese blue and white ware; VBPS, Vietnamese brown painted stoneware



**FIGURE 6** Breakdown of Chinese-style types within each Site Period



**FIGURE 7** Occurrence of Chinese-style sherds within the whole assemblage

## 8 | DATING EVIDENCE BY PHASE

### 8.1 | Mudbrick Town and subsequent Abandonment/Posthole Phase (Periods 2 and 3)

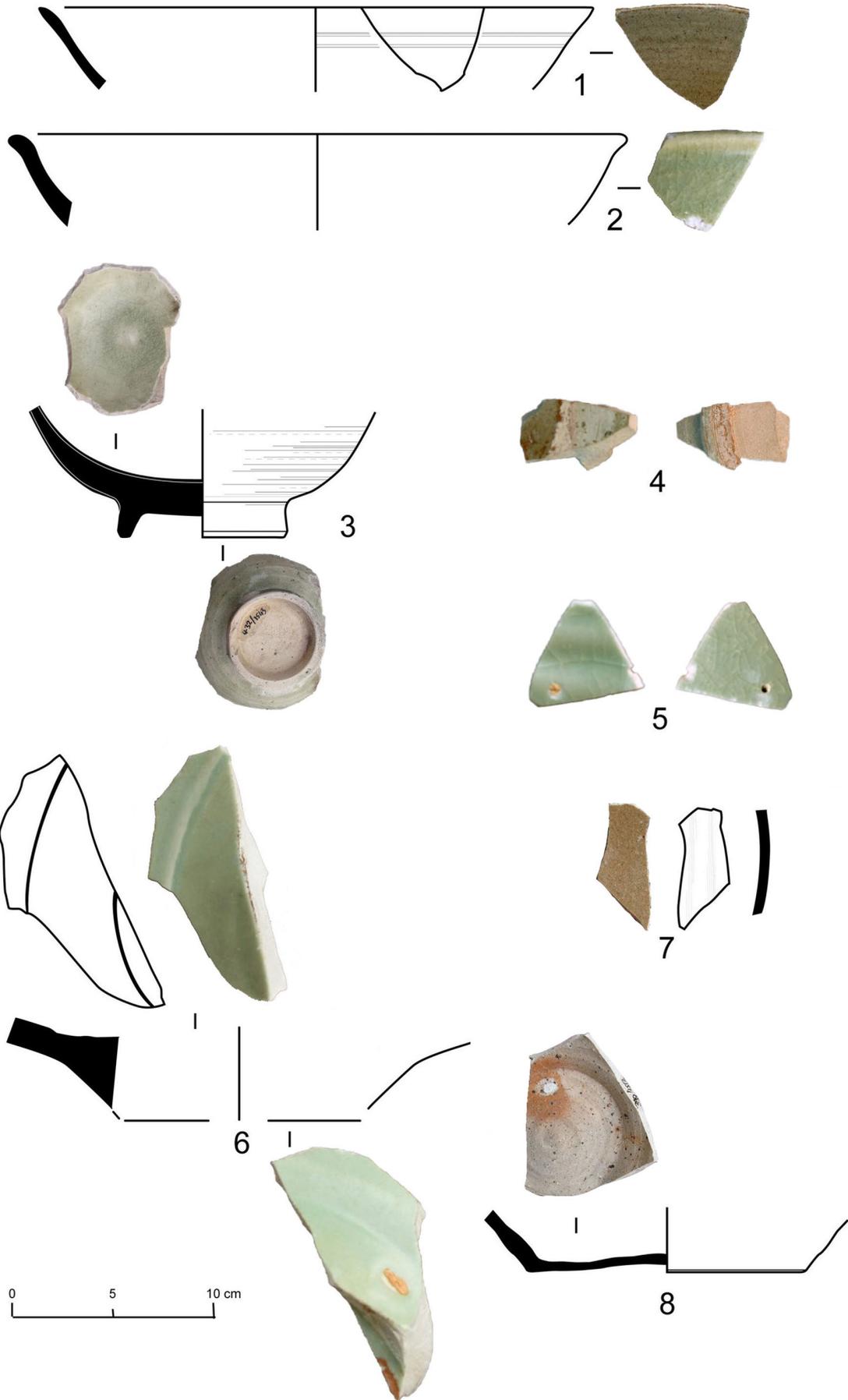
Sherds considered typical of the assemblage of each phase are shown in Figures 8–14. Most of the 36 sherds from the earliest period with Chinese-style pottery (*Site Period 3*, Mudbrick Town Abandonment) were small and unidentifiable beyond general class. There was a near-monopoly of Chinese green-glazed stoneware (CGS) from Longquan. Several small sherds show features dateable to the end of the thirteenth/mid-fourteenth century while at least one could be earlier, while others are of the later half of the fourteenth century. The latter include a bowl in CGS with a stacking ring on the inside (Nudud type CGSB 9, Figure

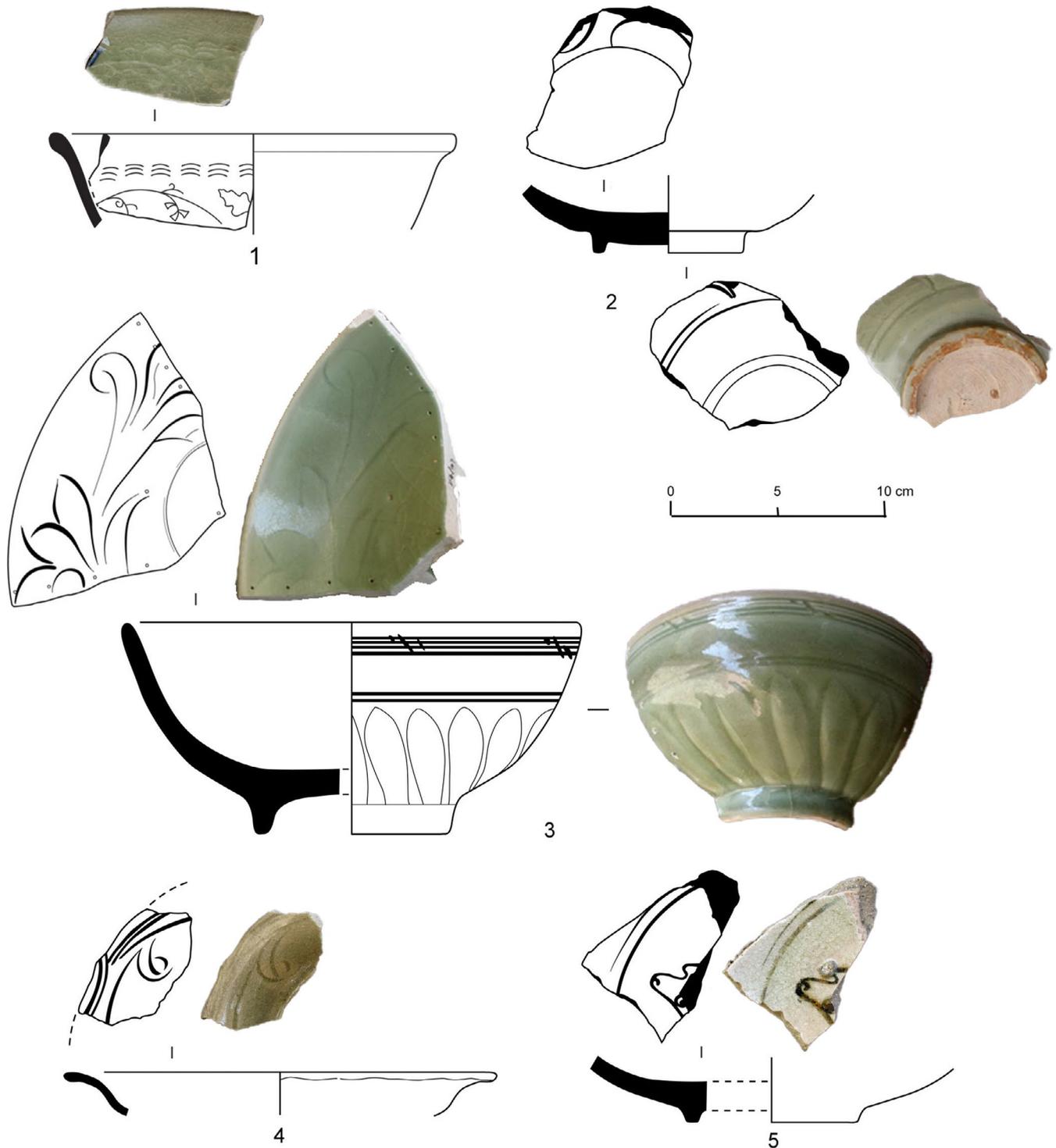
8.4). Meanwhile, certain absences should also be signalled, namely Dehua ware and Qingbai ware, both with moulded patterns, which are the main composites of the Chinese assemblage imported into the western Indian Ocean from the mid-thirteenth to the mid-fourteenth centuries. Sherds of Dehua ware were found locally at Kush. While this absence at Al-Nudud may be partly due to the limited area of excavation, it also suggests that the whole period of occupation and abandonment of the Mudbrick Town occurred mainly during the mid and latter half of the fourteenth century. However, the presence of a sherd possibly dateable to the twelfth–thirteenth century (Figure 8.1) may indicate earlier occupation within or beneath the excavated levels, while a small amount (five sherds) of CGS (celadon) from around the site allows either a late thirteenth or an early fourteenth century date (Zhao, Carter, & Velde, 2015: 153). The radiocarbon dates from *Site Period 3* just allow the possibility that the abandonment phase goes as far back as the late thirteenth century, but those from *Site Period 2* indicate an early to mid-fourteenth century occupation of the Mudbrick Town (see below).

### 8.2 | Stone Town (Period 4)

The occupation of the Stone Town began no earlier than the second half of the fourteenth century according to the Chinese-style ceramics. Within the two phases of its earlier stage (A.V and D.III), CGS remains the main component, while evidence of other classes such as Chinese *qingbai* (CBQ), Chinese ivory-creamy glazed stoneware (CIS) and Vietnamese underglazed brown painted stoneware (VBP) are also recorded (Figure 9). Dating evidence is provided by a type of CGS bowl with carved lotus petals overlapping the lower part of the outside (Nudud type CGSB7, Figure 9.3). Examples have been excavated at the Longquan kiln sites of Yuankou 源口 (Dabai'an 大白岸 area) and Fengdongyan (Dayao 大窑 village), both dated to the latter half of the fourteenth century (Xu, 2008: diapo. 91; Yanjiusuo, 2005: 331, 407, fig. 240-7, 9). A kind of small dish with a foliated rim and carved floral scroll on the inside (Nudud type CGSD4, in fabric 6, Figure 9.4) is comparable in form and decoration with examples from Fengdongyan, of the second to third quarter of the fifteenth century (State Administration of Cultural Heritage, 2006:

**FIGURE 8** Assemblage of main types for phases A.III, A.IV, D.II (*Site Period 2–3*). 1: JAN 2067/1513, type CGSB 1, fabric 3 (Fujian origin?), 12th–13th century. 2: JAN 380-1512, bowl rim in CGS, 14th century, Longquan. 3: JAN 432/1543, type CGSB 10, 13th/14th century, Fujian Province (e.g. Longmen kiln, Anxi district). 4: JAN 18/150, type CGSB 9, fabric 1, mid/late half of the 14th century, Longquan. 5: JAN 162/161, dish body sherd of type CGSD 2, fabric 1, 14th century, Longquan kiln. 6: JAN 430/1543, dish base in CGS, 14th/early 15th century, Longquan. 7: JAN 385/1512, dish body sherd in CGS, 14th century, Longquan. 8: JAN 390/1512, unglazed base sherd in coarse stoneware, maybe type CBBSJ 1 (Chinese brown-black glazed stoneware, jarlet, type 1), 14th/15th century, Southern China kiln

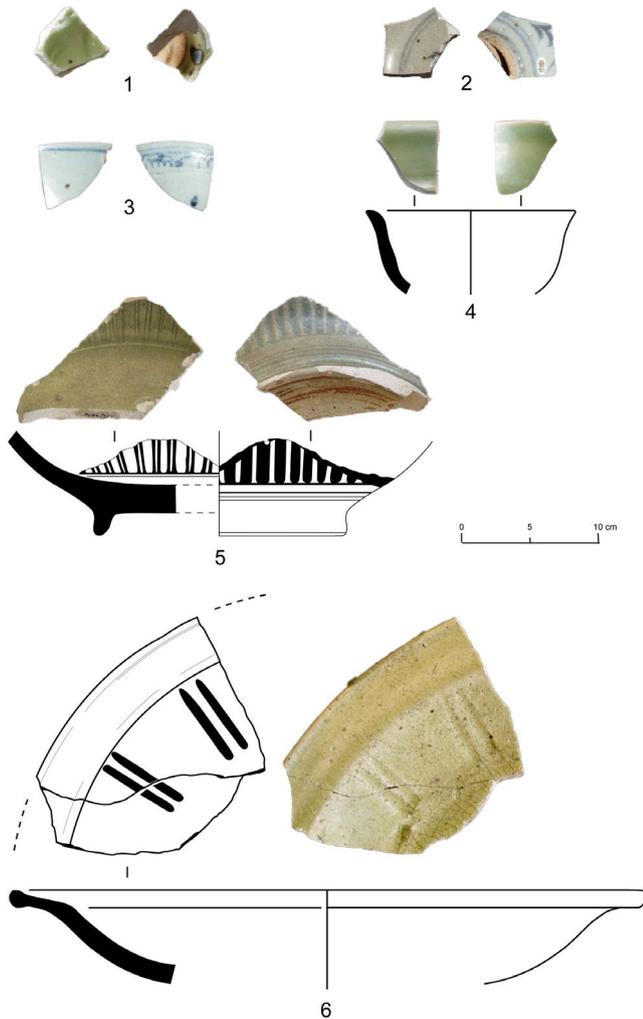




**FIGURE 9** Assemblage of main types for phases A.V and D.III (Site Period 4, Stone Town 1). 1: JAN 423/1562, type CGSB 3, fabric 2, moulded pattern in tiny relief, 1st half/3rd quarter of 14th c., Longquan. 2: JAN 157/146, type CGSB 4, fabric 1, carved floral pattern on both sides, 14th century, Longquan. 3: JAN 154/147, type CGSB 7, fabric 1, carved floral pattern on both side, carved lotus panels overlapping the lower part of the outside, later 14th century/early 15th century, Longquan. 4: JAN 142/110, type CGSD 4, fabric 6, carved floral pattern on the inside, mid/latter half of the 15th century, Huiyang kiln (Guangdong Province)? 5: JAN 155/146, type VBPSB 1 (Vietnamese stoneware with underglazed brown painting, bowl, type 1), later half of the 14th century/early 15th century, Northern Vietnamese

181, top right). A CGS bowl with well-spaced incised floral scroll patterns on both sides (Nudud type CGSB4, Figure 9.2), and sherds of ivory-creamy glazed stoneware, are

likely to be slightly earlier. Regarding the VBP, the single bowl base sherd had a floral spray sketchily painted in iron brown under a milky-white crazed glaze on the inner side,



**FIGURE 10** Assemblage of phase B.IV (Site Period 4, Stone Town 1–2). 1: 1410/528, CGS, latter half of 14th century, Longquan. 2: JAN 1403/554, CBW base sherd, coarse fabric, greyish glaze, Mid/latter half of the 15th century, Jingdezhen. 3: JAN 1404/564, CBW bowl rim, later half of the 15th/early 16th century, Jingdezhen. 4: JAN 1400/563, type CGSB 12, first half of 15th century, Longquan. 5: JAN 1406/564, type SEAGSDB 1 (SE Asian green glazed stoneware, dish, base type 1), 2nd/3rd quarter of 15th century, Sawankhalok, Thailand. 6: JAN 1415/558+1461/558, type SEAGSDR 6 (Southeast Asian green glazed stoneware, dish, rim type 6), later half of 15th century, coarse fabric (SEAGS fabric 5), Twante, Burma

with five triangular spur marks (Figure 9.5). The fabric is coarse and light brown. Similar wasters of stacked bowls were found at the kiln sites of Dai La and Da Ton, while evidence from the kiln sites of Bat Trang, Kim Lan and Van Yen in Vietnam has also been published (Bui & Long, 2001: 118–201, 204; Morimoto, 1997: fig. 4). Large quantities of these sherds have been found at trading sites in Japan and in Southeast Asia, and a similar sherd was found at Fostat (Old Cairo) (Stevenson & Guy, 1997: 54, fig. 8). The Nudud example can be dated roughly to the mid-fourteenth–early fifteenth century. In sum, the assemblage of

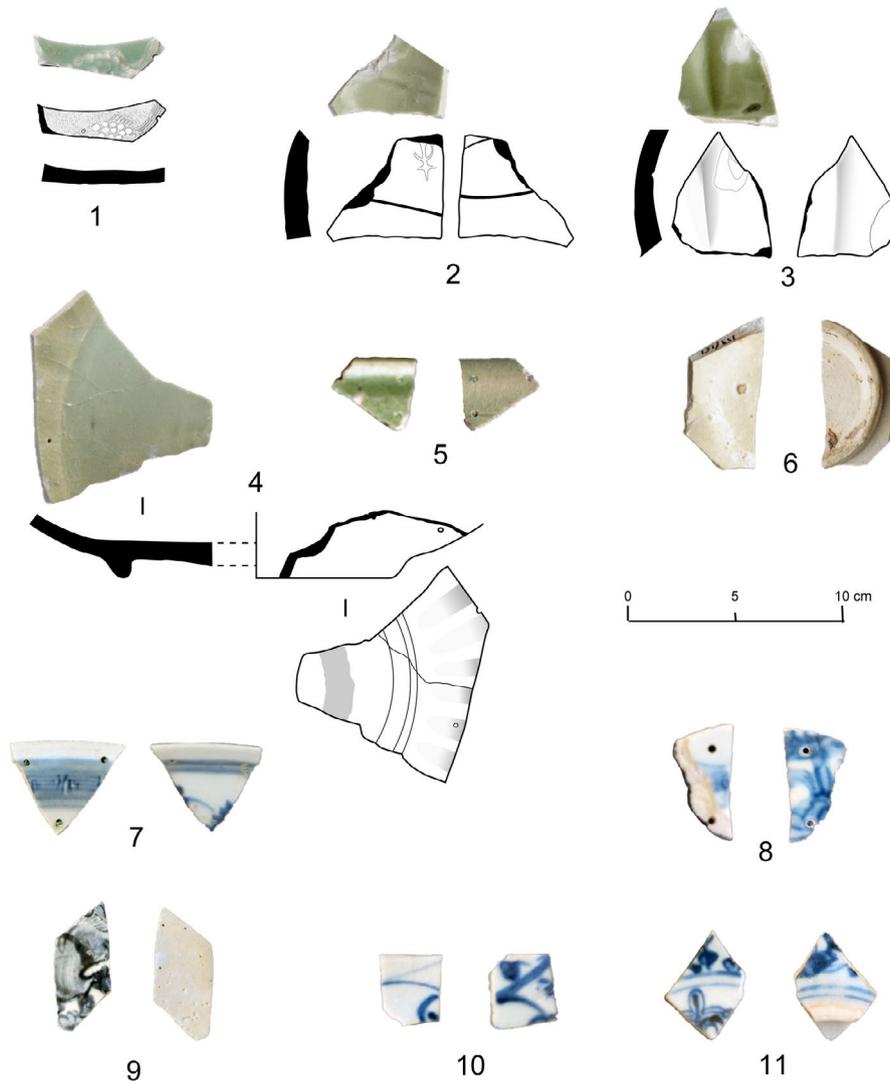
the early phase of the Stone Town contains material ranging from the mid/latter half of the fourteenth century to the mid-fifteenth century. The evidence of numerous sherds with rivet holes indicates that Chinese ceramics were kept for a long period.

Later material is found with the second phase of the Stone Town, including numerically significant quantities of Chinese blue and white (CBW). In Trench B, the earlier and later stages of the Stone Town could not be separated, but the CBW sherds found there appear to relate to the later part of the occupation, being bowls with clouds or spirals painted in dark blue (Nudud type CBWB2, Figure 10.3) of the second to third quarter of the fifteenth century. External dating evidence is available from Jingdezhen, dated tombs in China, the Ming Palace in Nanjing, and Penny's Bay in Hong Kong (Lam, 1986: 147, fig. 2; 1996: 147, fig. 2; Ouyang, 1999: 79, fig. 4). Also found was Southeast Asian green glazed stoneware (SEAGS) of the second or third quarter of the fifteenth century (Figures 10.5–6 and 11.5); Southeast Asian opaque white glazed earthenware (SEAWG), which is usually dated to the latter half of the fifteenth century/early sixteenth century (not illustrated); a sherd of Vietnamese blue-and-white (not illustrated); and a selection of mainly or entirely residual CGS. The six dateable CBW sherds from Trench A mainly predate the late fifteenth century, or the last quarter of the fifteenth century, though two dish fragments could be either late fifteenth or early sixteenth century (Figure 11.10–11). A date from the mid to the late fifteenth century is therefore suggested for the Stone Town 2 phase.

### 8.3 | Abandonment, stone-robbing and post-hole occupation (Period 5)

The abandonment, stone-robbing and post-hole occupation (*Period 5*) that followed the Stone Town is dominated by CBW, including bowls with scroll lotus on the exterior and jewelled pattern on the inside (Nudud type CBWB 6), bowls with tortoise pattern on the exterior and with large reserved star-shaped heads against a dense background of stylised fish roe on the inside (type CBWB 9) and saucer-shaped with dense blue painting on both sides (Chinese blue-and-white bowl), CBWD 1 (Chinese blue-and-white). CGS declines in favour of the Southeast Asian stonewares.

Phases B.V and A.VII share almost the same assemblage and dating, except that Phase B.V contains a handful of later CBW sherds indicating a more prolonged occupation there. Trench A (Figure 12) shows fewer such later elements, as does Phase D.IV (Figure 13). For the latter, dating evidence of the mid-to-late fifteenth century is given by a Southeast Asian green glazed stoneware bowl with moulded gluten pattern overlapping the outside (Figure 13.5), along with limited amounts



**FIGURE 11** Assemblage of phase A.VI (Site Period 4, Stone Town 2). 1: JAN 160/153, type CGSD 1, fabric 1, later half of the 13th/early 14th century, Longquan. 2: JAN 150/129, type CGSB 8, fabric 2, later half of the 14th century, Longquan. 3: JAN 165/149, type CGSD 2, fabric 1, later half of the 14th/early 15th century, Longquan. 4: JAN 148/129+147/129, type CGSD 2, fabric 1, late 14th/early 15th century, Longquan. 5: JAN 823/0032, type SEAGSBR 1 (Southeast Asian green glazed stoneware bowl, rim type 1), fabric 3, mid/latter half of the 15th century, Northern Thailand. 6: JAN159/151, type CISB 1 (Chinese ivory-creamy glazed stoneware, bowl, type 1), light buff fabric, 12th–14th century, Southern kiln site. 7: JAN 829/0032, type CBWB 2, mid–3rd quarter of 15th century, Jingdezhen. 8: JAN 827/0032, small body sherd of type CBWB 8, mid/latter half of 15th century, Jingdezhen. 9: JAN 824/0032, small dish base (without foot ring), CBW, mid/latter half of 15th century, Jingdezhen? 10: JAN 826/0032, small body sherd of type CBWD 3, later half of the 15th/early 16th century, Jingdezhen. 11: JAN 825/0032, small body sherd of type CBWD 3, later half of the 15th/early 16th century, Jingdezhen

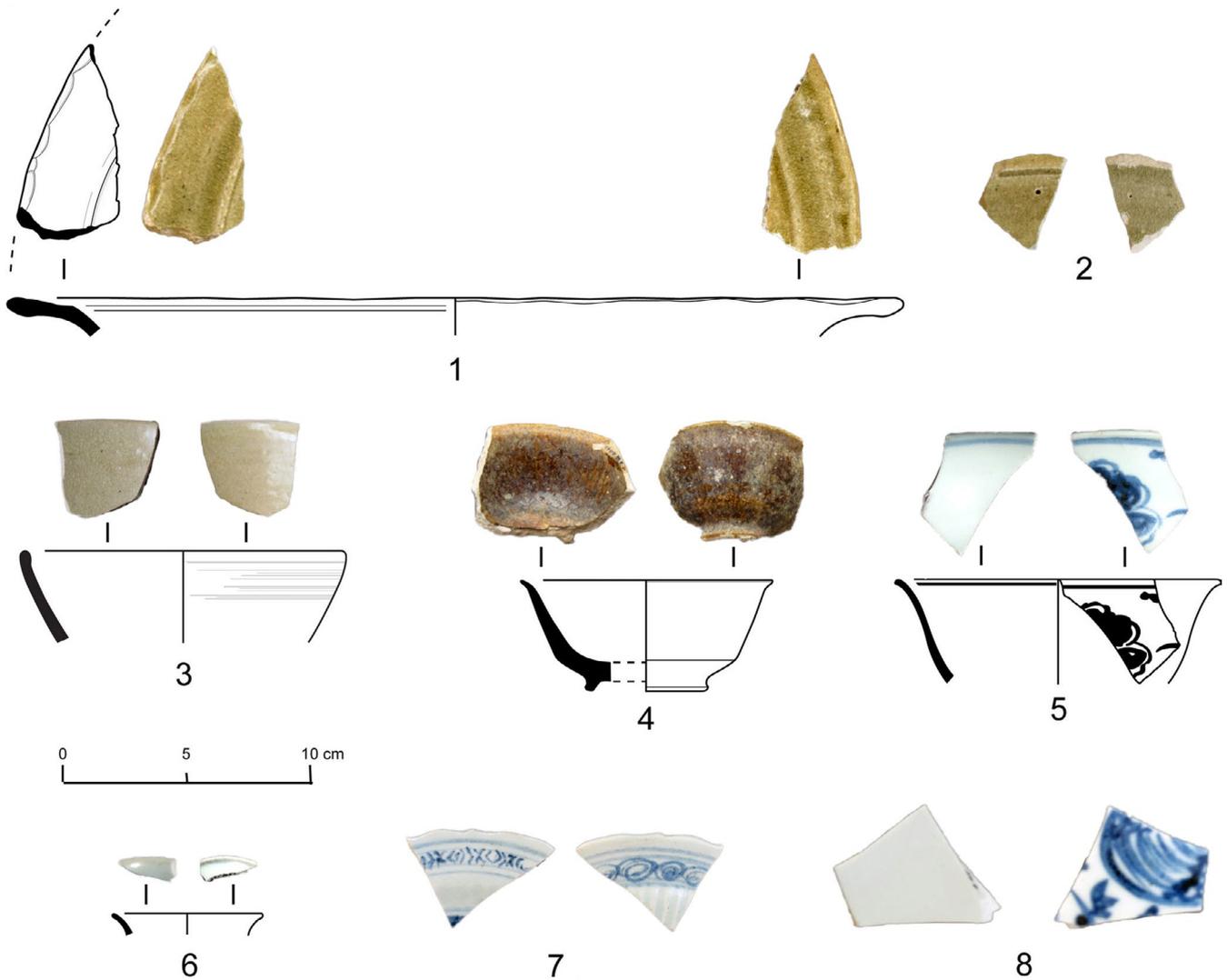
of CBW of the very late fifteenth or early sixteenth century, including one with a crown motif indicating a private commission for a European client (likely Portuguese) (Figure 13.6). Late sherds from B.V (Figure 14) include three of the second quarter of the sixteenth century, and Kraak dishes of the end of the sixteenth/beginning of the seventeenth century. Residual material from earlier occupations is common (e.g. Figure 13: 1–2).

These differences in the trenches suggests uneven occupation across the site, with little or limited activity around Trench D during the sixteenth century, and a focus in B at the end of the sixteenth century or start of the seventeenth. The Chinese-style assemblage from the sixteenth century onwards is full of lacunae,

most notably the near absence of enamelled porcelain for the beginning of the sixteenth, and the lack of Zhangzhou ware for the later sixteenth and the seventeenth centuries. Furthermore, the sixteenth/seventeenth-century CBW sherds are chronologically vastly dispersed. This attests to a punctuated and scrappy occupation during the sixteenth and early seventeenth century.

#### 8.4 | Disturbed upper levels (Period 6)

Within the later CBW corpus associated with *Period 5* (Figure 14) and subsequent heavily disturbed occupation levels (*Period 6*), a



**FIGURE 12** Assemblage of Phase A.VII (Site Period 5, Stone Robbing and Postholes). 1: JAN 121/33, type SEAGSDR 3 (SE Asian green glazed stoneware, dish, rim 3), medium brown, fabric 3, mid/latter half of the 15th century, Southern Burmese kiln site? 2: JAN 151/132, dish body sherd in SE Asian green glazed stoneware, fabric 4, yellowish green glaze, later half of 15th century, Southern Burmese kiln site? 3: JAN 122/33, type SEAGSBR 4 (SE Asian green glazed stoneware, bowl, rim type 4), coarse fabric 4, later half of 15th/early 16th century, Twante, Burma. 4: JAN 1107/33, type CBBSB 1 (Chinese brown-black glazed stoneware, bowl, type 1), 15th century, Shiwan kiln site, Guangdong Province. 5: JAN 133/33, CBW rim sherd, late 15th/16th century, Jingdezhen. 6: JAN 134/33, very small CBW bowl rim sherd, end 15th/early 16th century, Jingdezhen. 7: JAN 132/33, type CBWD 2, later half of the 15th/early 16th century, Jingdezhen. 8: JAN 124/33, type CBWD 1, later half of the 15th/early 16th century, Jingdezhen

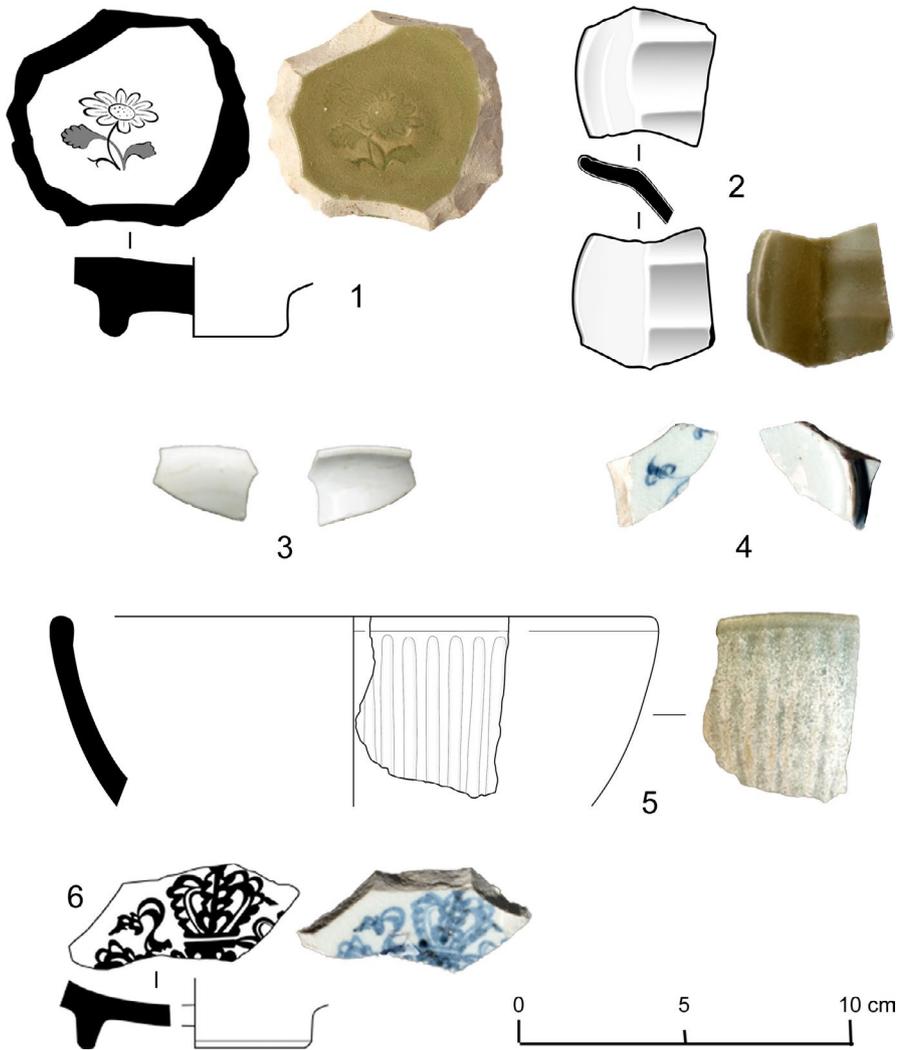
total of 15 sherds can be dated to c.1510–1520 onwards. It was at this point in history that the Portuguese penetrated into Asian maritime space. Recent explorations of the coast of Guangdong and Zhejiang reveal the beginnings of an illicit trade in Chinese ceramics, conducted by the Portuguese, as early as the 1520s.

*Period 6* has not been given full attention here but certain elements (e.g. the comparative abundance of SEAW in these disturbed upper deposits) suggest that discrete sixteenth–seventeenth century occupation levels may have existed prior to the late twentieth century disturbance, albeit most likely ephemeral and patchy. Coin evidence of the seventeenth–nineteenth century implies that sporadic light occupation continued after the sixteenth century right up to the nineteenth.

## 9 | RADIOCARBON AND ABSOLUTE DATING

A series of seven radiocarbon dates were taken from Trenches A, B and D (Table 4). They were analysed by Beta Analytic and calibrated according to the terrestrial dataset using INTCAL04.

The suggested date ranges for each *Site Period*, derived from a synthesis of the radiocarbon data and Chinese-style ceramics, is presented in Table 5. Note that, for *Site Period 4* (Stone Town), there are two CBW sherds which could be either late fifteenth or early sixteenth century; however, the calibrated ranges of two radiocarbon dates from ovens at the very top of the Stone Town sequence (Contexts 663 and



**FIGURE 13** Assemblage of Phase D.IV (Site Period 5, Stone Robbing and Postholes). 1: JAN 420/1503, type CGSB 8, mid/latter half of 14th century, Longquan. 2: JAN 419/1503, type CGSD, 14th century, Longquan. 3: JAN 1669/1521, bowl rim in Chinese white porcelain glazed stoneware, 15th–16th century, Jingdezhen. 4: JAN 411/1544, small CBW bowl base, second half of 15th/early 16th century, Jingdezhen. 5: JAN 404/1503, type SEAGSBR 2 (SE Asian green stoneware, bowl, rim type 2), 15th century, Thai? 6: JAN 412/1544, type CBWB 5, 4th quarter of the 15th/early 16th century, Jingdezhen

669) are not later than the mid-to-late fifteenth century. We therefore consider it likely that occupation of the Stone Town ended some time in the second half of the fifteenth century, i.e. *before* the arrival of the Portuguese in the early sixteenth century.

## 10 | CONCORDANCE WITH DATING OF JAPANESE JULFAR AND BRITISH JULFAR

### 10.1 | Japanese sequence and dating at Julfar al-Mataf

The dating of the seven main occupation phases in the Japanese sequence has been refined over the years, but the latest analysis is presented in Table 6 according to Horii's presentation of Sasaki (Horii, 2008: 87; Sasaki, 2006). The Japanese sequence was originally divided into seven levels, two of which were eventually merged (Levels 1–2) and one of which was split into four units (Levels 6a1, 6a2, 6b, 6c), all of which were then reorganised into the seven phases. The

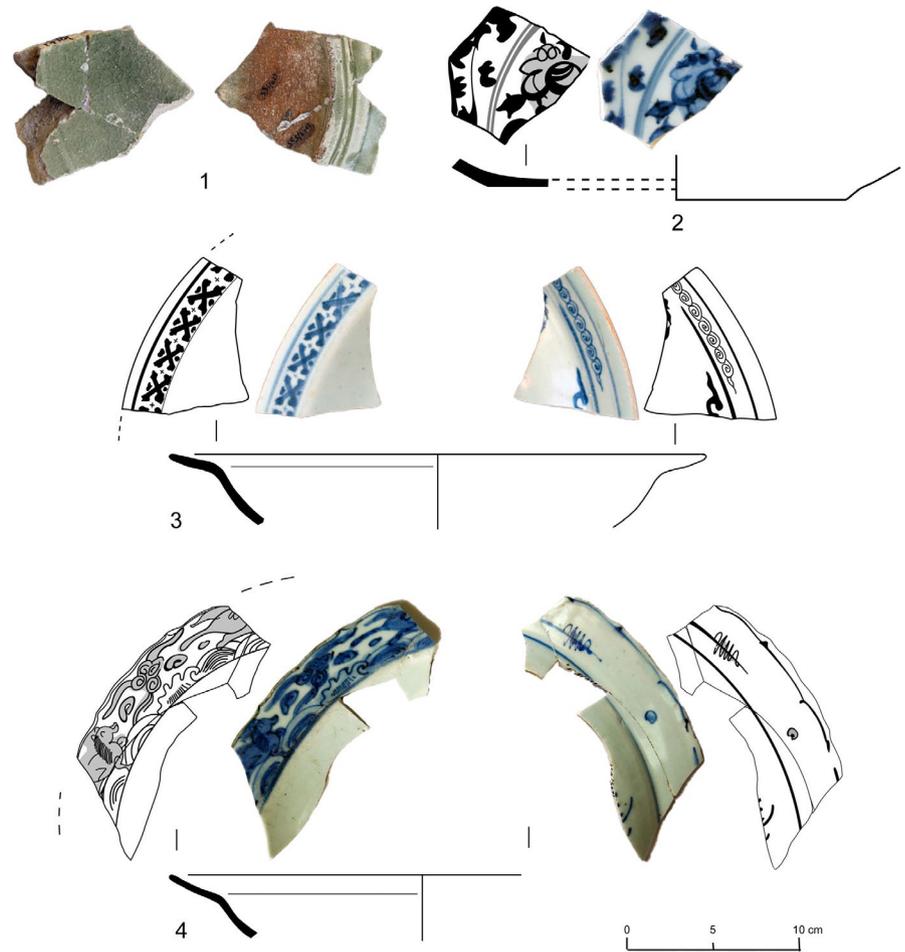
phasing of the levels has changed over the years (e.g. Kennet, 2003: 109; cf. Sasaki, 2006: 67–69). To reduce confusion, therefore, the original levels are used here as the main stratigraphic descriptors, arranged according to the most recent analysis, as follows.

Note that the dating provided by the Japanese above is presented as given, but a previous report mentions pottery of the early fourteenth rather than the mid-fourteenth century, as well as sixteenth-century pottery in the surface layer (above Levels 1–2) (Sasaki & Sasaki, 1992: 107, 119). These mentions are taken into consideration in the concordance presented below.

### 10.2 | British sequence and dating at Julfar al-Mataf

The developmental sequence and dating of the British Julfar Al-Mataf excavations (henceforth BJ), which focused on a large mosque in the centre of Al-Mataf and an adjacent occupation area, has not been fully published, but has been summarised by Kennet (2003: 115, table 3). The former dating

**FIGURE 14** Assemblage of phase B.V (Site Period 5, Stone Robbing and Postholes). 1: JAN 1709+1710+1711/555, type SEAGSDB 4 (Southeast Asian green glazed stoneware, dish, base type 4), fabric 3, later 15th/early 16th century, Twante, Burma. 2: JAN 1436/611, type CBWD 3, late 15th–early 16th century, Jingdezhen. 3: JAN 1412/610, type CBWD 4, circa 1517–1550. 4: JAN 1674/521+1675/521+1391/503, type CBWD 5, circa 1550–1600, Jingdezhen



**TABLE 4** Radiocarbon dates from Al-Nudud

Beta lab code	Sample	Context	Site Period/ Trench Phase	Material	Conventional radiocarbon age BP	1 sigma	2 sigma
293296	ND10559	559	Per.5/ B.V	Charred material	<b>350 ± 40</b>	1460–1540, 1540–1630	1450–1650
293297	ND10663	663	Per. 4/B.IV	Charred material	<b>530 ± 30</b>	1400–1430	1330–1340, 1400–1440
293298	ND10669	669	Per. 4/B.IV	Charred material	<b>430 ± 30</b>	1440–1460	1430–1480
293299	ND10164	164	Per. 2/A.II	Charred material	<b>560 ± 30</b>	1330–1340, 1400–1420	1310–1360, 1390–1430
293300	ND101514C	1514c	Per. 4/D.IVb	Charred material	<b>520 ± 30</b>	1410–1430	1400–1440
293302	ND101544	1544	Per. 4/D.IVa	Charred material	<b>650 ± 40</b>	1290–1320, 1350–1390	1280–1400
293301	ND101543	1543	Per. 3/D.IIc	Charred material	<b>630 ± 50</b>	1290–1400	1280–1420

relies largely on Chinese-style ceramics identified by Regina Krahl (Kennet, 2003: 116, table 4; 2004: 18, table 5). We propose revisions to the dating of the British sequence as follows (Table 7).

Our dating of the BJ Mosque broadly follows Kennet's (2003) chronology, except for greater revisions for the last two phases. We base our revisions on the following:

- BJ VI: Horii's identification of at least three late sixteenth- and one seventeenth-century sherds from BJ VI (Horii, 2008, Appendix, nos. 2, 18, 38, and 48), coupled with the dating suggested below for BJ V.
- BJ V: the distinctively Omani architecture of Mosque V (square in shape with side entrances) combined with historical evidence for Omani occupation starting in 1633

**TABLE 5** Suggested date ranges of the Site Periods based on synthesis of radiocarbon and ceramic data

	Description	Date range	C14 dates (start and end of 2 $\sigma$ ranges)	Summary of dating evidence from Chinese-style ceramics
<b>Site Period 6</b>	Late occupation and disturbance	17th to 20th c.		
<b>Site Period 5</b>	Stone robbing and postholes	late 15th to early 17th c.	350 $\pm$ 40: 1450–1650 (B.V)	– CBW dominant, of late 15th to early 17th c. – SEAGS of late 15th and 16th c. Chronological lacunae.
<b>Site Period 4</b>	Stone Town 2 Stone Town 1	mid to late 15th c. 2nd half of 14th to mid 15th c.	430 $\pm$ 30: 1430–1480 (B.IV) 530 $\pm$ 30: 1330–1440 (B.IV) 520 $\pm$ 30: 1400–1440 (D.IVb) 650 $\pm$ 40: 1280–1400 (D.IVa)	– CBW from mid to latter half of 15th/early 16 <sup>th</sup> c. – SE Asian wares (SEAGS, SEAWE) of 2nd–3rd quarter of 15th c. and late 15th/early 16th c. – CGS of late 14th c. to mid/late 15th c.
<b>Site Period 3</b>	Mudbrick Abandonment	From early or mid to 2nd half of 14th c.	560 $\pm$ 30: 1310–1430 (A.II)	– CGS dominant – Lack of Qingbai Moulded Whiteware and Dehua Moulded Whiteware weakly implies less likely to be 13th or early 14th c.
<b>Site Period 2</b>	Mudbrick Town		630 $\pm$ 50: 1280–1420 (D.II)	
<b>Site Period 1</b>	Shoreline activity	Late 13th (?) to early or mid 14th c.		– Rare and residual material potentially of 13th and early 14th c. date

Japanese Level	Japanese Phase 2006	Architecture	Date
1 & 2	7	"Stone and clay" house (decline)	Late 15th c.
3	6	"Stone and clay" house with a courtyard (decline)	Mid–late 15th c.
4	5	Open urban plan with postholes (decline?), mud-brick houses with stone foundation	Early 15th c.
5	4	Open urban plan with pitting (decline?), mud-brick houses with stone foundation	Early 15th c.
6a1–6a2	3	Dense urban plan, mud-brick houses, some with stone foundations ( <b>urban apogee</b> )	Late 14th c.
6b–c	2	Mud-brick houses, some with stone foundations	Late 14th c.
7	1	Post-hole occupation	Mid–late 14th c.

**TABLE 6** Dating and characterisation of levels and phases at Japanese Julfar Al-Mataf excavations

(see below). Seventeenth-century sherds are not identified in BJ V (Kennet, 2003), but by this time we consider urban occupation to have ceased, with activity confined to the fort, meaning that very little new material was deposited, with the BJ V assemblage therefore derived from reworked older deposits.

- BJ IV: the presence of at least three Far Eastern sherds of the sixteenth century, ranging from the early to the late sixteenth century (Horii, 2008: Appendix, nos. 31, 41, 50), and up to 22 of them according to Krahl (Kennet, 2003: table 4). This is in agreement with Kennet's dating.

- BJ III: the presence of at least 14 sherds of the sixteenth century, as well as a wide range of fourteenth- and fifteenth-century sherds, indicate a potentially long range running into the sixteenth century (Kennet, 2003: 116, table 4; Kennet, 2004: 18, table 5; Horii, 2008: Appendix). Early sixteenth-century sherds from BJ IV (above) imply BJ III cannot continue later than the early sixteenth century. Horii identified one late sixteenth-century/early seventeenth-century sherd (Horii, 2008: Appendix cat. 42), but this is a single outlying occurrence, and so may be residual.

**TABLE 7** Characterisation and dating of British Julfar Al-Mataf sequence according to Kennet (2003, 2004), with suggested revisions

BJ Periods	BJ phase	Kennet description	Kennet dating 2003, 2004	Revised dating
5: Abandonment	Rec	Top soil		
4: Post-Urban	VI	Post-hole phase	mid 16th?	17th and poss. later
3: Decline	V	Mosque declines	16th	17th (after 1633)
	IV	Mosque grows; 1st mortar mosque; Occupation area out of use	16th	16th
2: Peak	III	Mosque grows	early 15th to 16th	15th–early 16th
1: Growth	II	Mosque grows	14th/15th	14th–15th
	I	1st mudbrick mosque	14th/15th	14th c.
	Pre	Earliest settlement	early–mid 14th	early–mid 14th

- BJ II: the presence of at least nine fifteenth-century sherds in BJ II according to Krahl (Kennet, 2003, table 4), indicates occupation into the fifteenth century, but the majority of sherds are compatible with the fourteenth century.
- BJ I and Pre: these phases are difficult to date due to the paucity and indeterminate range of their Chinese ceramics. The likely fourteenth-century occupation of part of BJ II (above) implies that BJ I did not go into the fifteenth century.

The occupation of BJ appears lengthy, and according to the unpublished excavation reports from the British excavations (lodged at the Department of Antiquities, Ras Al-Khaimah), there were at least three building phases in BJ III, confirming a prolonged usage, as recognised by Kennet (2003: 113). We consider the sixteenth-century sherds most likely relate to the final subphase of BJ III and the time of abandonment described by Kennet (2003: 113). We note also the presence of two sixteenth-century sherds in the BJ II mosque according to Kennet (2003), but, like him, we believe these are likely to be intrusive. They do not appear to be mentioned by Horii, who was only able to examine a subset of the whole corpus (Horii, 2008, Appendix 1), and it unclear whether Horii dated them differently or whether they were absent from Horii's sample.

Historical evidence can be introduced for the dating of BJ V to the seventeenth century. The completely new square design, with entrance from the side, is characteristic of the Ibadī mosques of Oman (Bandopadhyay & Sibley, 2003; Velde, forthcoming). The Omanis took the area of Julfar from the Persians in 1633 (Slot, 1993: 111; Hansman, 1985: 10), and although we consider the activities of Ruy Freyre, the Persians and the Omanis in Julfar between 1621 and 1633 to have largely taken place around modern Ras Al-Khaimah (see below), we believe it likely that the Omanis also occupied the fortress in the heart of the old urban centre of Julfar

Al-Mataf, and restored the mosque for the use of its garrison. The postholes of BJ VI over the ruined mosque attest to the prolonged ephemeral or seasonal occupation that followed the abandonment of the Al-Mataf fortress and mosque, after a relatively brief Omani occupation.

## 11 | CERAMICS FROM FRENCH EXCAVATIONS AT JULFAR AL-MATAF

A study of the Chinese-style ceramics from the French excavations indicates a very similar date range to that identified by Kennet in the British trenches. The French ceramics ran from the fourteenth to the late sixteenth century, with the majority of imports dating from the middle of the fifteenth to the end of the sixteenth century (Pirazzoli-t'Serstevens, 2003: 5, 9). Although there is a preliminary report on the French excavations (Hardy-Guilbert, 1991), no information is given which relates the ceramics to the stratigraphic and architectural record.

## 12 | CONCORDANCE OF BRITISH AND JAPANESE SEQUENCES WITH AL-NUDUD

It is abundantly clear that the British sequence encompasses a much longer and later occupation than the Japanese sequence. For his own concordance between the Japanese and British areas, Kennet made an explicit assumption that the initial post-hole occupations of the British and Japanese trenches were contemporary, as well as the final abandonment of the stone and mudbrick buildings (Kennet, 2003: 114). He therefore ties the start and finish of the urban sequences together. In fact, although their beginnings may be broadly contemporary, the later phases in the British trenches (sixteenth–seventeenth century) are clearly significantly later than all the Japanese phases,

**TABLE 8** Suggested concordance and absolute dating of the Al-Nudud, British Al-Mataf and Japanese Al-Mataf sequences

	Al-Nudud	Characterisation	Date range	Al-Mataf Japanese excavations	Al-Mataf British excavations
<b>Sporadic or seasonal</b>	ND Period 6	Late occupation and disturbance	<b>17th to 20th c.</b>	"Surface layer"	BJ Rec BJ VI BJ V
<b>Concentration around Al-Mataf centre (mosque &amp; fort)</b>	ND Period 5	Stone robbing and postholes	<b>Late 15th to early 17th c.</b>		BJ IV BJ III (in ruins)
<b>Overall peak</b>	ND Period 4	Stone Town 2	<b>Mid-15th c. to late 15th c.</b>	Level 1–2 Level 3	BJ III (I–III) BJ II
		Stone Town 1	<b>2nd half of 14th c. to mid-15th c.</b>	Level 4 Level 5 Level 6a–c	BJ I
<b>Urban foundation around Nudud &amp; JJ</b>	ND Period 3	Mudbrick Abandonment	<b>Mid and 2nd half of 14th c.</b>	Level 7 (postholes)	Pre (inferred from residual pottery)
	ND Period 2	Mudbrick Town			
<b>Shoreline activity</b>	ND Period 1	Shoreline activity	<b>Early to mid-14th c., poss. late 13th c. (inferred from residual pottery)</b>	Inferred from residual pottery	

including the final scrappy occupation in Japanese Levels 1–2, abandoned before the end of the fifteenth century.

Table 8 shows the concordance which would result from the suggested redating of the British Julfar sequence. The Japanese dating has been accepted at face value according to the most recent analyses (Horii, 2008; Sasaki, 2006), and the ends of the British and Japanese sequences have been decoupled. The appearance of CBW has *not* been used as a point of concordance, as it appears throughout the Japanese sequence (Sasaki, 2006: 76, table 4), and neither has the appearance of stone architecture.

## 13 | CONCLUSIONS

### 13.1 | Growth, florescence and decline of Julfar

The results of excavations at Al-Nudud, combined with a reconsideration of the concordance between the British and Japanese sequences at Al-Mataf, significantly modifies our understanding of the development of Julfar. Kennet hypothesised that an urban foundation in the mid-fourteenth century occurred simultaneously across Al-Mataf but excluded Al-Nudud (his "Growth" phase, comprising BJ I–II and JJ 7–6c), followed by an urban climax across both Al-Mataf and Al-Nudud in the fifteenth century ("Peak", being BJ III and JJ 6a–b). Instead, we see a patchier development, and perhaps a gradual movement in the focus of settlement from the southwest to the northeast between the fourteenth and the

seventeenth century, i.e. from Al-Nudud towards the British trenches at Al-Mataf, with a longer urban climax in the late fourteenth–fifteenth century, as indicated at Japanese Julfar and Al-Nudud. Disregarding possible shoreline activity prior to the mid-fourteenth century, these developments may be summarised as follows:

- 'Arish (palm-frond) occupation at Al-Nudud may start as early as the late thirteenth century, though a fourteenth century beginning is more likely.
- The earliest evidence for a heavily built urban environment is at Al-Nudud, from the early or mid-fourteenth century, with the building of the Mudbrick Town. Close by across the creek, a dense settlement of 'arish huts is found in the area of the Japanese excavations. Together these constitute the earliest town of Julfar, logically clustered on each side of the mouth of the creek. Further excavation would be required to establish whether the area of the British trench was significantly occupied at this time.
- Following an abandonment and a subsequent 'arish level at Al-Nudud, probably in the later fourteenth century, the town was refounded. Impressive stone and mudbrick architecture and a dense urban plan were found both at Al-Nudud and across the creek in the Japanese area. Buildings appeared in the centre of Al-Mataf, in the area of British excavations, culminating in the refoundation and impressive expansion of the mosque in the British trench (early in BJ III), and most likely the construction of the adjacent fort. Excavation around the mosque was insufficient to

determine whether the architecture was as extensive and urbanised as in the Japanese and Al-Nudud areas, but it seems likely that this represents the apogee of the site, from the late fourteenth to the mid/late fifteenth century, when much or all of Al-Mataf and Al-Nudud was fully urbanised and covered with densely packed mudbrick and stone buildings.

- Prior to the end of the fifteenth century the oldest centre of the town (Al-Nudud and the Japanese area), was abandoned permanently to stone-robbing and ephemeral occupation. The mosque and occupation area in the British trenches (BJ III in its later stages), and the adjacent fort excavated by the French team, remained in use as Al-Nudud and Japanese Al-Mataf were largely abandoned. It is likely that occupation had contracted to the area around the mosque.
- The fort was rebuilt, presumably by the kingdom of Hormuz, which at least since the 1520s governed Julfar directly (Velde, forthcoming). They also rebuilt the mosque in stone (BJ IV) and with a new corrected direction to Mecca. The repeated repair of the nearby fort, evident from unpublished section drawings of the French excavations, implies that this part of Al-Mataf functioned as a fortified outpost, a status maintained into the early seventeenth century.
- In the first half of the seventeenth century, a brief Omani military occupation, presumably focused on and around the Al-Mataf fort, was accompanied by the rebuilding of the mosque according to a new plan (BJ V) (Velde, forthcoming).
- Sporadic ephemeral or seasonal occupation of Al-Nudud and perhaps Al-Mataf continued into later centuries.

Some historical and geomorphological factors may be tentatively attached to these broad phases of development. The urban foundation around the early or mid-fourteenth century may be connected to the triumph of Hormuz over its trading rival Qays in 1330 (Piacentini, & Maestri, 2009: 165). Julfar was to become a prized Hormuzi possession, and its foundation at the new site (Al-Nudud and Japanese Al-Mataf) may be connected to their establishment of power bases and trading centres on the Arabian shores. The silting up of the lagoonal system that previously connected the site of Kush to the sea may also have been significant (Morley, Carter, & Velde, 2011: 225; Velde, 2012: 217–218).

No specific historical event can yet be attached to the abandonment phase of the Mudbrick Town at Al-Nudud (mid or late fourteenth century), or to the start of the late fourteenth to mid/late fifteenth-century refoundation and apogee marked by the Stone Town (*Period 4*) at Al-Nudud, and by the dense urban plan of Japanese Level 6. There appears to be a dearth of historical sources on Julfar relating to this period of florescence.

The ending of significant occupation at Al-Nudud and in the Japanese trenches at Al-Mataf during the second half of the fifteenth century may coincide with the Battle of Julfar in 1475, though historical evidence appears to indicate that destructive warfare did not take place in the town itself (Piacentini, & Velde, 2009: 330–331). Historical sources appear to refer to two attacks by Julfar and Lar against Hormuz, in a brief episode of rebellion a quarter of a century later (1499 and 1508), which may have prompted destructive retaliation (Velde, forthcoming). Alternatively, or additionally, the utility of the creek may have been reduced by siltation and/or by a low-amplitude drop in sea-level connected to the ending of the Medieval Warm Period (Morley, Carter, & Velde, 2011: 229–230), causing the abandonment of that area.

Archaeological evidence for continuing occupation in the centre of Al-Mataf in the sixteenth century is limited to the mosque and fort, and the absence of large amounts of seventeenth-century pottery in both the fort sequence and the BJ VI and “Rec” layers of the British trenches, implies that the town at Al-Mataf had then become an isolated military installation.

### 13.2 | A historical afterlife: Julfar in the sixteenth- to twentieth-century sources

Historical sources continue to attest to Julfar despite the loss of its urban character. In the early sixteenth century, di Varthema and Barbosa respectively refer to Julfar as “a district which is most excellent and abounding in everything” and “a very large town” further on from Daba (Dibba) with many merchants and sailors (Barbosa, 1866: 34; di Varthema, 1863: 93). Barbosa then refers to “Raçolhiman”, i.e. Ras Al-Khaimah, but the lack of evidence for urban occupation at Julfar Al-Mataf leads us to believe that his text does not prove the existence of two large contemporary towns (Julfar and Ras Al-Khaimah). Barbosa’s direct geographical knowledge of the east and west coasts of this part of Arabia is demonstrably poor (for example locating Kalba on the wrong coast), and we speculate that he learned separately of Ras Al-Khaimah and Julfar, which was perhaps still used by his informants to refer to the town of Julfar district, despite its relocation. No subsequent sources refer to it as a very major town except Thevet (1575), but he appears to have lifted his description almost verbatim from Barbosa (Thevet, 1575: 329).

Relevant cartographic evidence includes Ribeiro’s map of 1530, which shows both Julfar and Ras Al-Khaimah (reflecting either a limited occupation that followed the main urban phases, or the lingering memory of the former location of the town); and Gastaldi’s map of 1561, which shows only Ras Al-Khaimah (Roccalima) (Couto et al., 2006, maps 17, 29).

Finally, the historical texts indicate that Julfar remained a significant pearling centre throughout the sixteenth century, according to Balbi (c.1580) and Teixeira (ca. 1601) (Pinto,

1962: 120–121; Sinclair, 1902: 176). Tax yields are given for the pearl fishery of Julfar, available for the years 1515 and 1541–3 (Aubin, 1973a: 233–234; 1973b: 217; Dias Farinha, 2009: 192, n. 16). We interpret all these attestations as references to the district rather than the abandoned town of Al-Mataf and Al-Nudud, or perhaps to an ongoing tendency of European observers to refer to the main town of the district (now Ras Al-Khaimah) according to its ancient name. This is confirmed by instructions issued by the Governor of Bombay to the commanders of the expedition to Ras Al-Khaimah in 1809, which refer to Ras Al-Khaimah as the principal sea-port of the “principality” of “Sir or Julfar” (Al Qasimi, 1986: 129). A mention of Julfar in 1818 by Captain Taylor as a pearling town of the Shihhu tribe remains anomalous (Hughes Thomas, 1985: 14), given that no other contemporary observers refer to Julfar as a town, and that it is absent from maps and sketches of the time. It is feasible that Taylor mistook a seasonal encampment of the pearling season for a permanent settlement. The existence of such ephemeral occupations is indicated by the seventeenth-, eighteenth- and nineteenth-century coins and ceramics found at Al-Nudud.

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**How to cite this article:** Carter RA, Zhao B, Lane K, Velde C. The rise and ruin of a medieval port town: A reconsideration of the development of Julfar. *Arab Arch Epig.* 2020;00:1–23. <https://doi.org/10.1111/aae.12162>