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URBAN SETTLEMENTS? ELITE STRONGHOLDS? MOBILE CENTRES?

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# KHOREZMIAN WALLED SITES OF THE SEVENTH CENTURY BC–FOURTH CENTURY AD: URBAN SETTLEMENTS? ELITE STRONGHOLDS? MOBILE CENTRES?

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## *Abstract*

Previous interpretations have reconstructed late Iron Age Khorezm as a sedentary, urban, agrarian state, and its largest fortified sites as urban centres following the hydraulic state model. This paper surveys the assumptions underlying this interpretation, and examines the archaeological evidence for urban settlements in relation to the fortified enclosures or *kalas*. A closer examination of these fortified sites reveals that they may have played a different role from that of centralised settlements. The lack of evidence for significant permanent, intra-mural housing and other factors requires the consideration of a greater influence of the steppe world and mobile strategies in the oasis during this period.

## *Keywords*

Central Asia; fortress; mobility; settlement; urbanism

## I. INTRODUCTION

The late Iron Age landscape of the Central Asian oasis of Khorezm (Chorasmia) was modified by large canals and monumentalised by the presence of hundreds of fortified enclosure sites, known in Central Asia as *kalas*. This combination of fortresses and canals led to Tolstov's reconstruction of the seventh-century BC to fourth-century AD Khorezmian Iron Age as a centralised, hierarchical, sedentary and primarily agrarian state.<sup>1</sup> Tolstov did, however, comment on the affinities between the Khorezmians and other nomadic groups,<sup>2</sup> maintaining that they had a tribal organisation in their society,<sup>3</sup> and made much of their association with the Massagetae. Tolstov agreed with Tarn that the Chorasmii were one of five tribes that made up the confederation of the Massagetae prior to the c. sixth–fifth

century BC.<sup>4</sup> According to Tolstov, this tribal group of Chorasmii developed into an early state by the fourth–third centuries BC.<sup>5</sup> Tolstov thus characterised Khorezm as both a tribally organised affiliate of the steppe nomadic world and an urbanised, centralised state. The contradictions and assumptions underlying this reconstruction will be examined here.

The disparity between these two characterisations also extended to the *kalas*. The fortresses themselves have been reconstructed as the urban settlements and military installations of a centralised state, yet there has been no detailed examination of urbanism in ancient Khorezm. This paper examines the role of the *kalas* in Tolstov's model of the Khorezmian polity, focusing on the archaeological evidence relating to settlement and occupation. It will show that there are very few examples of large-scale domestic occupation from excavated, intra-mural contexts dating to the ancient period in Khorezm, but there are many well-preserved ancient examples of extra-mural dwellings and farm-houses contemporaneous with the main fortified enclosures that were often located in their immediate vicinity. This suggests that the fortified sites were not

<sup>1</sup> E.g. see Tolstov 1948b: 103; 1953: 129, 134; 1960: 11. S.P. Tolstov led the Khorezm Archaeological-Ethnographical Expedition (known as the Khorezm Expedition) from 1937 until around 1969 (Khuzhanizayev 2006: 26). His work, and that of the Khorezm Expedition, was highly influential and well regarded (e.g. Lamberg-Karlovsky 1994: 399; Stride *et al.* 2009: 74–75), and Tolstov's publications still remain the seminal works of Khorezmian archaeology.

<sup>2</sup> Tolstov 1948b: 104–06; 1953: 114ff.

<sup>3</sup> Tolstov 1948b: 115.

<sup>4</sup> Based on Strabo 1944: XI.viii.8; Tarn 1951: 81; Tolstov 1948b: 103.

<sup>5</sup> Tolstov 1948a: 54, 341.

walled cities but part of a larger, more dispersed settlement regime.

This paper therefore questions the established interpretation of the *kalas* as urban settlements of a sedentary, agrarian state and the notion of a highly politicised correlation between the irrigation systems and fortresses. The interpretation of the *kalas* as sedentary urban centres has been largely based on three assumptions: i) that fortresses in the presence of canals must mean that this was a Wittfogel-type hydraulic state; ii) that an oasis location means a sedentary, agricultural socio-economic context; and iii) that large fortified sites must have been the urban settlements of the sedentary state. This paper will examine all three assumptions and present a survey of the currently available archaeological evidence for settlement and urbanism within and around these sites. Data is drawn primarily from published archaeological reports and monographs from the Soviet Khorezm Expedition,<sup>6</sup> members of the Institute of History, Archaeology and Ethnology, Academy of Sciences of the Republic of Uzbekistan, Karakalpakstan branch, and more recent work by the joint Karakalpak-Australian Archaeological Expedition (K.A.A.E.).<sup>7</sup>

Key questions relate to the nature of the ancient Khorezmian *kalas* and whether their characterisation as fortified urban settlements is reflected in the archaeological record. Are other conceptualisations more apt, such as formalised and defended nomadic campsites, elite compounds and refuges or perhaps something transitional between the two, for example centres for a mixed pastoral and agricultural population? This re-examination of the Khorezmian fortified sites and their relationships to other landscape features adds to the recent scholarship reconceptualising Khorezm as more clearly part of the Eurasian mobile world of the late Iron Age.<sup>8</sup>

## II. BACKGROUND

Khorezm, as it is known in the Russian literature,<sup>9</sup> or Chorasmia (or Choresmia) as it was known from the classical authors,<sup>10</sup> was located in the delta of the Amu Darya River (ancient Oxus) which today is divided among the modern countries of the semi-autonomous Republic of Karakalpakstan, western Uzbekistan and northern Turkmenistan. This delta forms an oasis zone amid the deserts of the Kara Kum and Kyzyl Kum and the abundant alluvium deposited by the river has long ensured the fertility of this delta (Fig. 1). There is very little precipitation in the region, making dry farming impossible, and ancient Khorezm relied completely upon the waters of the Amu Darya. The climate is also characterised by very hot summers and very cold winters. The oasis environment is a flat, arid alluvial plain formed by dry river beds, interspersed with tracts of sandy desert penetrating deep into the oasis zones, forming “micro-oases”.<sup>11</sup> The oasis is bordered by desert to the south and east and the high, arid cliffs of the Ustyurt plateau to the west, and once had the Aral Sea and its marshes to the north. The majority of fortresses are sited on flat irrigated plain but some also take advantage of rocky outcrops and high land wherever possible.

The Iron Age Khorezmian archaeological culture characterised by the fortified enclosures first appears around the seventh–sixth century BC,<sup>12</sup> and has been divided into three periods: “Archaic” (seventh–fourth century BC), “Kanguii” (fourth–first century BC) and “Kushan” (first–fourth century AD).<sup>13</sup> Khorezmian periodisation is relative and based on material culture, primarily Vorob’eva’s ceramic typology and bronze arrowheads for the earlier periods.<sup>14</sup> The dating of the early “Archaic” period is relatively well established via ceramic parallels that are more securely dated outside Khorezm, but the subsequent periods up to the

<sup>6</sup> See n.1 above.

<sup>7</sup> The K.A.A.E. is directed by Prof. V.N. Yagodin (Institute of History, Archaeology and Ethnology, Academy of Sciences of the Republic of Uzbekistan, Karakalpakstan branch) and Prof. A.V.G. Betts (Archaeology Department of the University of Sydney). Major financial support for the project has been provided by the Australian Research Council with additional support from the National Geographic Society and a volunteer programme

<sup>8</sup> E.g. Baker Brite 2011; Kidd 2011; Kidd and Betts 2010; Kidd *et al.* 2012.

<sup>9</sup> E.g. Rapoport *et al.* 2000: 25; Tolstov 1948a: *passim*.

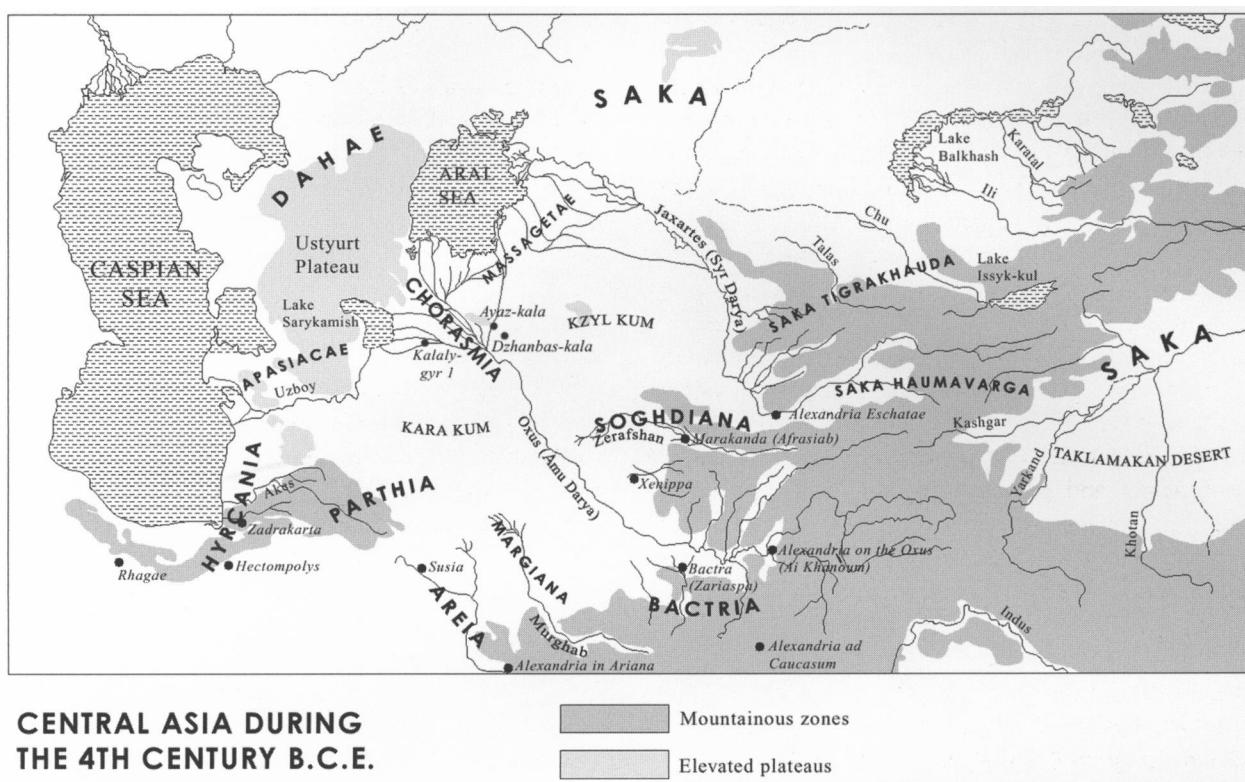
<sup>10</sup> Arrian 1971: IV.15.1–5.; Strabo 1944: XI.viii.8; Herodotus 1985: iii.117; Curtius 1946: 7.4.6.

<sup>11</sup> See Baker Brite 2011 for a socio-ecological discussion of conditions in the Khorezm oasis in antiquity.

<sup>12</sup> Tolstov 1948a: 77.

<sup>13</sup> Kidd *et al.* 2004: 1, 3, table 1; Helms and Yagodin 1997: 45–47; Khuzhaniyazov 2006: 27–28.

<sup>14</sup> Rapoport and Lapirov-Skoblo 1963: 141–43; Vorob’eva 1959; see comments in Baker Brite 2011: 83–85; Helms in Khuzhaniyazov 2006: 14–15; Helms and Yagodin 1997: 45–47, 49; Helms *et al.* 2001: 136–37.



*Fig. 1. Map of Central Asia during the fourth century BC (after Bregel 2003: map 3).*

second century AD are less certain.<sup>15</sup> Since the late 1990s there has been the addition of absolute dating provided by the Karakalpak-Australian Archaeological Expedition (K.A.A.E.).<sup>16</sup>

The dating of the fortified sites is therefore problematic and varies from site to site. All seventh-century BC–fourth-century AD Khorezmian sites have been dated based primarily on a combination of ceramics (but also coins and arrowheads) from a variety of stratified and unstratified contexts,<sup>17</sup> and on architectural style.<sup>18</sup> The exceptions are Akchakhan-kala (Kazakly-yatkan), Tash-kyrman-tepe and Kara-tepe for which there are absolute dates.<sup>19</sup> Integration of the recent

calibrated absolute dates and the ceramic typology has not yet been achieved. The relative nature of the chronology limits analysis of Khorezmian ancient period sites, including the study presented here. It is compounded in some cases by the variable level of archaeological investigation at Khorezmian sites —some have been thoroughly studied with years of surface and sub-surface investigations, e.g. Kuizely-gyr; and others have only been examined via surface surveys and one or two excavation trenches, e.g. Butentau-kala 1. An indication of the available chronological information and the extent of archaeological investigation of each site mentioned here is included in Tables 1–3.

Figure 2 gives an idea of the numbers of Khorezmian fortified enclosure or fortress sites dating from the end of the seventh/beginning of the sixth century BC to the fourth century AD. The sites themselves were constructed of mud brick and/or *pakhsa* (i.e. rammed earth) with thick double fortification walls

<sup>15</sup> Helms *et al.* 2001: 136–37.

<sup>16</sup> Betts *et al.* 2009: 44–46; Helms *et al.* 2001: 136–37; 2002: 23.

<sup>17</sup> For a discussion on the limitations of analyses reliant on a comparable Central Asian relative chronology based on ceramics, see Wright 2008.

<sup>18</sup> E.g. Bizhanov and Khozhaniyazov 2003: 33.

<sup>19</sup> Baker Brite 2011: 290–92; Betts *et al.* 2009: 44–46. There are several radiocarbon dates for the sites of Kalaly-gyr 1 (Rapoport and Lapirov-Skoblo 1963: 143) and Koi-Krylgan-kala (Tolstov and Vaynberg 1967: 231, n. 22), which

were obtained by the Khorezm Expedition in the 1950s and 1960s. These dates are uncalibrated and cannot be relied upon (see Helms *et al.* 2001: 137).

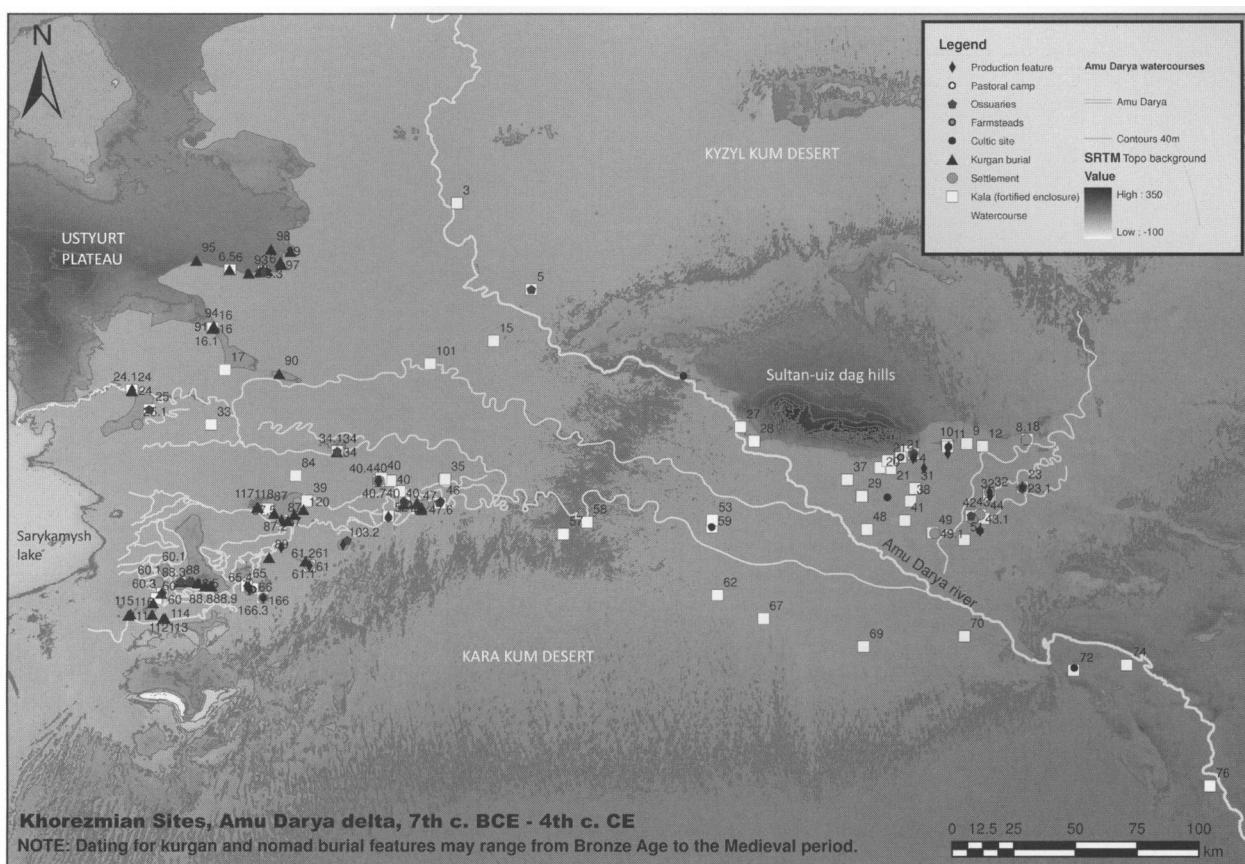


Fig. 2. GIS map of the Khorezmian oasis (modern Amu Darya delta) showing site locations.

that had archer's galleries in the centre (referred to as *mur creux* or *rempart creux*, (hollow walls) by H.-P. Francfort)<sup>20</sup> (Figs. 3–4). They were also usually characterised by external towers and complex barbican type gateways and were adorned with hundreds of arrow-shaped loopholes (Fig. 3). The enclosure sites also vary greatly in area, shape and planning, although quadrilateral shapes predominate and there is a general uniformity of construction techniques.<sup>21</sup> Their plans most often had quadrangular layouts (e.g. Ayaz-kalas, Bazar-kala, Akchakhan-kala, Kurgashin-kala), although there was a great variety of plan shapes (Figs. 5–7). Larger sites, such as Kiuzely-gyr or Akchakhan-kala, often had multiple enclosures. These types of fortified enclosures are representative of a local Central Asian architectural tradition that can be seen throughout the region in Khorezm, Sogdia, Bactria, the Ferghana valley, Aeria, Parthia, Margiana,

Hyrcaania<sup>22</sup> and the oasis formed by the delta of the Syr-darya,<sup>23</sup> including the Chirik-rabat area north of Khorezm.<sup>24</sup>

### III. RECONSTRUCTION OF THE ANCIENT KHOREZMIAN OASIS: THREE ASSUMPTIONS

The reconstruction by Tolstov and others (e.g. Khozhaniyazov and Negmatov) of the ancient period Khorezmian fortified enclosures as urban centres has been based on three key assumptions: the first that irrigation systems associated with fortified sites over 5 ha in area are clear evidence of a highly centralised

<sup>20</sup> Francfort 1979: 195, n. 3; Francfort 1979: 18; Gardin 1995; Khozhaniyazov 2006; Kiani 1982.

<sup>21</sup> Dzhety-asar culture, Levina 1996; Rapoport *et al.* 2000: 142ff.; Tolstov 1948b: 126–36.

<sup>22</sup> Francfort 1979: 21; Rapoport *et al.* 2000: 129–42; Tolstov 1948b: 103–05; Zadneprovskiy 1994: 467.

<sup>20</sup> Francfort 1979.

<sup>21</sup> Kidd *et al.* 2012; Khozhaniyazov 2006.

Fig. 2. (cont.).

Site_ID	Site_Name	Site_ID	Site_Name	Site_ID	Site_Name
2	Akchungul'	32	Bazar-kala	66	Gyaur-kala I Chermenya
3	Porly-tau	33	Kurgan-kala	66.1	Gyaur-kala I Chermenya Farmstead
4	Karantau	34	Mangyr-kala	66.7	Gyaur 4
5	Tok-kala	35	Kunya-uaz	67	Ichan-kala (Khiva)
6	Aibugiir-kala bol'shoi	36	Buldymasaz	68	Toprak-kala Yangiary
6.2	Aibugir-kala kurgan groups	37	Kara-tepe	69	Kaladzhik
6.4	Aibugir-kala malaya	38	Dzhil'dyk-kala	70	Khazarasp
6.5	Aibugir-kala malyi kurgans	39	Akcha-Gelin	72	Kaparas
7	Shorcha	40	Turpak-kala	74	Sadvar
8	Kurgashin-kala	40.2	Turpak-kala 2	76	Dzhigirbent
8.1	Kurgashin-kala settlement	40.3	Turpak-kala 3	77	Igdy-kala
9	Kyrk-kyz-kala malyi	41	Duman-kala	81	Kosh-kala I
10	Ayaz-kala I	42	Koi-krylgan-kala	84	Yarbekir-kala
11	Ayaz-kala III	43	Angka-kala	87	Tyz-gyr II pottery production sites
11.1	Ayaz-kala farmsteads	44	Kuzy-krylgan-kala	87.1	Tuz-gyr South kurgans
12	Kyrk-kyz-kala bol'shoi	45	Kalaly-gyr 2	87.2	Tuz-gyr III (SouthWest) kurgans
13	Burly-kala 1	46	Kalaly-gyr 1	87.3	Tuz-gyr 1 kala
13.1	Burly-kala settlement	47.1	Yasy-gyr 1? kurgan group	88.1	Tarym-kaya I kurgans
13.2	Burly-kala pottery kilns	48	Pil'-kala	88.2	Tarym-kaya I fortified settlement
14	Burly-kala II	49	Guldursun, bol'shoi	88.3	Tarym-kaya I open settlement
15	Gyaur-kala Khodzheilinskaya	49.1	Guldursun settlement	88.4	Tarym kaya II and III kurgans
16	Devkesken-wall	50	Dingil'dzhe	88.5	Tarym kaya II settlement
16.1	Devkesken wall kurgan	51	Eres-kala	89	Tumek-kichidzhikh
17	Devkesken-kala	52	Kiuzely-gyr	90	Chash-tepe
19	Chil'pyk	52.1	Kiuzely-gyr settlement	91	Sab'inel
20	Kzyl-kala	53	Voengan	92	Charyshly kurgan groups
21	Toprak-kala Sultan-uiz-dag	54	Kyat (left bank)	93	Berniyaz kurgan cemetery
21.2	Toprak-kala 2	57	Kiunerli-kala	94	Kummetel-2 kurgan cemetery
21.3	Toprak-kala 3	57.1	Kiunerli settlement	95	Kulmagambet kurgan cemetery
22	Ak-tepe	58	Zamakshar	96	Kaskazhol kurgan complex
23	Dzhanbas-kala	59	Toprak-kala Shavatskaya	97	Sazkuduk kurgan
23.1	Dzhanbas-kala open settlement	60	Kanga-kala	98	Hill 144.7 kurgans
24	Butentau-kala I	60.1	Kanga-gyr to Tyz-gyr Settlements	99	Syirketken kurgan
24.1	Butentau-kala I kurgans	60.2	Kanga-kala 2	100	Elkharas
25	Butentau-kala II	60.3	Kanga-kala kurgans	101	Kunya Urgench (Kurk-mulla)
27	Gyaur-kala Sultan-uiz-dag	61	Shakh-senem	102	Yakke Parsan
28	Dzhanpyk-kala	61.1	Shakh-senem kurgans	103	Kuiusai-kala
29	Akchakhan-kala (Kazakly-yatkan)	62	Toprak-kala Khivinskaya	103.2	Kuiusai 2 settlement
30	Tash-kyrman-tepe	63	Almatysh-kala	110	Sakar-chaga 1,6
31	Kavat-kala	65	Gyaur-kala II Cherman-yab	166	Gyaur-kala 3 Chermenya

state;<sup>25</sup> the second being the idea that the oasis zones were solely the province of settled agriculturalists;<sup>26</sup> and the third that because the hydraulic state model required large sedentary urban centres, the larger fortified sites must therefore have been such settlements.<sup>27</sup> These assumptions belong to neo-evolutionary viewpoints that are somewhat dated, yet they are logical and sustain a credible argument. The fortifications and canals do represent the investment of vast amounts of resources and labour and therefore imply the existence of a strong administration; agriculture is only possible in the oasis zones of Central Asia; and fortified enclosures do imply the protection of a resident human population. Each of the above assumptions or models, however, needs to be—and in some cases has been—re-examined and seriously questioned. The first two have been reconsidered by others (see below), and here I will attempt a re-examination of the archaeological evidence available for the Khorezmian fortified sites as urban settlements.

### *III.1. Assumption 1: fortresses + canals = centralised state?*

Examination of the assumption underlying Tolstov's reconstruction of the Khorezmian fortresses as the administrative and religious centres of a great, agrarian, centralised state shows that it was based on Wittfogel's hydraulic state model.<sup>28</sup> This model was developed to explain the major agricultural civilisations of the East such as China, Mesopotamia and India.<sup>29</sup> Wittfogel's model proposed that the construction of a large-scale hydraulic infrastructure such as a complex irrigation system would lead to the establishment and entrenchment of a despotic, agricultural administrative state.<sup>30</sup> Similarly, Tolstov's Marxist socio-evolutionary view-

point led to his interpretation of the ancient period Khorezmian polity as an authoritarian state whose power relied upon its irrigated agriculture, with canals constructed and maintained by a slave labour force.<sup>31</sup> Many of the walled sites were reconstructed as forming a system of state defences.<sup>32</sup> Such a state required the presence of urban centres, and thus the larger fortified enclosures were interpreted as such, especially given that many sites had not yet been properly investigated.

Tolstov's interpretation has been followed by others such as Negmatov who also proposed that from the fifth century BC Khorezm underwent a rapid stage of urbanisation marked by the proliferation of irrigation agriculture, and interpreted this as clear evidence of the development of a highly centralised state and hierarchical society.<sup>33</sup> Andrianov, Khozhaniyazov, Mambetullaev, V.M. Masson and Rapoport have echoed Tolstov's urbanised, slave-owning, sedentary agricultural state model.<sup>34</sup> Baker Brite has recently suggested that because the archaeological evidence for ancient agriculture was so well preserved in Khorezm, it drew attention away from other production strategies and clouded the issue.<sup>35</sup>

The assumption that the presence of fortresses in conjunction with canals indicates a centralised state is no longer considered self-evident for Central Asia. Several scholars of Central Asian archaeology have refuted the hydraulic state model for this region. In his analysis of Bronze and Iron Age settlement patterns in southern Central Asia, Biscione has cautioned that centralisation and canal systems are not always connected.<sup>36</sup> Lecomte has agreed that such a direct relationship between a complex irrigation system and a strong central power is now disputed.<sup>37</sup> Stride *et al.* point out that the link between irrigation systems and the state is weak, but that many of Tolstov's ideas remain accepted as fact due to the thorough nature of the Khorezm Expedition's work in the mid-twentieth

<sup>25</sup> Frumkin 1970: 85, 89; Khozhaniyazov 2006: 77; Negmatov 1994: 442; Tolstov 1948b: 103, 116; 1953: 134.

<sup>26</sup> Khozhaniyazov 2006: 119, 123, n. 304; Lavrov 1950 [not in bibliog. see also n. 58]: 20; Mambetullaev 1978: 87; Negmatov 1994; Rapoport *et al.* 2000: 24, 52; Rapoport and Trudnovskaya 1958: 52; Tolstov 1948b: 122; Yagodin 2007: 46, 47, 75.

<sup>27</sup> Khozhaniyazov 2006: 76, 92, 97; Negmatov 1944: 446–51; Nerazik 1976: 14; Rapoport *et al.* 2000: 25, 50, 52; Tolstov 1948a: 82; 1948b: 113–16; 1953: 125–30.

<sup>28</sup> Tolstov 1948b: 103, 116; see discussion in Baker Brite 2011: 20; Stride *et al.* 2009: 74–75.

<sup>29</sup> Wittfogel 1957: 6–8, 246–69, *passim*.

<sup>30</sup> Wittfogel 1957: 17–19; Scarborough 2003: 17–18.

<sup>31</sup> Frumkin 1970: 85, 89; Tolstov 1948b: 103; 1953: 129, 134; 1960: 11.

<sup>32</sup> Khozhaniyazov 2006: 73–74; Tolstov 1948a: 48ff.; 1948b: 122.

<sup>33</sup> Negmatov 1994: 442, 444, 446–451.

<sup>34</sup> Andrianov 1969; Khozhaniyazov 2006: 38; Bishanov and Khozhaniyazov 2003: 36; Mambetullaev 2004; Masson 1966: 123ff.; Rapoport 1994: 161–62; Rapoport *et al.* 2000: 34–35.

<sup>35</sup> Baker Brite 2011: 10.

<sup>36</sup> Biscione 1979: 210.

<sup>37</sup> Lecomte 1999: 140.

century.<sup>38</sup> They suggest, however, that a re-examination of this proposed relationship between irrigation systems and socio-political structures in Central Asia is justified.

Stride *et al.* have examined the canal systems surrounding Samarkand/Afrasiab area from the Iron Age/Achaemenid period to the early Middle Ages, and concluded that there was a notable lack of involvement of the state in the decision to build the Dargom canal and in the construction itself. Instead, the irrigation system appears to have been progressively constructed as the result of very localised enterprises, with no need for an exceptionally large labour force for construction or maintenance.<sup>39</sup> In this model, the irrigation systems were constructed by the local settled farming populations rather than by a centralised state, and the political power or elite of the region were most likely to have been of nomadic cultural origin.<sup>40</sup>

Recent work on the fortifications and associated landscape of the Gorgan Wall in north-eastern Iran by Wilkinson *et al.* has shown that canals were integral to a Sasanian-period water management system that supplied the Gorgan Wall and its associated fortified sites. The canals and dams provided water for the construction of the Gorgan Wall and its forts (i.e. brick-making), and supplied water to the occupants of the forts as well as the defensive ditch that ran along the wall. It possibly also supplied some local irrigation.<sup>41</sup> In this sense, the primary purpose of these canals was defensive. While this is an example of a state-controlled and -administered water-supply system, it is not an example of a state-controlled irrigation system for agriculture. It shows a strong linkage between canals and fortified sites but not in the sense of the hydraulic state model.

There is also evidence for tribally organised nomadic pastoralists controlling their own water resources. The fifth/fourth–third/second-centuries BC Chirik-rabat culture to the north of Khorezm had similarities with ancient Khorezm of its defensive fortified sites and open settlements associated with branched irrigation networks, and it also had a mixed pastoral and agricultural economy.<sup>42</sup> Similarly the semi-

nomadic steppic Dzhety-asar culture of the ancient Syr-Darya delta also employed dense irrigation networks and fortified settlements and enclosures.<sup>43</sup>

Returning to Khorezm itself, Baker Brite has raised questions about the control and management of canals in ancient Khorezm by a centralised state. The fortified sites were not located at the headwaters of major canals, as one would expect if their function was to control and defend these water resources, but instead along the middle courses and terminations of the canals (e.g. Ayaz-kala 1 and 3, Toprak-kala Sultan-uiz-dag and Akchakhan-kala; see Fig. 9).<sup>44</sup> The archaeological evidence from the canals themselves does not demonstrate their exclusive use for agriculture, as opposed to pastoral production—and they could have facilitated both.<sup>45</sup> They may also have initially been constructed primarily to maintain a water supply to areas where the river flow was dwindling, and for construction of the *kalas* themselves.

While Khorezm had ideal conditions for irrigation agriculture, it also boasted a diversity of natural resources including *tugai* forest rich with natural wildlife and access to desert-steppe zones with saltbush for grazing. Baker Brite makes clear that multiple-resource subsistence strategies were employed by the ancient Khorezmians, including pastoralism and irrigation agriculture, in order to manage risk due to environmental instability.<sup>46</sup> The Amu Darya delta, like many areas of Eurasia, is subject to extreme continental climatic conditions and minimal precipitation.<sup>47</sup> Environmental conditions fluctuate, in particular the water resources, because of the erratic nature of the Amu Darya/Oxus River, which is prone to hydrological volatility, in part because of its ability to change its course dramatically.<sup>48</sup> This volatility was part of the reason for the late Iron Age canal systems, where the Khorezmians sought to stabilise the water flow along river channels that were drying up.<sup>49</sup> The increasingly complex Khorezmian canal system in turn exacerbated environmental instability.<sup>50</sup> Baker Brite's detailed faunal, botanical and ceramic analyses at the Late Antique site of Kara-tepe indicate that the use of mixed subsist-

<sup>38</sup> Stride *et al.* 2009: 75.

<sup>39</sup> Stride *et al.* 2009: 80.

<sup>40</sup> Stride *et al.* 2009: 83.

<sup>41</sup> Wilkinson *et al.* 2013: 24–132; also Omrani Rekavand *et al.* 2008: 158.

<sup>42</sup> Negmatov 1994: 449–50; Rapoport *et al.* 2000: 129–30; Tolstov 1948b.

<sup>43</sup> Levina 1996; Tolstov 1948b: 135–36.

<sup>44</sup> Baker Brite 2011: 22–23.

<sup>45</sup> Baker Brite 2011: 24.

<sup>46</sup> Baker Brite 2011: 11, 17–18.

<sup>47</sup> Christian 1998: 7; Taafe 1990: 21.

<sup>48</sup> Kohl 1984: 29; Sinnott 1992: 83.

<sup>49</sup> Andrianov 1969.

<sup>50</sup> Baker Brite 2011: 13–18; Boroffka *et al.* 2006.

ence strategies, irrigation agriculture, hunting, fishing and husbandry of a diverse range of animals, was done in order to cope with an unpredictable environment at the transition from the Late Antique to the early mediæval periods.<sup>51</sup> Such a mixture of subsistence strategies was employed by the Turkmen in the same oasis during the nineteenth century AD, where a father may have herded cattle and was considered much higher socially and economically and the son may have farmed land and been regarded as poor, or the same man may have been a nomad when prosperous and a settled farmer when impoverished.<sup>52</sup> Recent scholarship has shown that this characteristic of employing multi-resource subsistence strategies is typical of inner Eurasian societies<sup>53</sup> and Vaynberg's work in western (or "left bank", as it is known in the Russian literature) Khorezm demonstrates that such strategies were in use in this area during the late Iron Age.<sup>54</sup>

### *III.2. Assumption 2: oasis = sedentary agricultural enclave?*

The assumption that a solely sedentary agricultural state occupied the central oasis zone with various pastoral peoples infringing upon its borders, particularly the north-western Ustyurt plateau, has been held by many Khorezmian scholars. This stems largely from the paradigm of nomad-state interaction reconstructed from Chinese historical sources, and has been described as the "raid or trade" model.<sup>55</sup> A major reason for this enduring model is because different scholars have looked exclusively at settled or exclusively at nomadic material, which has led to a division within archaeological scholarship.<sup>56</sup> The Khorezmians of the late Iron Age have been characterised as a "civilised" state besieged by "barbarian" nomadic groups.<sup>57</sup> The

widely held scholarly view has been that the Khorezm fortresses in the irrigated oasis zone house purely sedentary agriculturalists defending themselves from pastoral nomad incursions from outside the oasis<sup>58</sup> but Betts has raised the possibility that the Khorezmians may also have been protecting themselves from neighbouring oasis states (e.g. Parthia, Bactria) as well as from nomadic groups.<sup>59</sup>

Although the relationship between the Khorezmians and the nomadic "others" has largely been interpreted as economic only (based on "raid or trade"),<sup>60</sup> Vaynberg has suggested a more integrated presence of cattle-herders within the Khorezmian oasis population.<sup>61</sup> His/her work in the western (left bank) area of Khorezm showed that there was a mixed population of pastoral and agricultural communities, and raised the issue of regionalism within the Amu Darya delta, with diverse socio-economic and cultural practices in different areas of Khorezm.<sup>62</sup> Vaynberg's work was, however, incorporated into the established hydraulic state model by interpreting it as a regional variation where the sedentary Khorezmians, mainly from the eastern areas of the oasis, built canals and fortresses in order economically to control small, localised pastoral communities in the western peripheral area where irrigation agriculture was more difficult.<sup>63</sup>

The assumption that the oasis equals sedentary agrarian peoples and the steppe equals pastoral nomads is not exclusively true. Work by scholars such as Bernbeck, Chang, Cribb, Frachetti and Rouse employ new viewpoints of the life ways of ancient pastoral peoples.<sup>64</sup> For instance, Cribb, Dyson-Hudson and Dyson-Hudson, Frachetti, Chang and Salzman clearly make the point that inhabitants of the steppe employed many variable subsistence strategies for their social and economic existence in response to

<sup>58</sup> E.g.; Betts *et al.* 2009: 38–39; Khozhaniyazov 2006: 119, 123, n. 304; Lavrov 1950: 20; Mambetullaev 1978: 87; Negmatov 1994; Rapoport *et al.* 2000: 24, 52; Rapoport and Trudnovskaya 1958: 25, 52; Tolstov 1948b: 122; Yagodin 2007: 46, 47, 75.

<sup>59</sup> Betts 2006: 142.

<sup>60</sup> Khozhaniyazov 2006: 123; Mambetullaev 2004: 99–100; Yagodin 2007: 46.

<sup>61</sup> At least the western part, Vaynberg 1981: *passim*; 2004: 6–11.

<sup>62</sup> Vaynberg 1979, 1981.

<sup>63</sup> Bishanov and Khozhaniyazov 2003: 36, 49; Vaynberg 1979: 172; 2004: 9, 247; Tolstov 1960: 13.

<sup>64</sup> Bernbeck 2008; Chang 2008; Cribb 1991; Frachetti 2008; Rouse and Frachetti 2009.

<sup>51</sup> Baker Brite 2011: 376–80.

<sup>52</sup> Lansdell 1885: 445.

<sup>53</sup> Baker Brite 2011: 8–9; see also Frachetti 2008; Chang *et al.* 2003.

<sup>54</sup> Vaynberg 1979; 1981; 2004.

<sup>55</sup> E.g. Sinor 1990: *passim*; Golden 2001; Matthews 1978: 84, 92–93, 104; and discussed by Rouse and Frachetti 2009.

<sup>56</sup> Stride *et al.* 2009: 83; see also Bernbeck 2008: 45–49 for a discussion of the factors underlying the entrenchment of the "mobile-sedentary dichotomy" in Near Eastern archaeological scholarship, many of which are applicable to Central Asian scholarship.

<sup>57</sup> E.g. Masson 1966: 123–24; Rapoport 1994: 161.

dynamic environmental, political, economic and ideological contexts,<sup>65</sup> and that their defining characteristic should be their great adaptability. Cribb, Dyson-Hudson and Dyson-Hudson, Irons, Matthews and Salzman (among others) have shown ethnographically that great variation and adaptability occurs in the subsistence strategies of mobile pastoral groups, from “pure” pastoralism employing fully mobile cattle grazing, to settled or partially settled mixed agro-pastoralism and seasonally mobile pastoralism, to predatory raiding and trade practices.<sup>66</sup> Salzman has written: “We must also keep in mind that ‘settled’ and ‘nomadic’, rather being two types, are better thought of as opposite ends of a continuum with many gradations of stability and mobility”.<sup>67</sup>

This condition of variability has necessitated the use of a new conceptual framework called mobility. Pastoral nomadism is defined as a mode of production or subsistence where the human group is reliant upon their animal herds for subsistence, and which necessitates regular, patterned movement by the whole human community for the raising of these herds.<sup>68</sup> The great diversity of pastoral and nomadic groups, however, necessitated the use of many other terms to describe variations of this production or life mode, for example “semi-nomadism”, “transhumance”, “tethered nomadism”, “multi-resource nomadism” and the distinction of “hunter-gatherers”, and this has been somewhat confusing.<sup>69</sup> The term “mobile” or “mobility” is currently being used more inclusively to describe these varied and flexible forms of adaptation that employ a variety of strategies for subsistence and production. For example, “mobility” allows for many different variations of communities where some members move periodically and others do not; where long-term sedentary practices are maintained at the same time as mobile pastoral production; where hunting and gathering form a major part of subsistence as do pastoral and agricultural practices; and where segments of a society travel regularly for trading (or raiding) purposes, while

at other times they are tethered to crops and flocks.<sup>70</sup>

Recent scholarship on Eurasian archaeology has made it clear that mobility more appropriately describes the kinds of productive strategies employed by Eurasian communities of the Iron Age and ancient periods, and is more inclusive of the variety of mixed strategies employed by both steppe and oasis dwellers.<sup>71</sup> Chang, for example, has demonstrated the mixed agro-pastoral subsistence strategies of Iron Age communities in the heart of the Kazakh steppe.<sup>72</sup> It is also recognised that although the Central Asian oases are perfect for larger-scale agriculture,<sup>73</sup> pastoralism, including transhumant pastoralism, has always played an important role in the oases.<sup>74</sup> A mobility model allows for this more complicated picture of a great variety of subsistence and production strategies being employed in both steppe and oases, of which cattle raising and periodic movement was one.<sup>75</sup>

By acknowledging the framework of “mobility” as being highly relevant for understanding both the steppe and the oasis, it is clear that the archaeological record reflects a greater presence of mobile practices within the ancient Central Asian oases than has been previously recognised. For instance, intermediate stratigraphic levels dating to the Early Iron Age exposed in the excavations at Kok-tepe revealed rows of wooden post holes of light-weight construction, which Rapin likened to the huts or yurts of mobile populations.<sup>76</sup> The fortified enclosure site of Talashkan Tepe 1 in northern Bactria/southern Sogdia had a 5–9 cm-thick layer of preserved manure covering the interior of an enclosure, indicating its use as a cattle refuge or corral.<sup>77</sup> The late first-millennium BC fortified enclosure site of Kala-i Zakhoki Maron, located well within the oasis zone of Sogdia, is considered by Abdoullaev as a “nomad capital”, a place of tether providing the infrastructure for a fortified tent city and the administrative seat of the ruling elite of the oasis.<sup>78</sup> These elites may

<sup>65</sup> Cribb 1991: 16–22; Chang 2008: 331–34; Dyson-Hudson and Dyson-Hudson 1980: 18; Frachetti 2008: 368–69, 372; Salzman 2002.

<sup>66</sup> Cribb 1991; Dyson-Hudson and Dyson-Hudson 1980; Irons 1974; Matthews 1978: 89–91, 114; Salzman 2002.

<sup>67</sup> Salzman 2002: 256; see Cribb 1991: 16 who has also written about such a “continuum”.

<sup>68</sup> Cribb 1991: 17–18.

<sup>69</sup> Cribb 1991: 18–20; Wendrich and Barnard 2008: 3–11.

<sup>70</sup> Baker Brite 2011: 8–9; Bernbeck 2008; Frachetti 2008.

<sup>71</sup> Baker Brite 2011: 9; Frachetti 2008.

<sup>72</sup> Chang *et al.* 2003; Chang 2008.

<sup>73</sup> Hiebert 1994: 6–7; Taafe 1990: 26.

<sup>74</sup> Baker Brite 2011; Hiebert 1994a: 8; Holt 1989: 31; Moore *et al.* 1994: 423–26; Stride 2004: 188, 191.

<sup>75</sup> Baker Brite 2011: 5–9; Chang 2008; Frachetti 2008; Frachetti *et al.* 2010; Honeychurch and Amartuvshin 2007; Rogers *et al.* 2005.

<sup>76</sup> Rapin 2007: 32.

<sup>77</sup> Stride 2004: 191, n. 184.

<sup>78</sup> Abdoullaev 2001: 204–08.

have been the K'ang-chu who established a new system of "nomad" capitals including Afrasiab (Samarkand) and various other fortified sites, such as Kala-i Zakhoki Maron.<sup>79</sup> The steppe nomad-type burials of second–first-century BC Kok-tepe and first-century AD Tillya-tepe are interpreted by Rapin as burials of the local ruling elite, rather than those of raiders passing through.<sup>80</sup>

This pattern of an elite comprised of steppic "nomads" ruling over non-elite herders and farmers in the oases is echoed in the work of Stride *et al.* mentioned above.<sup>81</sup> In the steppe, Chang posits a similar model for Iron Age agro-pastoral settlements of the Talgar in Kazakhstan, where the local social organisation may have been egalitarian for the farmers and herders, but hierarchical at a regional level where the elite "maintained and cultivated the image of 'nomadism'".<sup>82</sup> This is based on Chang *et al.*'s investigations of small steppe villages and their spatial relationships to the elite burial kurgans.<sup>83</sup>

Archaeologically there is evidence for the presence of steppe influences and mobile groups within the Khorezmian oasis in the ancient period. Contemporary kurgan burials are attested within and around the oasis<sup>84</sup> and even inside fortified enclosures, such as at Butentau-kala<sup>85</sup> and Mangyr-kala.<sup>86</sup> A camel jawbone excavated from the cliff-top site of Burly-kala I was inscribed with ancient Khorezmian names that, according to Livshits,<sup>87</sup> may indicate the Khorezmians themselves traced their ancestry back to a confederation of the nomadic Dahae. Finds from the ceremonial complex within Akchakhan-kala appear to have clear links with the steppic world. These include shallow "ox-hide"-shaped pits filled with white ashes set into the floor of the central area of this presumed temple or elite building whose closest parallels are from nomad graves on the Ustyurt Plateau.<sup>88</sup> The mural art of this

building depicts elements, such as torques, that appear to have their closest ties with the steppe as well as with Parthia.<sup>89</sup> Kidd and Betts have suggested that this site was possibly a local administrative centre for a steppe-based ruler.<sup>90</sup>

Using historical (classical) sources Tolstov clearly established that the Khorezmians were firmly part of the steppe nomadic world, as did Brentjes, Negmatov, Rapoport and Tarn.<sup>91</sup> Betts has pointed out that the ethnicity and cultural affinities of the Khorezmians remain uncertain, leaving open the possibility of steppe and tribal associations.<sup>92</sup> Steppe nomadic groups were certainly Khorezm's closest neighbours given its remote location in the desert-steppe.<sup>93</sup>

There is much evidence of cattle-breeding tribes living within the Sarykamys area of western Khorezm during the ancient period, with large numbers of burial monuments, non-agricultural settlements and even fortified centres such as Kanga-kala, Butentau-kalas 1 and 2 and Mangyr-kala.<sup>94</sup> Vaynberg considered the evidence for contemporary pastoral sites within the Khorezmian oasis to be extremely clear, reflecting the mixed nature of the population, at least in the western/left bank area.<sup>95</sup> Figure 2 shows many of the pastoral camps, burial monuments and settlements discussed by Vaynberg and Yagodin.<sup>96</sup> This illustrates how close many of these features were to the fortresses and that they were clearly within what is considered to have been the Khorezmian territory during the ancient periods.<sup>97</sup> Vaynberg proposed that some of these fortified sites were mainly centres for the local pastoral population, using Butentau-kala I and II, Kanga-kala, Khadzhik, Kuisai-kala, Kurgan-kala and Mangyr-kala as examples,<sup>98</sup> while Yablonsky considered it highly probable that Saka tribal communities constituted a portion of the Khorezmian population.<sup>99</sup> As mentioned

<sup>79</sup> Rapin 2007: 53.

<sup>80</sup> Rapin 2007: 54–56.

<sup>81</sup> Stride *et al.* 2009.

<sup>82</sup> Chang 2008: 229.

<sup>83</sup> Chang 2008; Chang *et al.* 2003.

<sup>84</sup> Bader and Usupov 1995: 24–28; Vaynberg 1979; 1981: 122–28; Yablonsky 1990: 228; Yagodin 2007: *passim*.

<sup>85</sup> Buzhanov and Khozhaniyazov 2003: 34.

<sup>86</sup> Vaynberg 1979; 1981: 126.

<sup>87</sup> Livshits 2003: 169.

<sup>88</sup> Kidd and Betts 2010: 655; Kidd *et al.* 2004 (2008): 11; Yagodin *et al.* 2009: 8; the "ox-hide"-shaped pits have the closest parallels with stone steppic nomad altars associated with a fire cult found on the Ustyurt plateau to the west of

Chorasmia (see Olkhovsky 2000: 42, fig. 9).

<sup>89</sup> Kidd 2011; Kidd and Betts 2010; there are also other (e.g. Iranian) influences evident in this art.

<sup>90</sup> Kidd and Betts 2010: 678, 682ff.

<sup>91</sup> Brentjes 1996: 1; Negmatov 1994: 443; Rapoport 1994: 161; Tarn 1951: 81; Tolstov 1948b: 104–06; 1953: 114ff.

<sup>92</sup> Betts 2006: 140.

<sup>93</sup> Negmatov 1994: 456.

<sup>94</sup> Negmatov 1994: 449; Vaynberg 1981: 122–28.

<sup>95</sup> Vaynberg 1981: 123–24.

<sup>96</sup> Vaynberg 1979; 1981; 2004; Yagodin 2007.

<sup>97</sup> For these proposed borders see Khozhaniyazov 2006: 73–74.

<sup>98</sup> Vaynberg 1981: 122, 125, 126.

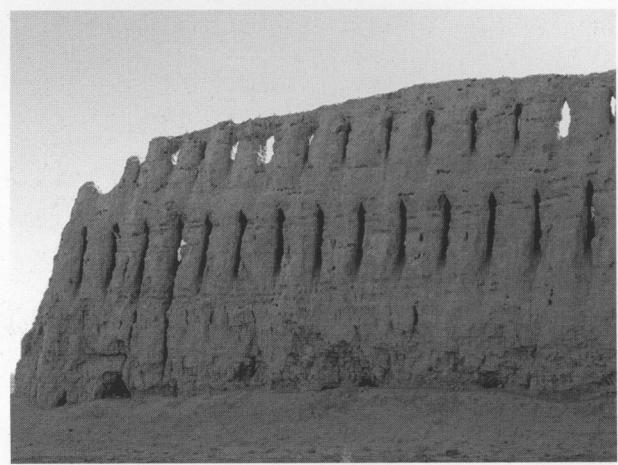
<sup>99</sup> Yablonsky 1995: 251.

above, Baker Brite's recent analysis of the late antique period in eastern (right bank) Khorezm showed that the local population of Kara-tepe employed varied subsistence strategies, both pastoral and agricultural, in response to arid and fluctuating environmental conditions.<sup>100</sup> Although the exact nature of this mixed population of farmers and herders needs to be further investigated, it seems clear that pastoralism and indeed mobility still played a significant role in the socio-economic life of ancient Khorezm. It also seems clear that in Central Asia, an oasis location does not mean a purely sedentary agricultural existence.

### *III.3. Assumption 3: fortified site = permanent settlement?*

The assumption that large (over 5 ha) Khorezmian fortified sites were urban settlements based on their site area and the fact that they were fortified<sup>101</sup> can be seen in almost all the publications about the Khorezmian fortresses. Khozhaniyazov, following the reconstruction by Tolstov, defines any fortified site over 5 ha in area as being an "urban type" site.<sup>102</sup> Well-known sites such as Kalaly-gyr 1, Kiuzely-gyr, Bazar-kala and Toprak-kala have been consistently referred to as cities by many scholars with little analysis of the available evidence for urbanism or settlement.<sup>103</sup> While the first two assumptions have been discussed by various scholars, this third assumption is in need of further examination.

The first step is to define what an urban settlement in this context might be. Defining urbanism is a difficult task that requires individual definitions for different regions:<sup>104</sup> for example, urban centres in ancient China have vastly different characteristics to those in Uruk-period south and north Mesopotamia or to those



*Fig. 3. Dzhanbas-kala eastern double-storey fortification wall, showing the two tiers of arrow-shaped loopholes (exterior view).*

of Iron Age Levant.<sup>105</sup> Cowgill suggests it is best to use a loose core concept rather than a set of criteria, and there are certain core characteristics to urban centres that allow us to recognise them as such, despite regional or temporal variation;<sup>106</sup> therefore it appears pertinent to define urbanism, however imprecisely, in ancient Central Asia.<sup>107</sup>

For Central Asia, urbanism has not been exhaustively defined, particularly for the ancient period. Francfort's 1979 monograph on Central Asian fortifications provides a critical, if criteria-based, definition.<sup>108</sup> For Francfort, a city (urban centre) in ancient Central Asia must be over 15 ha in area, must be fortified and must have a high density of structures within its enclosure.<sup>109</sup> Nerazik agreed with 15 ha being the minimum area for a city in her analyses of early medieval Khorezmian sites.<sup>110</sup> For this reason Francfort determined that in Khorezm urban enclosures are rare with only Toprak-kala (dating from the fourth/fifth centuries AD) being a "true city", having a medium to high density of buildings including housing blocks within its walls and an area of 15 ha.<sup>111</sup>

<sup>100</sup> Baker Brite 2011.

<sup>101</sup> Khozhaniyazov 2006: 76.

<sup>102</sup> Khozhaniyazov 2006: 76

<sup>103</sup> E.g. Belenitskii 1968: 55–56; Bergamini 1981: 175; Francfort 1998: 186; Khozhaniyazov 2006: 41, 77; Masson 1966: 123ff.; Negmatov 1994: 446–51. Francfort (1979: 34), however, stated that no Khorezmian fortified site could be considered a city (due to their lack of high-density intra-mural buildings, see Francfort 1979: 10) with the exception of Toprak-kala in late antiquity.

<sup>104</sup> See discussions in Cowgill 2004 and Negus Cleary 2007: 338–42; 2008: 56–59.

<sup>105</sup> Daviau 1997; Emberling 2003; Wheatley 1971.

<sup>106</sup> See discussion in Renfrew 2008: 45–46.

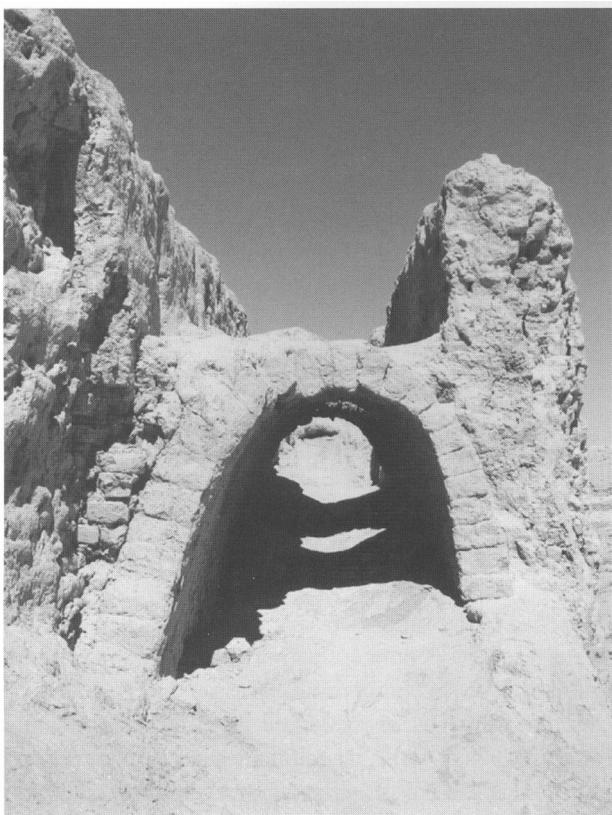
<sup>107</sup> The author is preparing a Ph.D. thesis with a chapter devoted to the topic of urbanism in ancient Central Asia and Khorezm specifically.

<sup>108</sup> See critique by Bergamini 1981: 170.

<sup>109</sup> Francfort 1979: 10, n. 21; 1998: 186.

<sup>110</sup> Nerazik 1981: 222; but see Khozhaniyazov 2006: 76 where only sites over 5 ha are urban.

<sup>111</sup> Francfort 1979: 34, table 1.



*Fig. 4. Ayaz-kala 1: view of the cross section through a vaulted two-level “archers gallery” in the gateway fortification walls.*

Housing, or a resident population, is central to the issue of identifying Khorezmian fortified enclosures as urban centres. Cowgill's very inclusive definition of urbanism begins by stating that a city is "...a permanent settlement" (among a long list of many more qualitative characteristics).<sup>112</sup> Weber, Trigger, Emberling and Masson also include a resident, concentrated population as one of the main attributes of all urban centres, and it may be regarded as perhaps the most basic urban attribute, yet evidence of permanent intra-mural settlement has been difficult to find in ancient Khorezmian fortified sites.<sup>113</sup>

It is informative briefly to consider how we define and identify settlements archaeologically. Brück has considered this question in detail and concluded that settlements are spatially and functionally distinct site

types. In terms of their distinguishing function, it is the presence of domestic activities that identifies and characterises settlements.<sup>114</sup> Domestic activities include those relating to the family and home, including food preparation and consumption, resting and sleeping, dressing, personal grooming, small-scale production of objects or textiles, human reproduction and the care of children. Archaeologically this would manifest as a "recurrent package of functionally distinct artefacts" related to the above activities that would vary culturally and temporally.<sup>115</sup> Domestic activities can also leave traces as occupation levels with micro-scale remains of debris from food production or consumption including charcoal and other bio-facts such as bones, grains and seeds. The presence of a house or other architectural structure is generally considered essential to the archaeological identification of domestic sites.<sup>116</sup> Brück cautions that we must be careful of the interpretive frameworks that we use to identify houses in the archaeological record, which may not be as easily identifiable in certain contexts as we might expect. Using the term "dwelling" instead may help to relieve us of our own socio-cultural expectations around the concept of "house" and "home".<sup>117</sup> Dwellings may or may not have walls, there may be hearths for heating or cooking associated with them, either within the structures or outside them. There may be storage features, benches for sleeping or food preparation, floors, associated features such as middens, ditches, water-supply features and, importantly, the presence of the functionally distinct package of domestic artefacts mentioned above.<sup>118</sup>

Can we find such a package of functionally domestic artefacts and structures that indicate a dwelling in the Khorezmian archaeological record? The answer is yes. Good examples are the farmsteads of Ayaz-kala dating at the earliest to the fourth–third centuries BC, and in a second phase to the first–third centuries AD.<sup>119</sup> These dwellings were composed of four to five adjoining rooms, rectangular or square in shape, forming a building located in one corner of a larger enclosure that was devoid of other structures. The walls were made of sun-dried mud brick. The rooms had small hearths for

<sup>112</sup> Cowgill 2004: 526.

<sup>113</sup> Emberling 2003: 254; Masson 1981: 137; Trigger 2003:

121; Weber 1958: 65.

<sup>114</sup> Brück 1999: 54–55.

<sup>115</sup> Brück 1999: 55.

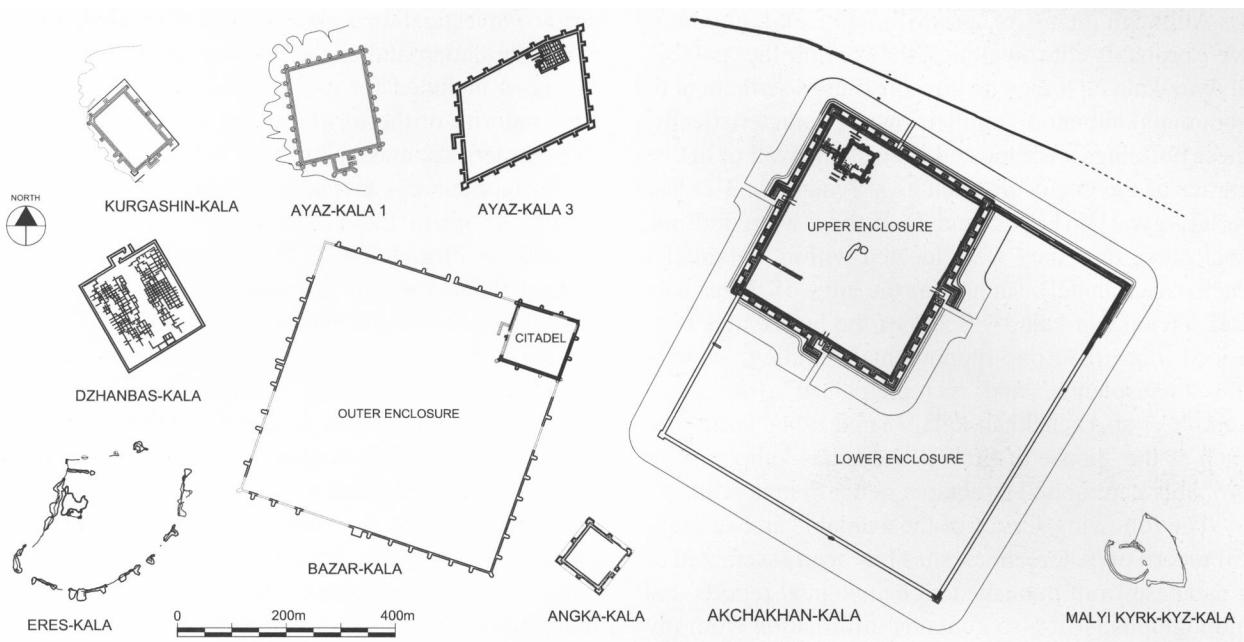
<sup>116</sup> Brück 1999: 55; Brück and Goodman 1999: 2–6; Hayden

1999: 113.

<sup>117</sup> Brück 1999; Brück and Goodman 1999: 3–4.

<sup>118</sup> Brück and Goodman 1999: 3–5.

<sup>119</sup> Nerazik 1976: 46–48.



*Fig. 5. Plans of ancient period Khorezmian fortified sites. All site plans were drawn by the author from Total Station surveys conducted in 2002 and DGPS surveys conducted in 2005. The plans of Dzhanbas-kala and Ayaz-kala 3 have some additional features added from previously published plans, as these features were very eroded and indistinct in 2002 and 2005 and could not be surveyed. The Dzhanbas-kala plan includes internal housing walls based on the plan in Tolstov 1948a: fig. 29. The Ayaz-kala 3 plan includes more detail on the towers and the “palace” building based on Nerazik 1976: fig. 19 and Bolelov 1998: fig. 1.*

heating and cooking, usually on the floors in the centre of the rooms, but occasionally set against a wall. There were often pits, and large ceramic storage jars set into the floors. Long mud benches were built against the walls and floors were mud-plastered, often with several layers. Occupation deposits included fragments of charcoal, ash, bone, pottery and some unidentified plant remains. The assemblage of artefacts included utensils related to food production, stone querns, ceramic spindle whorls, “Kushan”-period coins, carved bone “styluses”,<sup>120</sup> bronze rings, bronze pendants, glass, carnelian and chalcedony beads, bronze trilobal arrowheads and a gold plaque with garnet insert. Pottery included large, handmade storage jars, wheel-made goblets, cups and jugs, small and large pots and handmade coarse wares.<sup>121</sup> This “package”

of artefacts seems to indicate food production, storage and consumption activities and personal items relating to adornment, grooming and clothing. Similarly, the rooms with their benches and storage containers and heating as well as cooking hearths, clearly show that humans rested, cooked, ate, slept, groomed and dressed in these buildings.

Although there are other late Iron Age dwellings excavated from Khorezm, including those at Dingil’dzhe and the settlement at Kurgashin-kala,<sup>122</sup> these are mainly found in extra-mural locations and not inside the fortified sites themselves (see below). From within the fortified sites, there are few examples of dwellings that have been confirmed archaeologically. These are detailed in Tables 1 and 2, and will be discussed further below. The main type of architecture that was found within fortified Khorezmian sites was the single monumental building (Figs. 5 and 7), which is often referred to as a “palace” and may have been an elite residence, and so should be considered in this discussion.

<sup>120</sup> These were assumed by Tolstov to have been styluses for writing, presumably on clay or wax (Tolstov 1948a: fig. 36b), but may have been for personal adornment in the hair or on clothing perhaps, or used for toilet purposes as suggested for a similar artefact from Akchakhan-kala (Kidd 2007: 26).

<sup>121</sup> Nerazik 1976: 42–48, figs. 18–23; Tolstov 1948a: 103–04; 1948b: figs. 36a, 36b.

<sup>122</sup> Nerazik 1976: 35–37; Vorob’eva 1973.

Although many of these monumental buildings were probably elite dwellings, for example the “palace” at Ayaz-kala 3,<sup>123</sup> they do not constitute a settlement or communal habitation on their own. Characteristically, these buildings were located against one wall or in one corner of the enclosure such as at Ayaz-kala 3<sup>124</sup> and Kalaly-gyr 1<sup>125</sup> (Figs. 5 and 7). If there were multiple enclosures then they were located within the smaller enclosure (citadel), such as at the sites of Bazar-kala and Akchakhan-kala.<sup>126</sup> Some of the larger sites contained more than one monumental building, such as the “mausoleum” and “temple/palace” (or KY10 complex) at Akchakhan-kala,<sup>127</sup> and other buildings, such as the “house of fire” at Dzhanbas-kala,<sup>128</sup> were probably ceremonial structures rather than dwellings.

The following survey of the available archaeological record on Khorezmian sites has been assembled in a database from published archaeological reports and monographs;<sup>129</sup> it also contains information from my own surveys of sites in eastern (right bank) Khorezm conducted in 2002 and 2005.<sup>130</sup> The database currently holds 75 known sites dating from the ancient period (seventh/sixth century BC–fourth century AD). It details fields such as fortifications, type, site size, dimensions, dating, finds, buildings or other structures, excavation history, plan forms, references etc. Some summaries from the database are shown in Tables 1, 2 and 3. As noted above, there are issues related to the dating of sites and features, which mean that the date ranges are essentially relative. The level of archaeological investigation varies between sites, from extensive, widespread excavations carried out over many years at some sites, to several isolated trenches and

surface investigation only at others. A rating A–D that relates to dating and to the level of site investigation, has been included for each site entry on Tables 1–3. The majority of the fortified sites were not built over in later periods, and so for sites not covered by sand, the surface surveys and aerial photography conducted by the Khorezm Expedition under Tolstov provided invaluable information.<sup>131</sup> Other than the recent work at Akchakhan-kala and Kara-tepe, no geophysical surveys have been conducted at any other sites.<sup>132</sup>

Table 1 presents a summary of the fortified sites where clear evidence of multiple dwellings *inside the enclosures* has been found dating to the ancient period. Since we are looking for evidence of settlement, this table excludes sites that only have single elite residences in the form of monumental building complexes or palaces, although these are included in Table 2. Excluding Toprak-kala (see below), this summary shows that only five out of 75 ancient period fortified sites of any size have clear evidence of intra-mural settlement (these are shown shaded in Table 1).

The fact that non-monumental, mud dwellings have been preserved and excavated outside many *kalas* suggests that similar dwellings should also have been preserved within the enclosures if they existed. Good examples of this are Kurgashin-kala and Ayaz-kala 3 and their surrounding farmsteads where dwellings and other non-monumental structures have been documented (Table 3). There should in fact be better preservation of non-monumental mud architecture within the enclosures because the high mud walls provided some measure of protection from wind erosion. In addition the *kalas* were often located on higher ground or on consolidated sand dunes providing improved protection for buried archaeological features by rising groundwater due to modern irrigation practices.

Intra-mural dwellings appear to have been varied in construction types, forms and morphology (see site plans Figs. 5–7). There are examples of nucleated, medium-density housing and also single, free-standing houses of various scales.<sup>133</sup> Unfired mud-brick dwellings agglomerated together in two large housing blocks have been excavated at Dzhanbas-

<sup>123</sup> Bolelov 1998: 134; Negus Cleary 2007: 348.

<sup>124</sup> Bolelov 1998: 134, fig. 1.

<sup>125</sup> Rapoport and Lapirov-Skoblo 1963: fig. 1.

<sup>126</sup> Francfort 1979: 10; Khozhaniyazov 2006: 97.

<sup>127</sup> Betts *et al.* 2009: 36, fig. 2; Kidd *et al.* 2004: 77–80, fig. 2; Kidd *et al.* 2012.

<sup>128</sup> Tolstov 1948a: 97.

<sup>129</sup> E.g. Betts *et al.* 2009; Bizhanov and Khozhaniyazov 2003; Bolelov 1998; Helms and Yagodin 1997; Helms *et al.* 2001; 2002; Khozhaniyazov 1982; 2006; Kolyakov 1991; Manylov 1965; Mambetullaev 1978; Mambetullaev and Khozhaniyazov 1978; Manylov and Khozhaniyazov 1981; Nerazik 1976; Nerazik and Rapoport 1981; Rapoport 1994; Rapoport and Lapirov-Skoblo 1963; Rapoport *et al.* 2000; Tolstov 1948a; 1948b; 1960; 1962; Tolstov and Vaynberg 1967; Tolstov and Zhdanko 1958; Vaynberg 1979; 1981; 2004.

<sup>130</sup> Betts *et al.* 2009: 49–53.

<sup>131</sup> Tolstov 1948b.

<sup>132</sup> The author is currently completing a thesis detailing the results of these surveys.

<sup>133</sup> The large, well-investigated farmhouse of Dingil’dzhe is not discussed here because it was unfortified and appears not to have been associated with a fortified enclosure or *kala*; See Vorob’eva 1973.

kala (see Figs. 3 and 5). Occupation deposits around 50 cm thick with many bone and pottery fragments, several mud-floor levels and an artefact assemblage of glass and semi-precious stone beads, querns, terracotta figurines and a *tandyr*-type cooking oven, all suggest domestic activities.<sup>134</sup> Over 150 rectangular rooms were found, suggesting a sizeable community (i.e. more than several families). The small area of the site and its single ceremonial/ritual building indicate that it was probably a fortified village.<sup>135</sup> Surface features indicate that there were similar housing blocks bisected by two perpendicular streets at the fortified enclosure of Akchagelin, and this site was very similar in size and medium-density morphology to Dzhanbas-kala.<sup>136</sup> Excavations at Bol'shoi Aibugiir-kala revealed two mud-brick agglomerated housing and storage complexes separated by a street dating to the fifth/fourth–third century BC.<sup>137</sup> Surface features indicated several other possible streets, which implies more medium- to high-density intra-mural occupation.<sup>138</sup> The “Archaic” sixth–fifth-century BC site of Kiuzely-gyr had evidence of more ephemeral dwellings consisting of the remains of timber posts and clay-coated wooden structures (wattle and daub-style construction) that were closely packed together against the inside of the fortification walls in the lower enclosure.<sup>139</sup> Single-storey, free-standing dwellings with adjoining stone pavements were located within the fortified area of Butentau-kala 1. This highly unusual site was formed by a single fortification wall and ditch protecting the end of a high promontory (Fig. 6). Inside this protected area were free-standing, mud-brick houses as well as kurgan burial mounds, fire pits and kilns.<sup>140</sup>

There are two sites included in Table 1 that do have clear evidence of intra-mural dwellings but because of their small sizes, they should be regarded as single fortified buildings.<sup>141</sup> These are the late third–early

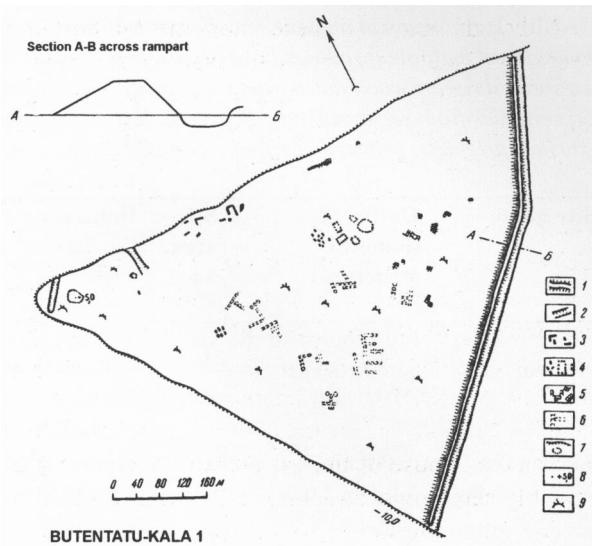


Fig. 6. Plan of Butentau-kala 1 (Tolstov 1958: fig. 36). 1: earthwork rampart; 2: ditch; 3: wall remains; 4: cemetery; 5: traces of brick and stone masonry; 6: traces of planning; 7: cliffs and mounds; 8: relative heights; 9: vegetation (saxaul).

fourth-century AD Koi-krylgan-kala with a site area of 0.55 ha (note that all site areas are calculated to the approximate outside face of the fortification walls)<sup>142</sup> and Kiunerli-kala at 0.3 ha whose dating is more uncertain.<sup>143</sup> Both of these sites probably functioned as the fortified manor houses of large rural estates.

There are other sites that had evidence of non-monumental, intra-mural structures that may or may not have been dwellings, usually consisting of rooms or apartments attached to the inside of the fortification walls. These places are Burly-kala 1, Gyaur-kala 2 Chermen-yab, Kurgashin-kala, Kalaly-gyr 2 and Gyaur-kala Sultan-uiz-dag.<sup>144</sup> At Kiuzely-gyr there

“fortified buildings or barracks”.

<sup>142</sup> Tolstov and Vaynberg 1967: 310, fig. 35.

<sup>143</sup> Khozhaniyazov 2006: 77; Nerazik 1976: 18; Tolstov 1948a: 102, fig. 36.

<sup>144</sup> Gyaur-kala I Chermen-yab also has rectangular structures attached to the internal face of the secondary enclosure walls shown on the plan in Tolstov 1948a: fig. 54. Tolstov interpreted these surface features as the remains of walls (1948a: fig. 54), but Nerazik, who conducted extensive and intensive surveys in the Gyaur-kala area, interpreted these square and rectangular features as *aryks* or ditches used for the irrigation of orchards or gardens protected within the secondary enclosure wall. It is also worth noting that this secondary enclosure was not as substantial as that of the primary enclosure, and it may in fact have been an earthen embank-

<sup>134</sup> Tolstov 1948a: 88, 93–94.

<sup>135</sup> Tolstov 1948a: 93, 94.

<sup>136</sup> Tolstov 1958: 26, fig. 7.

<sup>137</sup> Mambetullaev and Khozhaniyazov 1978: 83, 85, 86.

<sup>138</sup> Mambetullaev and Khozhaniyazov 1978: 81, fig. 1.

<sup>139</sup> Khozhaniyazov 2006: 72; Negmatov 1994: 446; Rapoport et al. 2000: 26.

<sup>140</sup> Bizhanov and Khozhaniyazov 2003: 33–36; note that dating for this site is based on unstratified surface ceramic finds (Bizhanov and Khozhaniyazov 2003: 33), and the kurgans may be later in date (Tolstov 1958: 81).

<sup>141</sup> See also Khozhaniyazov 2006: 77 who classes these as

TABLE 1. Khorezmian ancient period sites with some evidence of settlement within the enclosures. Those sites with clear evidence of multiple dwellings have been shown shaded. The dating of each site is given a rating: A – a range of absolute calibrated radiocarbon dates from secure, stratified contexts (extensive excavations); B – relative dating based primarily on ceramics from secure stratified contexts (extensive excavations); C – relative dating based on some stratified and some surface artefacts, primarily ceramics (limited excavation); D – relative dating based on surface artefacts only, primarily ceramics (no excavation).

Site name	Dating of domestic structures	Site area, ha	Domestic structures (i.e. houses, dwellings)	Other non-monumental intra-mural structures or features	References
Aibugiir-kala, bol'shoi	Fifth/fourth–third centuries BC (B)	10	Two structures with three habitable rooms and storage rooms excavated	Street(s) Fire temple (?)	Mambetullaev and Khozhaniyazov 1978: 81–85; Yagodin 2007: 45–46
Akchagelin	c. Beginning third–end first century BC (D)	3.15	Surface features indicating agglomerated structures (dwellings?)	Streets (?)	Tolstov 1958: 26, fig. 7
Burly-kala 1	Fourth/third century BC–fourth century AD (B)	0.88	Three rooms excavated adjoining gateway with domestic features	Central tower-like structure (dating?)	Manylov and Khozhaniyazov 1981: 42, 44
Butentau-kala 1	Sixth–fourth century BC; fourth–third century BC; second–fourth century AD (C)	34.3	Small, freestanding houses	Large building, kurgan burial mounds, kilns, fire pits	Bizhanov and Khozhaniyazov 2003: 33–36
Dzhanbas-kala	Fourth century BC–first century AD (B)	3.1	Two residential blocks of single-storey, agglomerated rooms with courtyards and domestic artefacts	Monumental ceremonial building (“house of fire”)	Tolstov 1948a: 88–94
Gyaur-kala 2 Chermen-yab	Fourth/third centuries BC–first century AD (D)	7.03	Unexcavated—possible rooms in one or two rows inside fortification walls	?	Nerazik 1976: 17
Gyaur-kala Sultan-uiz-dag	Third century BC–first/second century AD (B)	7.0	No dwellings (lower enclosure not well preserved)	Ceremonial room and large monumental building in citadel	Kidd <i>et al.</i> 2004 (2008): 75, 90 n. 51; Khozhaniyazov 2006: 67; Rapoport <i>et al.</i> 2000: 50; Rapoport and Trudnovskaya 1958: 348–63
Kalaly-gyr 2	Mid-fourth–beginning second century BC (B)	3.0	No dwellings (semi-subterranean pit-type houses related to initial construction period)	“Round temple”, central monumental building, metal production	Vaynberg 1994: 75, 77; 2004: 12, 17, 19

TABLE 1. (*cont.*)

Site name	Dating of domestic structures	Site area, ha	Domestic structures (i.e. houses, dwellings)	Other non-monumental intra-mural structures or features	References
Kiuzely-gyr	Sixth–fifth century BC (B)	25.0	Wattle and daub-type domestic structures agglomerated near fortification wall(s). Habitable spaces within corridors of fortification walls (?)	Monumental ceremonial complex; platform with ashes; ceremonial structures	Khzhaniyazov 2006; Rapoport <i>et al.</i> 2000: 25–29; Tolstov 1960: 12; 1962: 96–104
Kiunerli-kala	“Antique” (i.e. fourth–first centuries BC) (D)	0.3	Indications of rooms within the fortress walls. Unexcavated.	N/A (single fortified building)	Masson 1966: 126; Tolstov 1948a: fig. 36; 1948b: 135, 154
Koi-krylgan-kala	First century AD to end third/fourth century AD (second occupation period) (B)	0.55	Habitable rooms, storehouses and workshops around central structure (not present during the first occupation period)	N/A (single fortified building)	Tolstov 1960: 14; Tolstov and Vaynberg 1967: 310–11
Kurgashin-kala	Fourth century BC–third/fourth century AD (B & C)	1.4	Groups of small–medium rooms—domestic? Ceremonial?	unlikely	Kolyakov 1991: 110–19, 123
Toprak-kala Sultan-uiz-dag	Fourth–sixth centuries AD (B)	17	Double storey, high-density multi-roomed houses organised in residential blocks separated by streets	High “palace”; outer “palace”; two monumental “temples”;	Rapoport 1994: 162

was excavated evidence that the galleries within the double fortification walls were occupied as dwelling spaces and had wattle and daub-type dwellings along the inside of the fortification walls.<sup>145</sup> The concept of locating dwellings around the perimeter of the fortified enclosure and keeping the central space free may have been important to the Khorezmians. This raises the question of what the central enclosed area may have been reserved for, and the account of the *var* of the hero Yima in the Avesta provides an interesting model. The *var* was a square enclosure with dwellings lining the enclosure walls and a space for cattle and sheep in the centre.<sup>146</sup> This may be a clue as to the original intent of the planning of many *kalas*.<sup>147</sup>

ment rather than a fortification wall (Nerazik 1976: 16).  
<sup>145</sup> Tolstov 1962: 99.

<sup>146</sup> *Avesta: Vendidad* 2.21–32; Tolstov 1948b: 94.

<sup>147</sup> See discussion in Helms and Yagodin 1997: n. 3; Helms

The summary shown in Table 1 demonstrates how limited the evidence is so far for intra-mural dwellings and settlements within the ancient fortified sites. There are two small fortified villages, Akchagelin and Dzhanbas-kala, and a larger fortified town of Bol’shoi Aibugiir-kala. Of all these sites only two, Toprak-kala and Butentau-kala 1, are of sufficient scale to be considered urban settlements—around 15 ha or larger (in accordance with Francfort’s definition above)—and which had multiple intra-mural dwellings. Butentau-kala 1 had very low-density housing interspersed with probable ceremonial features (mounds and fire pits) and production features such as pottery kilns, but apparently did not have the appearance or planning of a permanent fortified settlement. Toprak-kala

*et al.* 2001: n. 29; Helms in Khzhaniyazov 2006: n. 45; Negus Cleary 2007; Tolstov 1962: 99.

TABLE 2. *Summary of archaeological evidence for intra-mural structures in ancient period Khorezmian fortified sites over 15 ha in area. The dating of each site is given a rating: A – a range of absolute calibrated radiocarbon dates from secure, stratified contexts (extensive excavations); B – relative dating based primarily on ceramics from secure stratified contexts (extensive excavations); C – relative dating based on some stratified and some surface artefacts, primarily ceramics (limited excavation); D – relative dating based on surface artefacts only, primarily ceramics (no excavation).*

Site name	Date	Site area (ha)	Domestic structures	Monumental buildings (number of)	References
Bazar-kala	Fourth–first century BC (C)	23.5	? none found very few surface features	2 type unknown	Andrianov 1969: fig. 4; Lavrov 1950: 19–20; Tolstov 1948a: fig. 48; 1962: fig. 41
Butentau-kala I	Sixth–fourth century BC; fourth–third century BC; second–fourth century AD (C)	34.3	Small free-standing houses, number <20.	kurgans large fire pits	Bizhanov and Khozhaniyazov 2003: 33–36
Devkesken-kala	Fourth–second century BC (C)	17.0	? Overlaid by mediaeval occupation	1	Khozhaniyazov and Khakiminiyazov 1997
Ichon-kala (Khiva)	End of fifth/beginning of fourth–fourth/third century BC (C)	26.0	? Overlaid by mediaeval occupation	? Overlaid by mediaeval occupation	Khozhaniyazov 2006: 58
Kalaly-gyr 1	Fifth/fourth century BC, fourth–second century BC (B)	63.0	no enclosure empty	1 palatial complex	Rapoport and Lapirova-Skoblo 1963: 141–43; Rapoport <i>et al.</i> 2000: 33
Akchakhan-kala (Kazakly-yatkan)	Third/second century BC–second century AD (A & B)	42.6	?	3 KY10 complex; KY07 “mausoleum”; “temenos” area	Betts <i>et al.</i> 2009: 45; Helms <i>et al.</i> 2002; Kidd <i>et al.</i> 2004 (2008); 2012.
Kiuzely-gyr	Sixth–fifth century BC (B)	25.0	Wattle and daub small structures	5 palatial complex; platform; single-roomed structures	Negmatov 1994: 446; Rapoport <i>et al.</i> 2000: 25–29, figs. part 1 pl. 3, pl. 4; Tolstov 1948a: 77–81; 1960: 12
Kurgan-kala	c. Second–fourth century BC (D)	17.8	?	?	Khozhaniyazov 2006: 75, 77, fig. 42
Mangyr-kala	c. First–fourth centuries AD (C)	27.0	?	Kurgans ?	Durdyev <i>et al.</i> 1978: 546
Toprak-kala Sultan-uiz-dag	Second/third–fourth centuries (B)	17.0	Residential blocks of large, multi-storey houses	High palace; outer palace; “temple”; ceremonial complex	Rapoport 1994; Rapoport and Nerazik 1981
Zamakshar	First–second centuries AD (D)	19.8	? overlaid by mediaeval occupation	?	Nerazik 1976: 16

had formalised, double-storey residential blocks and streets<sup>148</sup> but, as noted above, these date to the third/fourth–fifth century AD, which is the beginning of the early mediaeval (“Afrighid”) period in Khorezm.<sup>149</sup> Therefore I would argue that this phase of Toprak-kala represents a change in the settlement regime, perhaps a move towards the more nucleated settlement centres that occurred in the early mediaeval and mediaeval periods in Khorezm/Khwarizm, for example Kath (Al-Fir) and Kunya Urgench.<sup>150</sup>

We should now consider the available evidence for intra-mural settlement at the larger Khorezmian sites only, that is, those sites that are large enough to be considered urban.<sup>151</sup> Table 2 summarises all the ancient period fortified sites that are over 15 ha in area. It demonstrates how few of the large *kalas* have clear evidence of any structures within their enclosures, apart from one or two monumental buildings.

Table 2 shows that of these largest *kalas* (>15 ha), there are only three with clear evidence of multiple dwellings: Butentau-kala and Toprak-kala (both discussed above) and Kiuzely-gyr. Kiuzely-gyr, the first known fortified site in Khorezm dated to the sixth–fifth centuries BC,<sup>152</sup> is a double enclosure site, is irregular in plan form with a large palatial-type complex in the citadel/primary enclosure and a monumental platform with evidence of ritual fires, and has several single-roomed structures with thick mud-brick walls whose purposes are unknown. The remains of wattle and daub-type dwellings were found, as was domestic occupation evidence within the galleries of the fortification walls, but the rest of the 25 ha enclosed site remained open space.<sup>153</sup> The idea of more ephemeral dwellings within enclosures, such as the wattle and daub houses or even reed huts and tented dwellings, should be considered for other *kalas* where investigation has not been as thorough. The site has been inter-

preted as an elite or administrative centre and refuge for local people and most importantly their cattle,<sup>154</sup> and faunal remains indicate that herds of larger cattle, predominately horses and camels, were kept here.<sup>155</sup> This evidence hints at the importance of pastoral practices at early Khorezmian fortified sites.

There were other sites with similar large areas of open intra-mural space to those seen at Kiuzely-gyr. The fifth–fourth-century BC site of Kalaly-gyr 1 was also well investigated and showed only a single monumental palatial complex within the enclosure area—the rest of the space was devoid of structures (Fig. 7).<sup>156</sup> Tolstov considered the site to be an elite administrative centre and cattle enclosure;<sup>157</sup> while Rapoport and Khozhaniyazov have suggested that the site was unfinished and never inhabited, thus explaining the emptiness of the enclosure.<sup>158</sup> Ayaz-kala 3 was thoroughly investigated by Bolelov yet no cultural deposits, debris or architecture apart from the “palace” was found, despite sampling over the interior of the enclosure.<sup>159</sup>

There are several large sites shown on Table 2 that are sizable enough to be considered urban, which are located in central areas of the oasis, but due to limited archaeological investigation little is known about how they were occupied, particularly their outer enclosures. Akchakhan-kala is one example; test sondages and small test trenches there have shown little evidence of large intra-mural habitation precincts.<sup>160</sup> Baker Brite reported an unusually clean, open area from her trench within the Upper Enclosure of Akchakhan-kala with no cultural material or structures, and she did not think that erosion or post-depositional factors were likely explanations for this result.<sup>161</sup> Other intra-mural test trenches conducted in two areas away from the visible monumental architecture within the Upper and Lower enclosures, revealed horizontally laid mud bricks,

<sup>148</sup> Nerazik and Rapoport 1981; Rapoport 1994: 162.

<sup>149</sup> Litvinskii 1994: 298; Rapoport 1994: 182; Tolstov 1946: 173.

<sup>150</sup> Nerazik 1981; see also accounts of these eighth-century AD settlements in Le Strange 1930: 446ff.

<sup>151</sup> Note that site size alone is not sufficient to categorise an urban site, but that it is an important variable (Smith 1998: 95; Trigger 1990: 121).

<sup>152</sup> Tolstov 1960: 12.

<sup>153</sup> Tolstov (1948a: 79) stated that Kalaly-gyr 1 and Kiuzely-gyr enclosures proved to be completely free of cultural remains, aside from their monumental structures. He said it was possible to say with certainty that their intra-mural areas were not used for dwelling.

<sup>154</sup> Rapoport *et al.* 2000: 25, 28; Tolstov 1948a: 80.

<sup>155</sup> Tolstov 1962: 104.

<sup>156</sup> See n. 151.

<sup>157</sup> Tolstov 1948a: 80; 1948b: 94; it has been proposed as the administrative seat of an Achaemenid satrap; see comments in Negus Cleary 2008: 59, n. 39; Helms 1998: 89; Vogel sang 1992: 291.

<sup>158</sup> Khozhaniyazov 2006: 72; Rapoport *et al.* 2000: 31.

<sup>159</sup> Bolelov 1998: 117.

<sup>160</sup> Baker Brite 2007: 7–8, 23; Helms and Yagodin 1997: 50, 52.

<sup>161</sup> Baker Brite 2007: 7.

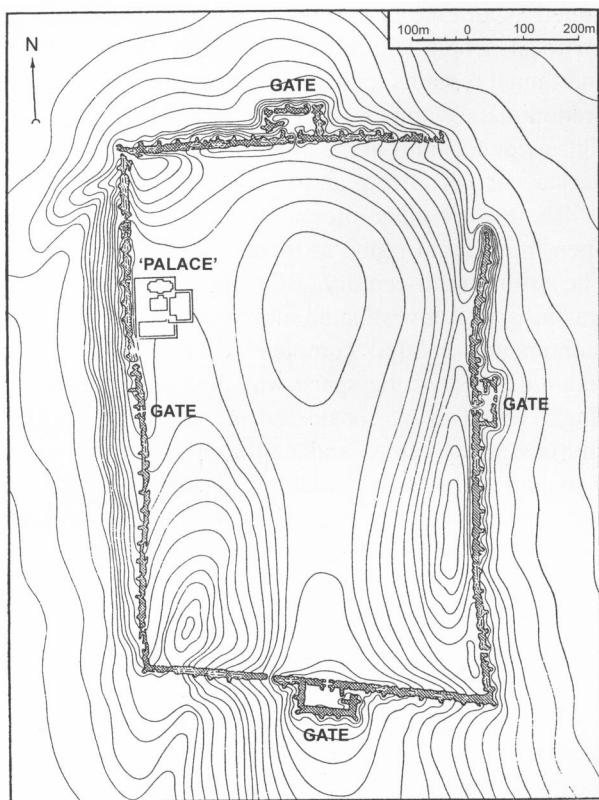


Fig. 7. Plan of Kalaly-gyr I (Tolstov 1962: fig. 29, annotations by M. Negus Cleary).

or a mud surface, and no artefacts.<sup>162</sup> Two trenches were dug inside the eastern lower enclosure fortification walls in 1995–1996 and 2007. These trenches revealed some thin walls and mud-floor levels abutting the fortifications (1995–1996 only) with abundant ceramics, several hearths built against the fortification walls, spindle whorls and other artefacts and abundant faunal material. Baker Brite concluded that the 2007 trench was an area where some domestic activities took place, including waste disposal and food preparation, but not consumption.<sup>163</sup> It is interesting that these domestic-type activities took place against the fortification walls, but so far nothing similar has been found in the central areas of the enclosures. The sampling here, however, has not been exhaustive and there is ample scope for further investigation.<sup>164</sup>

<sup>162</sup> Helms and Yagodin 1997: 50, figs. 4, 5.1; Helms *et al.* 2001: 130, fig. 14.1; Yagodin *et al.* 1996: 24–26.

<sup>163</sup> Baker Brite 2007: 21, 23.

<sup>164</sup> The author is preparing a Ph.D. thesis detailing recent geo-

Table 2 illustrates the differential nature of the archaeological data (see above) in showing that some sites have been subject to detailed archaeological investigation while others have not. Of those that have not had extensive excavations, little is known about their ancient period layout or site structure beyond the outline of the fortification wall. Particularly problematic are those sites with mediaeval period occupation that obscures the ancient period levels such as Ichankala (Khiva), Zamakshar and Devkesken-kala, but they are in the minority. Most Khorezmian sites do not have later occupation. There are also complicated issues related to site preservation, with erosion due to deflation by aeolian activity at some sites. More recently, the very high groundwater levels from modern irrigation agricultural practices have caused the destruction of many surface features (particularly ceramic artefact scatters)<sup>165</sup> and important buried archaeological deposits. This issue of differential preservation complicates the available archaeological evidence.

While we cannot say that many of the sites did *not* have permanent dwelling quarters within their enclosures, similarly we cannot assume that they did, given the lack of evidence. Indeed, the negative settlement evidence is perhaps more supportive of no permanent intra-mural settlement, given the lack of tell-type site morphology and the deficiency of other “urban” features such as streets and water-supply systems. Contemporary dwellings have been investigated and mapped in the immediate extra-mural vicinities of many of these sites (see section IV below),<sup>166</sup> so it seems unusual that almost no traces of housing precincts aside from “palace”-type buildings have been found within many of the enclosures. Even on sites that have not been extensively investigated archaeologically,<sup>167</sup> such as Bazar-kala, Mangyr-kala and Kurgan-kala, the large open areas with few surface features and a low density of surface artefacts appear to indicate that these sites were not permanently inhabited, or were not inhabited for very long—the exceptions are Ichankala (Khiva), Devkesken-kala and Zamakshar where mediaeval

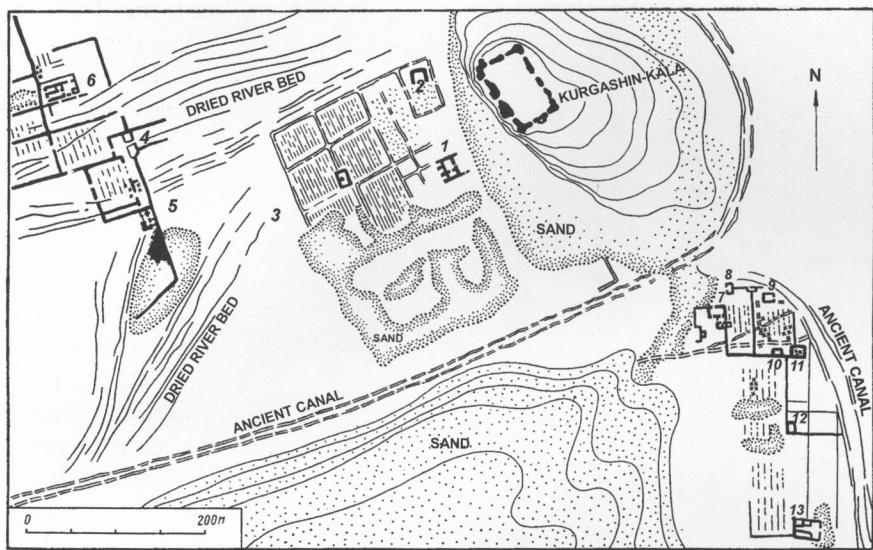
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physical investigations at this site.

<sup>165</sup> Khozhaniyazov, pers. com.

<sup>166</sup> These features are considered contemporaneous, based on similar ceramics and material culture, e.g. Nerazik 1976; Vaynberg 1979.

<sup>167</sup> I.e. sites that have not had extensive and thorough excavations and site survey over several years.



*Fig. 8. Plan of Kurgashin-kala and its open settlement (Nerazik 1976: fig. 15; with annotations in English by M. Negus Cleary). 1: ruined building with aiwan-type structure; 2: small building; 3: storage building; 4: unknown structure; 5,6: dwellings surrounded by walled vegetable gardens/vineyards; 7,8: houses associated with farmstead; 8–10, 12: ruined buildings, associated with farmstead; 11: possible dwelling; 13: house with associated buildings and enclosed garden/vineyard (Nerazik 1976: 36–37).*

layers cover the ancient period levels, and Akchakhan-kala because of the deep dune field. The majority of sites are not overlaid by later period occupations and most retain a clear layout of the original planning. They do not appear to have been subject to organic growth but were built to formalised and pre-defined designs, predominately quadrangular in shape, which is suggestive of a conscious ideological intent. It seems that there were notably short occupation periods at most sites, with episodes of abandonment, then renewal of the architecture and re-occupation, sometimes involving a change of use.<sup>168</sup>

From Table 2 we can see that the larger sites have been less likely to reveal evidence of intra-mural housing or multiple dwellings. It is more common in the larger sites to find single elite dwellings (the so called “palaces”). Of the six sites over 15 ha in area that have no mediaeval or later occupation, so far only two have any evidence of multiple intra-mural dwellings,

Butentau-kala I and Kiuzely-gyr. Yet both of these sites appear to be unlikely urban centres, given the very low density of the intra-mural structures, and the lack of urban features such as streets, water-supply systems or thick occupation layers. This apparent lacuna in the archaeological data is interesting when compared to the clear evidence for dwellings from the extra-mural zones of many of these fortified enclosures, such as at Ayaz-kala discussed above.

#### IV. EXTRA-MURAL SETTLEMENTS

The extra-mural areas immediately surrounding many of the fortresses are rich in archaeological features, including dwellings. The remains of unfortified farmsteads, fields and domestic occupation have been found surrounding fortresses such as the Kurgashin-kala extra-mural settlement (Fig. 8), the Ayaz-kala complex of farmsteads, Kalaly-gyr 2 farms, Gyaur-kala II Chermen-yab and the Kiunerli-kala settlements.<sup>169</sup> These extra-mural settlements have been considered contemporaneous with the nearby fortified sites based

<sup>168</sup> E.g. Akchakhan-kala (Kidd *et al.* 2012; Betts *et al.* 2009: 44; Helms *et al.* 2001: 136–38; 2002: 11–12, 15–16); Aibugiir-kala (Mambetullaev and Khozhaniyazov 1978: 81–85); Ayaz-kala farmsteads (Nerazik 1976: 42–48); Koi-krylgan-kala (Tolstov and Vaynberg 1967: 310); Kalaly-gyr 1 (Rapoport and Lapirof-Skoblo 1963: 141–43).

<sup>169</sup> Khozhaniyazov 2006: 93; Nerazik 1976: 17, 18, 31–48; Tolstov 1948a: 103–04; Vaynberg 2004: 19, fig. 2/5.

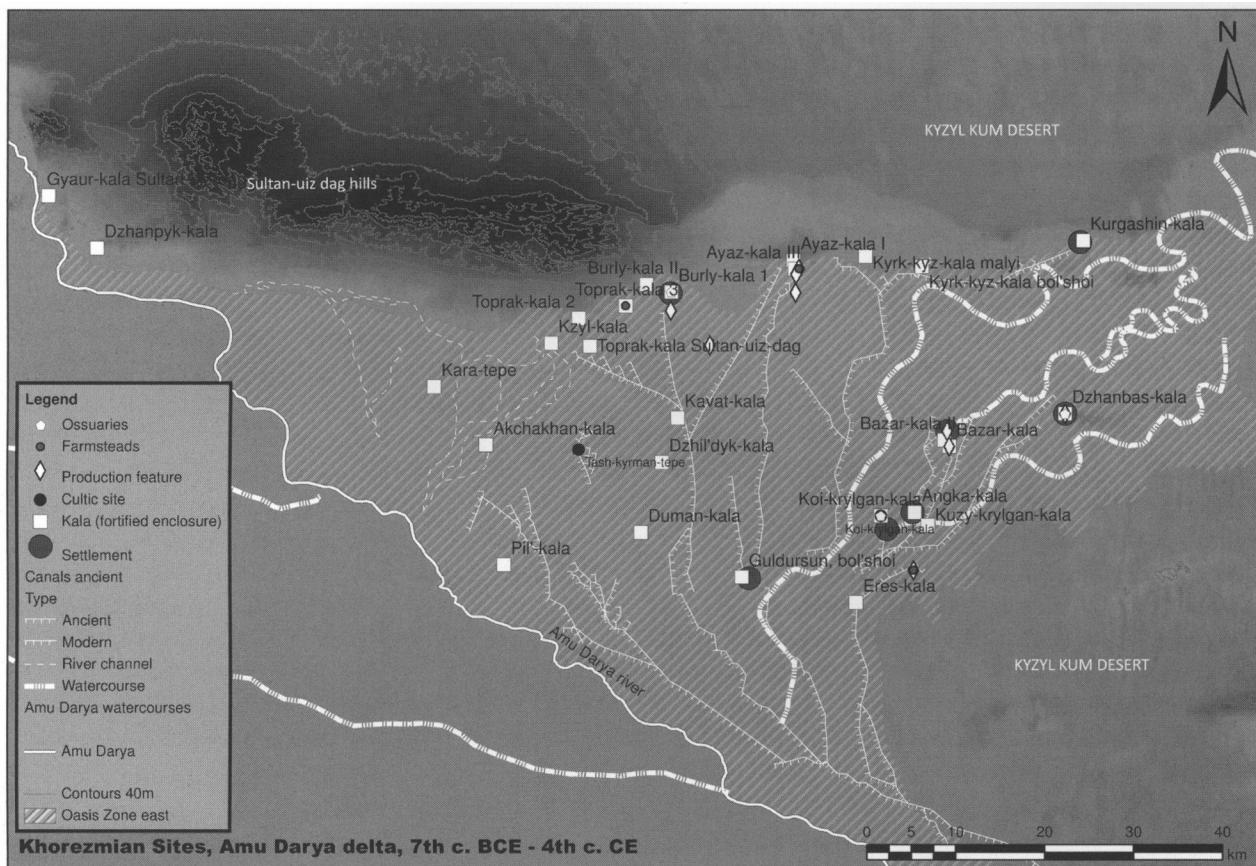


Fig. 9. GIS map of the Khorezmian eastern oasis zone (right bank) showing site types distribution.

largely on surface artefacts, particularly ceramics. Table 3 lists the open settlements and farms that have been dated to the late Iron Age/ancient period. Even in the extra-mural zone within 1.2 km of the fortified enclosure of Akchakhan-kala, work done by the K.A.A.E. suggests that a large dispersed open settlement area may have existed that is possibly contemporary with the main fortified site.<sup>170</sup> The archaeological evidence from Akchakhan-kala indicates that the main canal near this site was constructed at the same time as the fortified enclosures, and suggests that canals may have had a primary function supplying the large amounts of water for mud-brick construction as well as human consumption.<sup>171</sup>

The Khorezmian settlement regime is one of dispersed structures organised as small-scale, open settlements of quite low density often including a fortified site and main supply canal.<sup>172</sup> This can be seen in Figure 9, which is a GIS map of the east oasis zone (or right bank) showing ancient period sites mapped in relation to the main canals and geological features.<sup>173</sup> The canals once ran through the dried-up distributaries of the Akcha Darya (an ancient branch of the Amu Darya), taking advantage of the natural topographic flow of these old watercourses and their rich alluvial deposits.<sup>174</sup>

This type of settlement regime has been identified by Hiebert as a "non-nucleated oasis settlement

<sup>170</sup> Amirov 2007: 94; Baker Brite 2007: 7; Yagodin 2005: 44; although a large farmstead nearby is preliminarily dated to the “Afrighid” period, i.e. sometime after the fourth century AD and therefore later than Akchakhan-kala.

<sup>171</sup> Amirov 2007: 94; Baker Brite 2008: 15; Kidd *et al.* 2012; Yagodin 2005: 44.

<sup>172</sup> Negus Cleary 2007; 2008.

<sup>173</sup> This map is based on my sites database (discussed above) and regional surveys in 2002 and 2005, as well as Andrianov 1969; Nerazik 1976.

<sup>174</sup> Andrianov 1969; Tolstov 1962: 89–96.

TABLE 3. *Open settlements or farmstead sites in Khorezm dating to the ancient period. The dating of each site is given a rating: A – a range of absolute calibrated radiocarbon dates from secure, stratified contexts (extensive excavations); B – relative dating based primarily on ceramics from secure stratified contexts (extensive excavations); C – relative dating based on some stratified and some surface artefacts, primarily ceramics (limited excavation); D – relative dating based on surface artefacts only, primarily ceramics (no excavation).*

Site name	Date	Associated fortress	Type	Reference
Adamli-kala settlement	“Antique” (i.e. between fourth century BC and fourth century AD) (D)	Adamli-kala	Dispersed small settlement	Nerazik 1976: 15
Angka-kala settlement	Second–fourth centuries AD? (D)	Bazar-kala	Small open settlement of c. 10 dwellings	Nerazik 1976: 14
Ayaz-kala complex	Fourth century BC–fourth century AD (B)	Ayaz-kala 1 Ayaz-kala 3	Farmsteads, fields, houses, stores, canals, vineyards, pottery kilns	Nerazik 1976: 31–48; Tolstov 1948a: 103–04
Bazar-kala settlement	Fourth–first century BC? (D)	Bazar-kala	Dwellings, canals, fields	Andrianov 1969: 116–18, figs. 4, 32, 33
Burly-kala I settlement	First–second centuries AD? (D)	Burly-kala 1	Small, compact settlement, pottery kilns	Nerazik 1976: 15, 16
Guldursun settlement	Second–first century BC (D)	Bol’shoi Guldursun	Extensive open settlement	Nerazik 1976: 14
Gyaур-kala I Chermen-yab farmstead	Fourth–third century BC (D)	Gyaур-kala 1 Chermen-yab	Farmstead	Nerazik 1976: 16
Gyaур-kala II Chermen-yab settlement	Fourth–third century BC (D)	Gyaур-kala 1 Chermen-yab	Small group of houses, pottery kilns, canals	Nerazik 1976: 17, fig. 2
Dingil’dzhe	Fifth century BC (B)	none	Multi-roomed elite house	Tolstov 1962: 104–09; Vorob’eva 1973
Kalaly-gyr 2 farms	Mid-fourth–early second century BC (D)	Kalaly-gyr 2	Vineyards, canals, fields	Vaynberg 2004: 19, figs. 2/1, 2/5
Akchakhan-kala (KY) extra-mural occupation	“Antique” (i.e. between fourth century BC and fourth century AD) and possibly fourth to eighth centuries AD (?) (C)	Akchakhan-kala	Fragmentary pottery, bone and stone scatter, walls, dwellings?	Karakalpak-Australian Archaeological Expedition surveys 2002–2009; Baker Brite 2007; Yagodin <i>et al.</i> 2005
Kiunerli-kala settlement	Fourth–third century BC (D)	Kiunerli-kala	Pottery scatter, animal bones, millstones, outlines of houses	Nerazik 1976: 18
Kunya-uaz settlement	“Antique” (i.e. between fourth century BC and fourth century AD) (D)	Kunya-uaz	Large settlement extending on 3 km radius around fortress	Nerazik 1976: 18–19
Kurgashin-kala settlement	Fourth–second century BC (B)	Kurgashin-kala	Dwellings, fields, vineyards, vegetable gardens	Nerazik 1976: 37ff.
Turpak-kala I settlement	Sixth–fifth century BC (C)	Turpak-kala 1	Small dispersed settlement, free-standing houses	Nerazik 1976: 19–20
Turpak-kala II pottery settlement	Fourth–fifth century AD (D)	Turpak-kala 2	Pottery kilns, large open settlement	Nerazik 1976: 19

pattern".<sup>175</sup> He considered it to have been typical of the pre-modern oases of Central Asia. This was a pattern of dispersed and separate building complexes, rather than a pattern of towns and cities. Comparable settlement patterns have been identified in southern Central Asia (e.g. in Margiana, Dehistan and Bactria) during the Late Bronze Age and Early Iron Age, where many smaller "village" sites and a larger, fortified site ("central place") were clustered in the oases of great rivers.<sup>176</sup>

#### V. REFUGES, CATTLE CORRALS, ELITE STRONGHOLDS OR "MOBILE" CENTRES?

The material presented above has demonstrated that the Khorezmian fortified sites of the late Iron Age to the ancient period are difficult to categorise as urban centres because of the lack of evidence for settled occupation within the enclosures. Although some fortified sites did have multiple dwellings within the enclosure wall, these are rare and the enclosures are often too small in area to be properly considered urban settlements. The largest sites often have the remains of large, elite, single dwellings ("palaces"), or monumental buildings with ceremonial/ritual associations, but dwellings are more regularly found in dispersed, low-density precincts in the vicinity of fortified sites, or sometimes standing alone (e.g. Dingil'dzhe), where they are located close to water sources (canals, river channels). The fortified sites therefore must be reconsidered in light of their surrounding settlement regime, rather than as stand-alone settlements.

The large areas of open intra-mural space and the low density of built structures within most of the large *kala* sites recur in the archaeological evidence of the Khorezmian fortified sites. Fletcher has stated that mobile and semi-mobile communities were predominately characterised by sites ranging between 1 and 100 ha.<sup>177</sup> Especially in large settlements, these communities can only operate at relatively low densities and in a dispersed occupation pattern because of their multiple-resource subsistence strategies that include pastoralism. Open spaces often occurred in their settlements and contained a variety of services and activities that may not show up archaeological-

ly.<sup>178</sup> These observations of site-size range and density fit the Khorezmian settlement evidence well.

There are other parallels for this type of low-density, large fortified enclosure site in ancient Eurasia. Vogelsang has suggested that during the pre-Hellenistic period Khorezmian Kiuzelgy-gyr, Afrasiab (Samarkand) and Old Kandahar were refuges and administrative centres, with large open intra-mural areas.<sup>179</sup> There are close parallels for these types of sites found in the steppe being the Xiong-nu fortified centres of the late antique Mongolian steppe, which contained administrative infrastructure, craft and trading areas, as well as large open spaces for itinerant tent housing quarters.<sup>180</sup> Investigations of large Parthian and Sasanian fortified enclosures in the Gorgan plain in north-eastern Iran have shown many sites very similar in nature to the Khorezmian *kalas* with large areas of open intra-mural space.<sup>181</sup> Remote-sensing and excavation evidence has shown that one of these, Qaleh Kharabeh, had rectangular ditched enclosures within the fortification walls that have been interpreted as drainage or boundary ditches for tents.<sup>182</sup> The very similar contemporaneous "nomad" capitals of the K'ang-ku have been discussed above.

The evidence outlined here suggests that the Khorezmian *kalas* do not fit the Wittfogelian hydraulic state model of large urban centres defending canal systems and in light of this, Tolstov's reconstruction requires revision. The *kalas* were not concentrated, diverse population centres that were economically reliant on agricultural surplus. Rather, they were clearly important architectural constructions and significant places in the ancient landscape. Their impressive high walls built in imposing military architectural style were clear statements of power, control and territory in an essentially flat, open landscape. Their size, proliferation and the amount of resources required to construct them also signify their importance to the oasis inhabitants.<sup>183</sup> As Hiebert and Lamberg-Karlovsky have discussed, Central Asian *kalas* were important buildings within an oasis settlement pattern as elite residences, administration centres and refuges for

<sup>175</sup> Hiebert 1992: 111.

<sup>176</sup> Biscione 1979: 207–08; Lecomte 1999: 140; Leriche 1977:

307–08; Vogelsang 1992: 273.

<sup>177</sup> Fletcher 1986.

<sup>178</sup> Vogelsang 1992: 257, 289, 290.

<sup>179</sup> Rogers *et al.* 2005: 803–12.

<sup>180</sup> Kiani 1982; Omrani Rekavand *et al.* 2008: 162–63; Wilkinson *et al.* 2013.

<sup>181</sup> Omrani Rekavand *et al.* 2008: 162.

<sup>182</sup> Kidd *et al.* 2012; Negus Cleary 2007.

local populations.<sup>184</sup> It is notable that the Achaemenid fortified capitals of Persepolis and Susa have also been interpreted as administrative and ceremonial/ritual centres and refuges rather than permanent urban settlements.<sup>185</sup> All of these are appropriate parallels for the Khorezmian fortified sites, and suggest similarities in settlement practices among various Eurasian societies employing mobile strategies.

The archaeological record nonetheless shows that the Khorezmian *kalas* were most clearly connected with elites. The Central Asian pattern of steppe “nomadic” elites ruling the communities of farmers and herders in the oasis and the steppe discussed above,<sup>186</sup> may have relevance for interpreting the socio-political landscape of ancient Khorezm. Given the lack of permanent settlement evidence from within the larger fortified sites and their strong association with elites, the evidence of cultural links between the ancient Khorezmians and the steppe mobile world<sup>187</sup> and the interpretations of similar structures in other Central Asian oases as “nomad capitals”, it is possible that the elite of Khorezm may have identified themselves with an idealised “nomadic” or steppic elite. The influence of, or perhaps the conscious cultivation of, steppe cultural practices by the elite during this period may help to explain the large areas of open space at monumental administrative sites, where the space may have been used for cattle, tented royal courts, trade or martial displays and garrisons, or combinations of these.

## VI. CONCLUSION

This paper has shown that the Khorezmian built landscape does not fit the centralised sedentary state model, but is more complex and perhaps owes more to steppic mobile influences and traditions than has been previously acknowledged. It has been established that the assumptions underlying their interpretation as urban centres and sedentary settlements cannot be relied on. The presence of fortresses in conjunction with canals does not necessarily mean a bureaucratic,

highly centralised state. The location of the sites within an oasis zone does not equate to them being exclusively sedentary and agricultural. Importantly, the size of the sites and the presence of fortification walls do not mean these sites can be assumed to have been urban without further investigation. The survey of the available archaeological evidence has shown that while a few of the smaller fortified enclosures were indeed walled villages, the unusual lack of evidence for sedentary settlement within the larger sites points intriguingly towards a different function or a different mode of habitation, and these functions may well have changed over time or varied from site to site. Rather than urban settlements, it appears that the larger Khorezmian *kalas* were important nodes in a dispersed, low-density settlement system reliant upon multiple resource production methods and subsistence strategies. Further archaeological investigation will be essential to provide a deeper insight into the nature of occupation of these important sites.

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<sup>185</sup> Boucharlat 1997: 217, 221–23; Mousavi 1992: 204, 206.  
<sup>186</sup> Chang 2008: 229; Rapin 2007: 53–56; Stride *et al.* 2009: 81–83.  
<sup>187</sup> Brentjes 1996: 1; Betts 2006: 140; Kidd 2011; Kidd and Betts 2010; Livshits 2003: 169; Negmatov 1994: 443, 456; Rapoport 1994: 161; Tarn 1951: 81; Tolstov 1948b: 104–06; 1953: 114ff.; Vaynberg 1979.
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