Transformation of urban centers in the middle reaches of the Arys river after the Arab conquest
(Southern Kazakhstan)

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Abstract. The cities of the Arys River valley have undergone major changes in their topography over the past two thousand years. Medieval urban centers in the south of Kazakhstan are the result of urbanization processes in the second half of the 1st millennium – the beginning of the 2nd millennium AD. The article presents data on the geography of the studied region, which is the middle reaches of the Arys River. The research methods are mainly related to the determination of morphological features of cities and urban centers of the high Middle Ages. The article also presents a brief analysis of the emergence of urban centers and the features of urbanization processes after the Arab conquest, namely changes in the topography of cities, the emergence of new structural elements. Special attention is paid to the topography of urban centers in the middle reaches of the Arys River – in the largest cities of the region, characteristic morphological elements of infrastructure appear in the form of mosques, bazaars and baths. At this time, fortification is becoming more developed, the largest cities are being surrounded by walls, and an attack warning system is functioning. In the high Middle Ages, due to the growth of the population and the cities themselves, production is divided and complex.

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1 Introduction

The Arys River basin is a part of the region of southern Kazakhstan, in which the development of urban culture and management was based on the features of topography. V.A. Groshev, while studying irrigation issues in Southern Kazakhstan, came to the conclusion that cities grow on the site of those settlements that are not subject to flooding during the floods of the Arys and Syrdarya, and in those conditions where agriculture could develop favorably [Грошев 1980: 110]. The middle course of a river is found on gently sloping land, and is typically identified by its meandering path – the sweeping side to side curves. A similar situation is typical for the morphology of the riverbanks of the middle course of the Arys River. The basin of the Arys River is located between the Talas Alatau ridge and its spurs in the south and the Karatau ridge in the north, the basin boundaries in the flat part to the west have signs of lower reaches – a slowdown in flow and the appearance of fluidity. The most stable part of the Arys River begins

from the confluence of the Balyktsu tributary with it on the right side, until the end of the confluence of the tributaries near the city of Arys [Шульц 1965: 613–620]. The tributaries of the Arys River, both on the right and on the left, in irrigation areas along them, also belong to the middle stream of the Arys River basin. At the confluence of the Arys tributaries into the river itself, the presence of large and flat terraces is often observed. Closer to the upper reaches, in the foothill part, these terraces are equipped with a large number of springs, there is a characteristic swampiness. Cities in the middle reaches of the Arys River were mostly built on a steeper bank, or on a terrace protected from floods and washouts. Territorial and geographical location, water supply, availability of resources are among the important factors of urban development in Central Asia [Эшов 2019: 115].

2 Materials and methods
2.1 Research methods
This study was conducted based on traditional historical methods. Two methods were applied: system and typological. The historical-system method is aimed at studying objects and phenomena of the past as integral historical systems: analysis of their structure and functions, internal and external relationships (morphology), as well as dynamic changes (genesis). By means of theoretical understanding of the phenomenon under consideration, an inductive approach to the object of research was applied – in our case, an empirical typology, that is, an analysis from the particular to the general.

According to V.М. Masson, the archaeological study of the high Middle Ages is characterized by several important directions: the study of written sources, especially numerous Arab-Persian geographical literature, the study of architectural archaeology, as well as one of the traditional techniques – the study of ceramics, especially glazed dishes, an integral part of the medieval elite subculture [Массон 2006: 281]. In order to characterize the urban center, a large-scale study of architectural archaeology is needed. It is the morphological features that are the most important indicators of the change of cities and their transformation into the urban center of the high Middle Ages.

2.2 Materials
An early medieval town. For the studied territory, the most important stage of urbanization was the period of the ethnopolitical association of Kangju, represented by the Syrdarya historical and cultural community [Байпаков 2005: 163] and the local Otrar-Karatau archaeological culture with towns and settlements of the late 1st millennium BC – 5th–8th centuries AD. The genesis of cities and settlements of this period is diverse. Early fortified settlements arose in places suitable for the safe settlement of a small number of people, the presence of a base not only for effective, but also primitive forms of farming. Both agriculture and cattle breeding, as well as hunting and gathering were used. The decline of the settlements of the early stage of urbanization is associated with the crisis of tribal relations and the emergence of an early feudal agrarian society. Early medieval cities were mainly formed on the basis of fortified settlements. Fortified settlements could later act as the urban core and at a certain stage turn into the citadel of the future city [Байпаков 1989: 24–27].

The stage of the rule of the ancient Turkic states in the early Middle Ages – 6th–8th centuries AD is associated with the Turkic-Sogdian synthesis in all spheres, resulting in the growth of cities and the strengthening of the role of the Great Silk Road. Recent studies have shown that some of the cities in the middle reaches of the Arys River cease to exist in the 8th – early 9th centuries. The monuments, which had a bright cult orientation, were destroyed and desolated during the intrusion of the Arabs. The settlement of
Zhuantobe, which had a cult orientation, is being extinguished [Железняков 2011: 100]. The settlement of Tortkoltoobe, located in the valley of the Kumyshbulak River, is also dying away [Байтанаев 2017: 30]. The same fate befell other cities in the region. For example, in the settlement of Sidak, according to Е.А. Smagulov, a pagan temple was destroyed by fire within the second quarter of the 8th century [Смагулов 2004b: 105–107]. Few of the cities of this period were able to get stronger and turn into economic and political centers of the region. Civil strife, as well as the constant struggle with foreigners weakened the cities of the 7th–8th centuries, as a result, only some of them were able to develop into urban centers of the subsequent time. The active Islamization of the region and urban residents began at the end of the 8th century, which is reflected in the concealment of the former cult life and its private nature. This is already indicated by changes in civil architecture, namely the appearance of hearths with a cult design [Смагулов 2004a: 111].

*Medieval urban center.* At the end of the 8th century in Central Asia, while the completion of Islamization, the role of the local nobility was strengthening. At the same time, civil strife stops, centralized power is established, and trade relations reach another level due to the entry of Central Asia into the Muslim world. After the restoration of cities in the 9th century, the city grew beyond the walls. In the future, despite the political fragmentation in the 11th–12th centuries, the growth of cities continued in all regions of Central Asia, moreover, in areas bordering on nomadic tribes, these processes were more intense [Беленицкий 1973: 133–134].

During the Arab conquest, the cities of Central Asia were the complete personification of power over the surrounding territories. In the case of the conquest of the city, the district was subordinated to the conquerors [Беленицкий 1973: 145]. With the arrival of Islam and the governors of the caliphate in the region, the city's features change. The early medieval city was characterized by a two–part division – the citadel, that is, the residence of the ruler and, in fact, the city itself with the population. With the establishment of Islam, a three–part division appears due to the encirclement of the suburb – rabad. The new division implied the presence of a citadel – kuhendiz, an inner city – medina (shahristan) and rabad with trade and craft spots [Филанович 2007: 69]. The growth of the city with social and economic development was due to the consolidation of buildings, but the urban planning structure was not violated in any way. In the early Middle Ages, urban life was confined within the city walls, but some elements of life penetrated beyond the city. Adjacent territories were settled at the expense of the ruler's residence, cult centers and individual craft quarters outside the walls. It happened chaotically, and these elements did not get into the urban planning structure in any way. At the turn of the early and high Middle Ages, settlements become part of something larger – urban centers arise, some of which turn into commercial and craft suburbs – rabads [Грицина 2013: 161]. Cities had different structures and typologies, and mostly originated in early times, going through the stages of formation from small unprotected settlements to large cities with developed infrastructure and a high degree of protection.

### 3 Results and discussion

One of the signs of the development of the urban center was the developed structure of the fortification. The development of military thought, the availability of a large number of funds and labor served to the beginning of the construction of long walls. Long walls surrounded the agricultural crops outside the city walls and prevented the raids of nomads. The long walls of two large cities – Ispijab-Sairam and Karaspan-Karasaman – are known in the studied territory. According to Baitanayev, the long walls of Karaspan and Ispijab appear after the construction of similar structures in Binket [Байтанаев 2007: 80].
B.A. Zheleznyakov gave a detailed analysis of the events preceding the construction of the long walls, as well as the purpose of the long walls. Long walls arise with the establishment of Islam in the 9th century and are associated with innovations. The main purpose of the construction of long walls was the need to protect agricultural crops before the adoption of Islam by the local population, but also in this way the boundaries of the areas and regions could be designated after the drop of fortification functions [Железняков 2009: 174–196]. No less important attribute of fortification in medieval times on the territory of Central Arys are the guard towers – karaultobe. Karaultobe are considered the most important elements of the defense system and warning of an attack. Recent studies on karaultobe have shown their dispersal around large medieval cities and their use throughout the early and high Middle Ages. Very often, the karaultobe were located at heights near the city located in the lowlands, which, in particular, was noticed during the survey of the area around the Khankurgan settlement, as well as near other cities of the district [Байтанаев 2019: 21–29].

Various institutions of power were needed to conduct managerial activities in the medieval period. If earlier, before the Arab conquest, it was considered the residence of the feudal lord, now the city was the administrative center representing the state in the person of the governor [Беленицкий 1973: 162]. The governor was appointed by the first person of state power, from among those close to him. The presence of a governor in large medieval urban centers was determined by a protected and separated from the main development of the territory – a citadel. The power and the very designation of the city as the center of the district was determined by the presence of a mosque. The military actions during the Arab conquest did not cause much damage to the cities. Only pagan temples and idols were looted or destroyed. Temples were often converted into mosques after the war [Беленицкий 1973: 151]. By the middle of the 8th century, almost all the lands of Central Asia submitted to the caliphate. Mosques were being built everywhere at that time, but only the presence of a jumah mosque indicated that it was a city [Хмельницкий 1992: 13]. The construction of cathedral mosques also marked the designation of the rows of cities as the centers of the district. The presence of mosques in the urban centers of the middle reaches of the Arys River Valley remains unanswered to a number of cities. According to written sources, there were medieval mosques in a number of urban centers. In the «Kitab al-masalik val-mamalik» by ibn Hawqal, the cathedral mosque in the medina of Ispijab is mentioned. In «Ahsan at-takasim fi-ma’rifat al-akalim» al-Maqdisi it is also said that there is a cathedral mosque in the medina of Ispijab. According to al-Maqdisi, there was also a cathedral mosque in Jumishlagu, Arsubaniket, Balaj, Burukh and Azakhket [Волин 1960: 79–80]. V.M. Masson identifies a mandatory architectural triad for the time we are studying. Such buildings as a mosque, a madrasah and a mausoleum are the most important architectural innovations with the advent of Islam. There were several types of mosques: district mosques for daily visits, jumah mosques, and also holiday mosques, usually located outside the city. A mandatory attribute of the mosque was a minaret, and for large urban centers, the minaret could stand separately from the mosque [Массон 2006: 283].

According to M. Weber, in an Asian city, power was only in the hands of senior officials or the ruler of the state. There could be no question of the presence of features of communal governance [Weber 2017: 35–36]. To date, the Central Asian phenomenon of «mahalla» is known. The «mahalla» as the lowest part of the administrative-territorial governance is mentioned in the medieval sources «Divan lugat at-turk» and «Baburname» [Маликова 2014: 89]. The «mahalla» was heterogeneous, most often residents of different social classes and specializations could live nearby. The communal way of life of the «mahalla» gave rise to a system of self-government based on personal ties and responsibilities [Сухарева 1976: 36]. The «mahalla» is most often referred to as a late medieval phenomenon, the question of communal governance in the early and high Middle Ages in Central Asia is not known.
The most important were the presence of agricultural and handicraft institutions, which played a great role in maintaining the economy of the urban center and the whole state. The emergence of urban centers, as well as the growth of cities, according to E.I. Ageeva and G.I. Patsevich, occurs because of the development of crafts. Cities became a place of concentration of handicraft production and a place of sale of products and services. In the future, some cities become a place of concentration of individual industries [Агеева 1958: 74]. One of the number of archaeological materials in large cities is ceramics. The urban centers of the Middle Ages in the high Middle Ages were full of locally produced products, as evidenced by large collections of ceramic material [Байтанаев 2016: 92–145, 166–194]. Production items in the form of pottery tools and a large number of manufacturing defects were also found [Байтанаев 2016: 286–309]. Pottery production in the high Middle Ages had a large scale in almost all urban centers, including the Khankurgan settlement in the middle reaches of the Arys River [Дубягина 2015: 132–135]. Ceramics and its production can also be considered one of the signs of an urban center.

Trade institutions – bazaars, which actively functioned in medieval cities and urban centers, were also very important. According to the urbanist E. Ennen, the commercial functions of the city, namely the presence of a market or bazaar, make it the central point of life [Ennen 1975: 84]. Al-Istakhri’s “Kitab massalik al-mamalik” mentions the presence of crowded Ispijab markets, and ibn Hawqal’s “Kitab al-masalik val-mamalik” states that Ispijab markets were located both in medina and in rabad. Al-Maqdisi in the work “Ahsan at-Takasim fi-ma’rifat al-akalim” claimed that there are covered markets in the medina of Ispijab, there is a market for fabrics, and there is also a market in rabad of Karategin. In Khurlug (Mazarattobe), according to al-Maqdisi, the channel passed among the markets, there were also markets in Jumishlagu, Balaj, Burukh, Deh Nujiket, and in Azakhket there was a market in rabad [Волин 1960: 78–81]. Further, the development of trade often led to the transformation of individual streets into shopping precincts – tims [Массон 2006: 283]. The city’s own minting is more a sign of the center of the district, and the presence of coins of neighboring states is an indirect sign of an urban center with a developed trade. For example, the Kenjide coinage existed under the Chagataids, that is, the district was of great importance during the high Middle Ages [Бурнашева 2001: 136–149]. Numismatic data of the high Middle Ages are also an indicator of the development of cities and trade. The «silver crisis» of the beginning of the 11th century, in addition to the depletion of mines, had a much more significant reason – a sharp increase in the population [Нуржанов 2013: 54]. In this regard, there was an expansion of cities, trade was significantly intensified. It can be concluded that the urban centers of the vast region of Central Asia reached the peak of their development during this period.

Recreational and public institutions were no less important for cities. Along with mosques and market squares, baths were considered the most visited places in the city. New in the urban life of medieval settlers were precisely the constructions of baths, which began to appear from the 8th century [Беленицкий 1973: 307–308]. Baths became more widespread later, in the 10th–12th centuries. The city, which had baths, was considered well maintained and comfortable for the life of citizens. In 2013, the remains of architectural structures in the form of a bath were discovered on the territory of the shahristan of the settlement of Sairam (Ispijab). At the time of the work, the furnace part of the bath was preserved, interior elements were also fixed. The bath belonged to the category of hammam, and of very good quality and large size. Unfortunately, the condition of this bath was very bad [Байтанаев 2013: 93]. A bathhouse from the Khankurgan settlement was found in 2015. The remains of a medieval public building made of burnt bricks represent the bathhouse. This bath belonged to one of the early types of baths that preceded the cross-shaped layout of the hammam. Earlier, in 2003, a bathhouse in the village of Ekpindi was excavated
on the territory of the Ispijab district – this is a suburban structure with underground heating characteristic of the early baths of the Central Asian region. By type, the bath belonged to the hammam type, was sunk into the ground, the placement of rooms in the structure corresponded to the principle of increasing temperatures. As already noted, this suburban structure was most likely erected in the residence of a nobleman, presumably of high rank [Байтанаев 2007: 287–293].

4 Conclusions

Urban centers in the middle reaches of the Arys River in medieval times had distinctive features. These centers were located in geographically convenient and favorable peripheries for managing the economy. In this regard, the opinion of L. Dodhudoeva is interesting, who believes that large urban centers mainly served as the capital, and small urban centers served as craft, trade and religious centers of local significance [Додхудоева 2015: 58–64]. With a fairly large number of towns and settlements in the areas of the middle reaches of the Arys, the obvious centers were the cities that were mentioned in medieval sources. This is a key feature for an urban center. Also, the presence of external signs was important for determining the urban center. With the advent of Islam, the presence of a cathedral mosque – a jumah mosque, the presence of bazaars in the city or in the periphery and active trading activity – the result of the functioning of the Silk Road, as well as the presence of public amenities, in the case of the canons of Islam – the presence of baths – became important attributes of a large city. The presence of a developed fortification after the change in the general topography of the city – the appearance of long walls and extra-urban warning systems – karaultobe, is rather an indirect attribute of urban centers, rather a forced measure due to the military-political situation in the early years of the establishment of Islam.

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