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«Ұлы Дала тарихы мен мәдениеті»
ғылыми бағдарламасы

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫ БІЛІМ ЖӘНЕ ҒЫЛЫМ МИНИСТРЛІГІ
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Ә. Х. МАРҒҰЛАН АТЫНДАҒЫ АРХЕОЛОГИЯ ИНСТИТУТЫ

МАРҒҰЛАН ОҚУЛАРЫ – 2020:

«Ұлы Дала археологиялық және пәнаралық зерттеулер аясында» атты халықаралық ғылыми-тәжірибелік конференция материалдары
(Алматы қ., 17–18 қыркүйек 2020 ж.)

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Басылым отандық және шетелдік археологияның өзекті мәселелерін зерттеумен айналысатын мамандардың барлығының қызығушылығын тудырады.

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КОМИТЕТ НАУКИ
ИНСТИТУТ АРХЕОЛОГИИ ИМЕНИ А. Х. МАРГУЛАНА

МАРГУЛАНОВСКИЕ ЧТЕНИЯ – 2020:

материалы международной
научно-практической конференции
«Великая Степь в свете археологических
и междисциплинарных исследований»
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В первом томе сборника сосредоточены статьи по истории археологической науки, результатам междисциплинарных исследований, полученных в ходе изучения археологических памятников на территории Евразии, а также итоги аналитических изысканий материалов, датируемых широким хронологическим диапазоном.

Издание будет интересно всем, кто занимается изучением актуальных вопросов отечественной и зарубежной археологии.

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Proceedings of the International scientific and practical conference "Great Steppe in light of archaeological and interdisciplinary research" (Almaty, September 17–18, 2020)

Volume 1

Almaty
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The first volume of the proceedings is focused on the history of archaeological science, results of interdisciplinary research into the archaeological sites in the territory of Eurasia, as well as results of analytical surveys of materials dating to a wide chronological range.

The volume will appeal to the researchers working on topical issues of national and foreign archaeology.

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H. Härke, I. A. Arzhantseva, A. A. Tazhekeev, M. Bronnikova, I. N. Modin, A. V. Panin

INTERDISCIPLINARY FIELDWORK AT JANKENT: EXPLORING EARLY MEDIEVAL URBANIZATION ON THE LOWER SYRDARYA

Our project at Dzhankent/Jankent addresses the origins and development of a town in the first millennium AD in the eastern Aral Sea region. In its current format, the project has been run since 2011 in collaboration of the University of Kyzylorda (Kazakhstan), the University of Tübingen (Germany) and the Russian Academy of Sciences (Moscow). Key questions of our work relate to the factors that may have had an influence on the process of urbanization: multi-ethnic population, economic and environmental change, trade on the Northern Silk Road, and the presumed state formation of the Turkic Oguz nomads. These issues are explored with an interdisciplinary methodology which, in addition to conventional archaeological excavation, includes a range of disciplines and approaches such as geophysics, geomorphology, pedology, zooarchaeology, stable isotopes from animal bones, and the analysis of ceramic materials. The results so far are challenging old and new hypotheses about the 'marsh town' of Jankent.

Keywords: Northern Silk Road, Khorezm, Oguz, urbanization, state formation, geoarchaeology

Жанкент қаласындағы пәнаралық зерттеулер: Сырдарияның төменгі ағысындағы ерте ортағасырлық урбанизация мәселесін зерттеу

Жоба Арал теңізінің шығыс аймағында біздің дәуіріміздің бірінші мыңжылдығындағы қаланың (Жанкент) пайда болуы мен дамуына арналған. Қазіргі форматта жобаны 2011 ж. бастап Қызылорда университеті (Қазақстан), Тюбинген университеті (Германия) және Ресей ғылым академиясы (Мәскеу) бірлесіп жүзеге асыруда. Біздің жұмысымыздың негізгі мәселелері урбанизация процесіне әсер етуі мүмкін факторларға қатысты: көпқұрамды халық саны, экономикалық және экологиялық өзгерістер, Солтүстік Жібек жолындағы сауда және түрік-оғыз

© **Heinrich Härke,** *Department of Medieval Archaeology, University of Tübingen, Germany*; heinrich.haerke@uni-tuebingen.de; *Centre for Classical and Oriental Archaeology, Higher School of Economics, Moscow, Russia*; hghhaerke@hse.ru
Irina A. Arzhantseva, *Institute of Ethnology and Anthropology, RAS, Moscow, Russian Federation; Centre for Classical and Oriental Archaeology, Higher School of Economics, Moscow, Russia;* arzhantseva@rambler.ru
Azilkhan A. Tazhekeev, *Research Centre for Archaeology and Ethnography, Korkyt-Ata State University of Kyzylorda, Kazakhstan*; azik8484@mail.ru
Maria Bronnikova, *Department of Soil Geography & Evolution, Institute of Geography, RAS, Moscow, Russia*; mbmsh@mail.ru
Igor N. Modin, *Faculty of Geology, Moscow State University, Moscow, Russia*; imodin@yandex.ru
Andrey V. Panin, *Department of Geomorphology, Faculty of Geography, Moscow State University; Institute of Geography RAS, Moscow, Russia*; a.v.panin@yandex.ru

көшпелілерінің мемлекет құруы. Жобада геофизика, геоморфология, топырақтану, зооархеология, жануарлар сүйектерінен алынған тұрақты изотоптар және керамикалық материалдарды талдау сияқты жаратылыстану ғылымдарының әдістері кеңінен қолданылады. Тіпті аралық нәтижелердің өзі Жанкент «батпақты қаласының» пайда болуы мен қызметі туралы бұрын және бүгінде қалыптасқан бірқатар болжамдарға толық жауап бермейді.

Түйін сөздер: Солтүстік Жібек жолы, Хорезм, Оғыз, урбанизация, мемлекеттіліктің қалыптасуы, геоархеология

Междисциплинарные на городище Джанкент: исследование проблемы урбанизации на Нижней Сырдарье в раннем средневековье

Проект посвящен исследованию происхождения и развития города в I тыс. н.э. в Восточном Приаралье. В своем нынешнем формате проект осуществляется с 2011 года в сотрудничестве с Кызылординским госуниверситетом им. Коркыт Ата (Казахстан), Тюбингенским университетом (Германия) и Российской Академией наук (Москва). Ключевые вопросы нашей работы касаются факторов, которые могли повлиять на процесс урбанизации: полиэтничное население, экономические и экологические изменения, торговля по Северной ветке шелкового пути и предполагаемый ход генезиса тюрок-огузов. В проекте широко применяются естественнонаучные методы, такие как геофизика, геоморфология, почвоведение, зооархеология, исследование стабильных изотопов из костей животных и анализ керамических материалов. Даже промежуточные результаты ставят под сомнение как старые, так и некоторые недавно сформулированные гипотезы о происхождении и функционировании «болотного городища» Джанкент.

Ключевые слова: Северный шелковый путь, Хорезм, Огузы, урбанизация, государственное образование, геоархеология

Introduction. Jankent is a deserted early medieval town about 25 km south-west of the modern town of Kazaly (formerly Kazalinsk). It has not been built over in later times; today it is a scheduled monument marked by the ruins of ancient walls which are up to 10 meters high in places and enclose an area of 16 ha. Several Arab geographical texts of the 10th – 12th centuries mention a town of the Turkic Oguz nomads called 'Jengi-Kent' (Turkic for 'New Town'), a couple of sources (Ibn Rustah, Ibn Hawqal) identify it as the seat of the *yabgu*, the head of the Oguz tribal confederation. As early as the 1920s, V.V. Bartold identified Jankent as the site of the recorded Jengi-Kent [Bartold, 2002]. The town is also important for Kazakh identity because it is believed to be the home of the Kazakh cultural hero, Korkyt Ata, the reputed inventor of the traditional two-string lute (*kobyz*).

While often described as the Oguz 'capital', Jankent is actually located on the interface of the steppe nomads to the north, and the civilization of Khorezm to the south. It is also on the crossroads of two key trade routes: the east-west trade along the northern branch of the early medieval Silk Road (along the Syrdarya corridor), and the north-south route from the Volga Bulgars to Khorezm (described by Ibn Fadlan and Al-Muqadassi in the 10th century). These routes intersect in the northern Aral Sea region, which may explain the curious concentration of early medieval towns in the delta of the Syrdarya (fig. 1). Sergey P. Tolstov coined the term 'marsh towns' for them, on account of their location in a, then, wet and marshy landscape [Tolstov, 1947; 1962]. Since that time, the delta has dried out, creating the current desert-

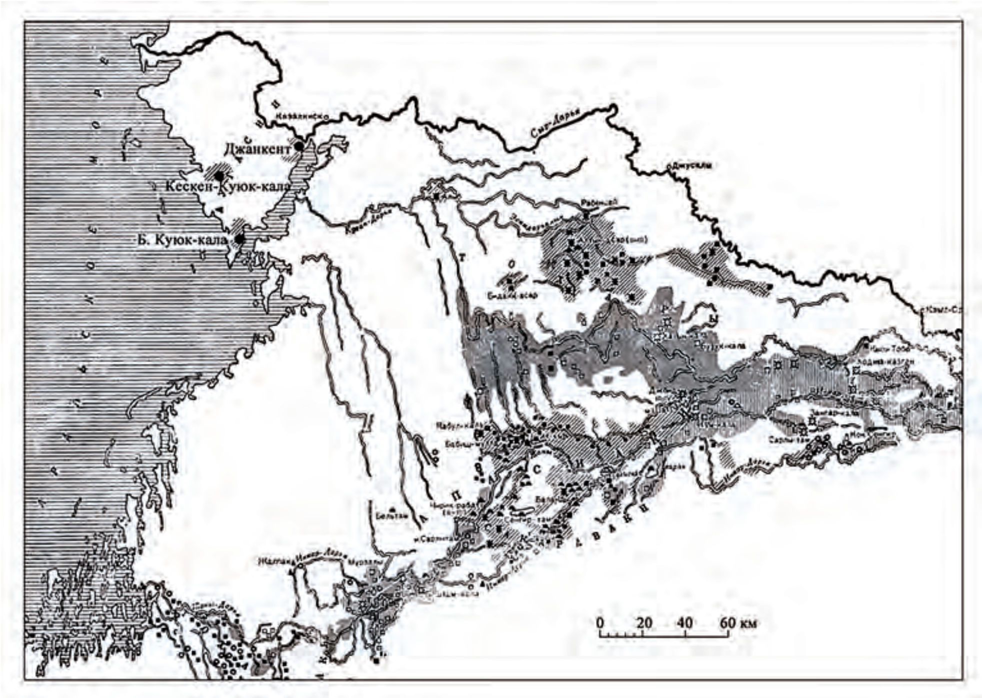

Fig. 1. Map of the Syrdarya delta with location of Jankent and other key sites

steppe. Among these 'marsh towns', Jankent stands out because of a rectilinear wall circuit, a corner citadel, and a regular lay-out of buildings in the western half, close to the citadel (fig. 2).

History of research. Fieldwork at Jankent started in the 18th century [Arzhantseva, Gorshenina, 2018], but excavations which satisfy modern standards have only been undertaken since 2005 by a Moscow team [Arzhantseva et al., 2007], and in 2006 by an Almaty team [Akhatov et al., 2008]. Discoveries before 2011 included a built-up area with a metal workshop and small houses in Central Asian style along a small street or within an urban 'estate', all of 9th/10th century date [Arzhantseva et al., 2007; Arzhantseva et al., 2010] (fig. 3). Trenches in the citadel by an Almaty team have remained largely unpublished, but have apparently failed to go deeper than the 9th/10th century layers of the Oguz town [Baipakov et al., 2012]. These earlier excavations were too limited in extent and depth to provide conclusive answers about origins, development and lay-out of the town.

As early as 1971, Jankent was linked to environmental issues by Levina's suggestion that a shift of the Syrdarya river bed may have led to a displacement of the Dzhetyasar/Jetyasar population which then founded Jankent (Levina 1971; 1996). This suggestion has not been followed up so far by systematic interdisciplinary research. The change over time of river channels in the Syrdarya delta has recently been explored by Tazhekeev on the basis of distributions of archaeological finds [Tazhekeev, 2012; 2013].

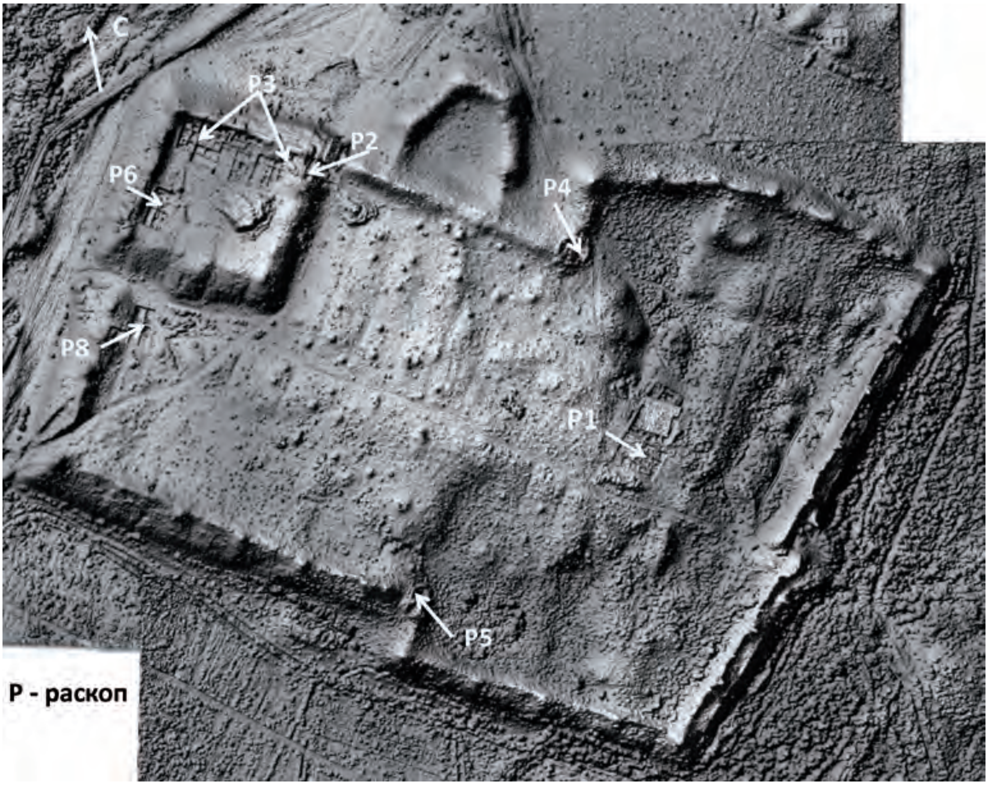

Fig. 2. Relief plan of Jankent with locations of trenches (2019)

The Jankent Project: methodology. Fieldwork with an interdisciplinary methodology involving a geoarchaeological approach has been conducted since 2011 by an international team from the University of Tübingen (Germany), the Russian Academy of Sciences (Moscow) and the regional University of Kyzylorda (Kazakhstan) [Arzhantseva et al., 2012]. After initial support from the Wenner-Gren Foundation (USA), the project is currently funded by the Deutsche Forschungs-Gemeinschaft (project no. 389351859). The core of the methodology is an integrated programme of scientific fieldwork (geophysics, geomorphology, soil science) supporting conventional archaeological trenches at key points of the town, followed up with a series of post-excavation laboratory analyses (soil science, osteology and stable isotopes of animal bones, analysis of ceramic materials, extensive series of radiocarbon and OSL dates). Key parts of this methodology have been applied earlier by members of our team at another early medieval site in central Eurasia, the Uighur site of Por-Bazhyn in Tuva [Modin et al., 2010; Panin et al., 2012].

Prospection (mainly magnetometry and electric resistivity) by the Moscow geophysics team now covers all of the interior, providing a plan of the town in the 10th – 11th centuries. It has also pinpointed a number of features which we intend to excavate in the final fieldwork season (2020); these include a circular ditch in the centre of the town, and a rectangular building on a clay platform close to the inside of

Fig. 3. Houses revealed in older excavations in Trench R1 (2005–2008)

the northern town wall. Another prospection technique, that of electrotomography, has given vertical sections at critical points, particularly in the deeply stratified citadel area (fig. 4). It showed that the higher level of the citadel interior as compared with that of the lower town (shahristan) resulted from a natural elevation or from intensive occupation (tell). Prospection also confirmed the regular lay-out of the lower town (visible on aerial photographs) close to the west gate, implying the existence of a planning authority; and it identified large building complexes within the town, east of a shallow north-south boundary ditch, hinting at social divisions within the population. Outside of the town, prospection suggested fireplaces, perhaps from workshops, north of the town wall; however, a trench (R9) at one of these suspected 'workshop' places in 2019 did not produce any relevant evidence.

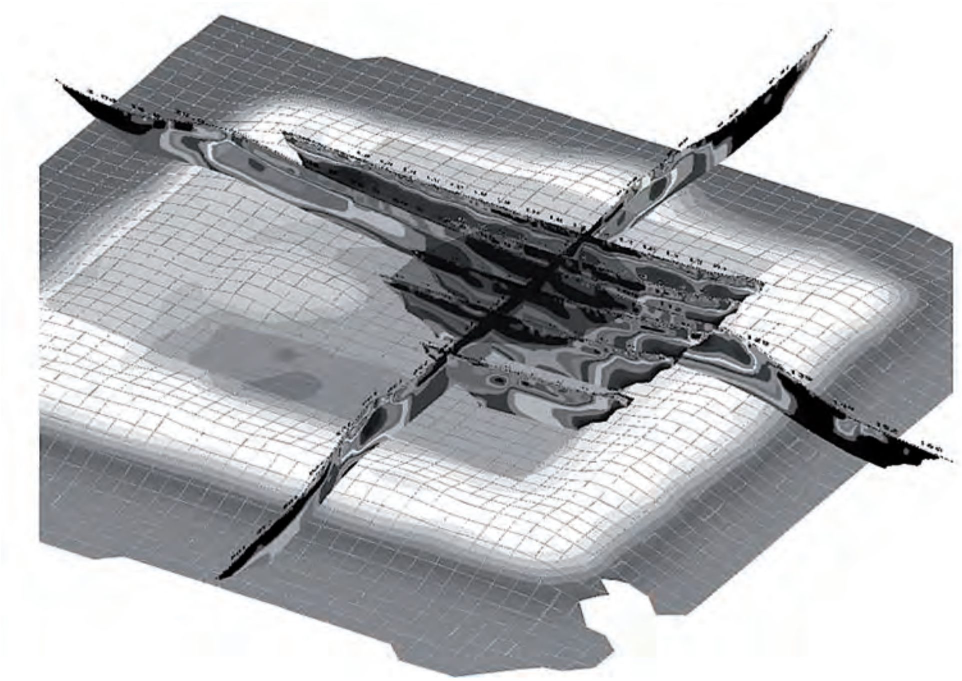

Fig. 4. Electrotomography sections overlaid on a 3D relief model of the citadel (2011)

Fig. 5. Mechanical coring in 2019, with inspection of a core in progress (foreground right; in the background: east wall of Jankent)

The semicircular annexe attached to the northern town wall is a good example of the potential of interdisciplinary work (fig. 2). Two trenches within the annexe did not produce any evidence of structures or buildings; this was confirmed by geophysical prospection. Manual coring showed up a thick, dark occupation layer. Soil analysis proved keratin-eating microfungi, implying the presence of livestock or humans inside this annexe; the low phosphorous levels in the occupation layer suggest humans rather than animals. This might conceivably have been a cattle corral or a slave pen: both, cattle and slaves were traded from the Volga region to Khorezm according to the testimony of Al-Muqaddasi in the 10th century, and must therefore have passed through the Aral Sea region.

Geomorphological and pedological work focuses on the contemporary and historical topography of the site and its surroundings, and tries to identify functional zones within the town. This work is aimed at two main questions: the nature and intensity of occupation inside the walls, and the reconstruction of the environment and dating of the river palaeochannels around Jankent. Within the town, manual cores showed that the occupation layers in all trenches have a depth of about 4 metres or more. In order to obtain answers to our questions within the time limit of the project, it was decided to change our fieldwork strategy by shifting the emphasis of fieldwork in 2019 towards coring. A grid of 25 coring points was set out across the town where a mechanical drill (hired from a Moscow geophysics firm) dug cores of 10 cm diameter and up to 8 m deep, at each coring point down to natural (fig. 5). These cores are now (early 2020) being analysed in the laboratory, and after C14 dating (with three to four dates from each core) they will give us an outline of the entire occupation history of the site. Visual inspection of the cores on site already provided first essential insights, some of them destroying initial hypotheses and tentative identifications of features.

The location of palaeochannels is crucial for interpretations relating to trade along the river, and to the reasons for the eventual abandonment of the town. In 2018, coring was started in a palaeochannel of the Syrdarya. The OSL dates obtained from the samples are, however, much earlier than the town, so the search for the nearest access to the river, and thereby the Aral Sea, was continued in 2019 south of Jankent, with further OSL samples taken (for dating in the Curt Engelhorn Centre for Archaeometry, Mannheim, Germany).

The osteological study (by A. Haruda, Halle, Germany) and isotope analyses (by A.V. Miller, Michigan, USA) of animal bones are important elements of our project because these bones are one of the largest categories of finds, and because they are essential for answering questions about subsistence economy and livestock trade. Fish remains which have been recovered, in particular, from the lowest occupation layers of the site are potentially informative for the issue of economic change from the earliest settlement to the later town. Work along these lines has only started recently, but there is already one interesting success: the identification of cat bones from deposits just outside the citadel. An international and interdisciplinary team carried out osteological, palaeopathological, genetic (DNA), stable isotope and radiocarbon analyses of the bones. Their results highlight that this is the first cat from a settlement context in Central Asia (publication in progress). With a C14 date around AD 800, the cat actually pre-dates the late 9th or 10th century lay-out of the town by almost a century; this is significant because cat-keeping was essentially an urban phenomenon.

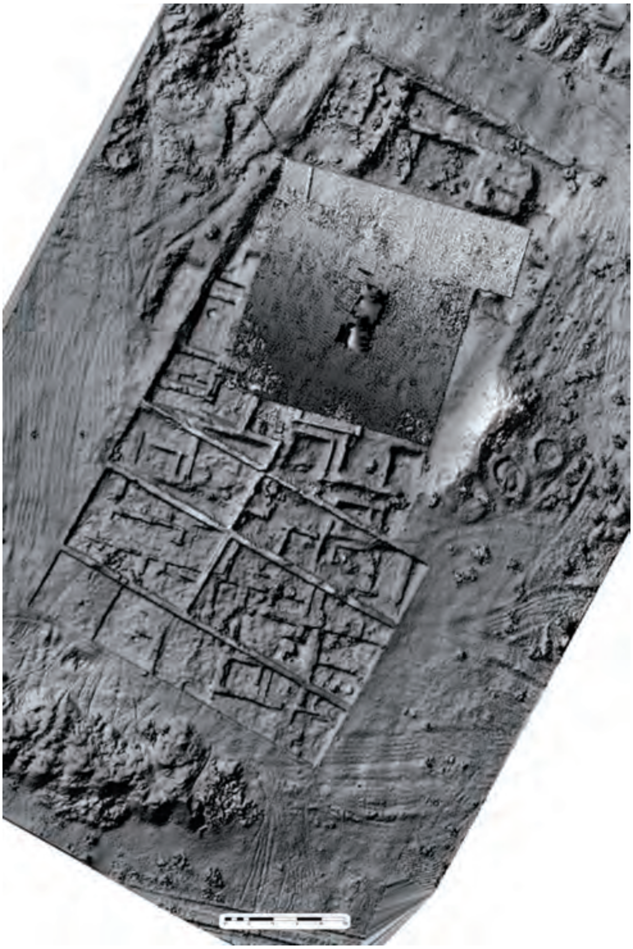

Fig. 6. Relief plan of Trench 1 showing excavated houses (2019; blank area: roof cover over restored house remains)

Apparently modern burials are a regular occurrence in our trenches, particularly in the citadel (trench R6) and just south of it (Trench R8). In 2019, a Tübingen M.A. student (S. Reininghaus) was able to document a total of 16 graves and inspect the human bones from them during and immediately after excavation, before the bones were re-buried in the present-day village cemetery of Urkendeu (Jankent). The large number of clear observations of malnourishment and stress indicators lend support to our earlier speculation that these may be burials of famine refugees of the early 1930s (see Arzhantseva, Tazhekeev, 2017).

Other post-excavation analyses and conservation measures are intended to provide further data for the interpretation of the development and functions of Jankent. Pottery of the 7th – 11th or 12th century is the most frequent category of finds from the site; it is the object of research by a Tübingen Ph.D. student (G. Amirgalina, Kyzylorda) who is focusing at the moment on determining the origins of the clays used in making the pottery found at Jankent. This line of research is now producing the first interesting results which suggest non-local origins. An outstanding find of the 2019 season is currently being conserved and awaiting study by a specialist: three eggs found in a 10th century pottery vessel, all of them with Arabic lettering.

The Jankent Project: interim results of archaeological fieldwork. Since 2011, conventional archaeological trenches have been continued in, or newly put into, the walls of town and citadel (R2 and 5), the interior of the citadel (R6), the lower town (shahristan; R1 and 8) and north of the town (R9) (fig. 2).

Trench R2 is located at the junction of northern town wall and citadel wall. Occupation layers at this point show deep stratification down to a depth of 8 metres measured from the current top of the citadel wall; a trial trench added another 2 metres without reaching natural. Radiocarbon dates of the upper layers (above the trial trench) extend back to the 8th to 10th centuries; radiocarbon dates are not yet available for the lowermost layers. Extensions of Trench 2 showed a series of semi-circular towers on the citadel wall, and occupation layers inside the 10th century wall, reminiscent of the Khorezmian tradition of 'live-in walls'. Recent fieldwork has not produced any new evidence that would contradict a 10th century date for the fortifications (and thus, the date for the overall lay-out of the town). The top of the wall was sealed by a burnt layer; this is an interesting contrast to the lower town where there is no evidence of a conflagration in the top layers.

Trench R5, placed in the Z-shaped angle close to the middle of the southern town wall, was intended to check if the 'cross-bar' which forms the eastern half of the lower town was a later addition. The observations in this trench suggest that the eastern and western halves of the wall had been built in a single process, implying that the T-shaped lay-out of the wall circuit was part of the original design, linking it to similar Khorezmian enclosures. Settlement layers were found at this point under the base of the town wall, with pottery dating back possibly to the 8th or even the 7th cen-

Fig. 7. Stratigraphy of a house in Trench 1 (2017)

tury; radiocarbon dates (Institute of Geography, RAN Moscow) gave a sequence from 7th/8th to 10th/11th centuries. This clearly implies the existence of a predecessor settlement, probably unenclosed, under the Oguz-period town.

In the shahristan, a domestic quarter and a metal workshop had been uncovered in the 2005 – 2008 excavations. Work continued here in Trench R1 confirmed the earlier picture of a dense arrangement of small houses dating mostly to the 10th century, but also revealed a much deeper stratification than had previously been found (fig. 7). In one location, a minimum of four construction phases could be distinguished, with a 'firedog' from the lowest layer closely resembling those from the upper layers. An even greater surprise was a patch of wall painting preserved on the wall of a small house in the large building complex ('estate') in the eastern half of the town, hinting at the possibility of an elite element in the lower town. In 2018, a new trench (R8) was opened close to the west gate where stacks of unused mud bricks were found in the top layer, suggesting that building activities continued until the abandonment of the town. Below this, a house of standard layout produced a bronze cauldron in situ in the room, next to broken pottery vessels.

In the interior of the citadel, work in the new Trench R6 has uncovered small buildings of domestic character, with a quern in situ in one of the houses. So far, there is no evidence of large, let alone monumental buildings which might be expected in the citadel of a 'capital' in this region, and this negative observation extends to the evidence from the older excavations here (Trench R3). The only aspects so far which are unique to the citadel are the traces of a large fire at the end of its occupation (in R2), and finds of small sherds of glazed pottery which cannot be earlier than the beginning of the 12th century. These sherds may mean that Jankent was abandoned a century later than hitherto thought, or they may indicate a short re-occupation of the citadel well after abandonment of the town, perhaps during the existence of the nearby Golden Horde town of Mon-tobe (located less than 2 km to the northwest of Jankent).

Pottery continues to be the most numerous category of finds at Jankent. It is important not just for chronology, but also because it shows the presence of three cultural traditions side by side, thereby providing information about the possible composition of the population of the 10th century town. The first group consists of red-slip wares and vessels with rim decorations; these are features typical of earlier local cultures with sedentary populations, primarily the Jetyasar Culture. The second, smaller group is made from light clay and resembles early medieval settlement pottery from Khorezm and Kerder (Amudarya delta). The third group of pottery consists of hand-made vessels richly decorated with vegetal motifs; this group had been identified by Tolstov [1947] as belonging to the Turkic Oguz population, largely because of broad similarities of the decoration to that of early medieval Turkic pottery from Mongolia. Interestingly, the same 'nomad' decoration is found on the ceramic 'firedogs' found in Jankent houses.

Conclusions. In sum, our work at Jankent has shown that occupation of this site started out as a probably open settlement in the Syrdarya delta, then developed into a fortified town before it was abandoned completely. The new radiocarbon dates from the 2018 season (the samples from 2019 are still being processed in the Mannheim laboratory) push the beginnings of this settlement slightly further back into the late 6th or 7th century, three centuries earlier than the historical references to Jengikent. The fortified town known from written sources was built as a single, planned complex on top of the earlier settlement in the later 9th or 10th century. The abundance of fish remains in the lowest layers, and later palaeobotanic evidence for locally grown wheat indicate economic change during the existence of the settlement. In the 10th/11th centuries AD, Jankent seems to have been quite clearly an urban settlement, with elements of regular lay-out, social differentiation and economic specialization. Given its size of 16 ha, the population within the walls may be estimated, on Khorezmian analogies, to have numbered between 1000 and 3000.

The evidence of Khorezmian town planning, and the abundant presence of Khorezmian pottery, suggest that this may have been a trading site or entrepot with Khorezmian merchants operating under the control and protection of the Oguz elite at an economically strategic location: on the crossroads of two major trade routes, and not far from the mouth of the Syrdarya into the Aral Sea. Oguz state formation would, in turn, have benefitted from the town as it provided specialists normally lacking in nomad societies. The end of the town in the 11th or 12th century may therefore have been caused by changes in trade patterns, the collapse of the Oguz polity, or shifts of the river channels in the delta, thus depriving the town of its access to water.

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