

of the main centre of this period in connection with the relative environment. Gonur North is a clear example of a large proto-urban centre (35 ha.), very close to the settlements situated along the piedmont area. During the Bronze Age the territory of the delta wasn't uncovered by sand and supplied by river water for the agricultural exploitation. The settlement system depended not only on the environmental situation, but mainly on the human influence. The Thiessen polygon application demonstrates that during the Middle Bronze Age the settlement system was hierarchically organized with Gonur North in the centre, concentrating the administrative functions as testified by the presence of the impressive palace. Anyway the administrative activity was shared out across a coherent series of second size sites, controlling the territory around. Unfortunately the attempt of the urbanization, following the foundation of the main Middle Bronze Age site of Gonur North, failed because of unfavourable natural and river supplying conditions.

On the basis of archaeological topography and detailed landscape analysis by using satellite and aerial photos, useful instruments for the present research, we tried to reconstruct the Middle Bronze Age environment and the relative irrigation system.

GONUR POPULATION ACCORDING THE ANTHROPOLOGICAL DATA

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The anthropological data, describing human physical features is the unique indicator of migrations in all epoch of existence of mankind. People moved to many periods of history on extensive spaces. The Neolith and Bronze Age take a special place in processes of formation of the population. The important information about this time, including anthropological one, we receive from the territory of the Near East, Middle and Southern Asia. This region is well enough presented by anthropological finds from the IV-II Millennium BC. (Trofimova, Ginzburg, 1972; Khojaiov, 1980; Kijatkina, 1987; Hemphill, 1998; etc.). In the same time the capital settlement of Margiana Gonur-Depe, which is dug out within last 35 years by Margiana archaeological expedition under direction of V.I. Sarianidi essentially supplements these data since represents the population lived per 2300-1600 BC in ancient delta of Murghab river — nowadays deserted areas of Kara Kum (Sarianidi, 1990, 2002, 2004, 2005, and others). Stratigraphic evidence and radiocarbon dates show presence of three periods inside of one cultural horizon. The first period last since time of the basis of a complex (last centuries of the Third — middle of the Second Millennium BC) up to the big fire which has destroyed all central part of the Kremlin (1800-1700 BC). The second period proceeded about 200 years after the big fire. The third period (about

1600 BC) is connected with leaving of Gonur rulers after a water of Murghab was moved on the West, loss by city of the capital value and full desolation of settlement.

Gonur Depe data are extremely interesting. Owing to that Gonur necropolis (2853 funeral constructions) where burial places were made during all time of functioning of a Palace-temples complex, but mainly during the first and second periods is completely dug out, we can judge the first settlers of this site. During the last period of dwelling on Gonur, burials also were made on its ruins. So, by the spring 2006 740 tombs have been dug out here. It allows to analyze the changes of anthropological features of Gonur inhabitants for all time of its existence, i.e. for 700-800 years. The most important is that, we have an opportunity to compare anthropological characteristics of Neolith population of Southern Turkmenistan with the same of new settlers of ancient Murghab delta.

Table 1. Occurrence of different types of funeral constructions and special ceremonies of a burial place at Gonur necropolis and in the ruins of Palace-temples complex.

Types of funeral constructions and customs	Necropolis %	Ruins of the Palace-Temples complex, %
Shafts	85,12	4,3
Pits,	10,83	73,7
including:		
Ordinary pits	8,91	73,7
Burnt pits	1,92	
Cists	2,13	8,7
Chamber tombs	1,92	0,3
Ovens		2,9
Hums		10,1
	N = 2447*	N = 623**
?	n = 211	n = 41
Fractional	n = 3	n = 1
«Dakhma»		n = 1
Sepultures-houses models with multiply human sacrifices		n = 5

* — Fire places and Burnt pits in which bone remains were not found are not included in this number.

** — The burials which have been dug out in the 2006 spring are not included in this number.

Some types of funeral constructions (table 1, fig. 17) are revealed at Gonur. The most part of burials has been plundered in an antiquity. From 2853 objects which have been found out at necropolis, only in 174 cases it was impossible to define, whether their ancient robbers visited. From among actually burials (excepting Fire places and Burnt pits) only 428 (16,5 %) have appeared not plundered. Only one unplundered chamber tomb (194) has been found out only and three cists also. Nevertheless, the richest gifts have been found in last of the mentioned tombs. It has allowed V.I. Sarianidi to approve, that the type of constructions is connected

with social structure of Gonur society, which was rather safe during a time of its blossoming: 85 % — middle class, 11 % — poor men and 4 % elite.

Obtained data, certainly, testify to a gradual impoverishment of the population during last period of dwelling when burials in overwhelming majority of cases were made in simple ямных tombs. Detection 195 ямных constructions which walls are burnt until red (the burnt holes) is characteristic. Among them only 47 (24,1 %) had bone remains, the majority from which (in 43 cases) have been certain as belonging to the person. Bones of a dog have been found in five such holes.

Hard sick people, people with physical and, it is possible with other lacks were buried in Burnt pits. The part from them was in non-standard poses. Among burials in the ruins of Palace- temples complex crippled people were buried not in specially arranged Burnt pits but in the thrown ovens. On the one hand, it also shows the general decline of a society, and with another one, testifies the preservation of tradition to protect pure element — ground — from "dirty" (the patient during lifetime) individ during all time of dwelling for a site. The important role of a protector was played by ashes. The thick layer (up to 12-15 cm) of it (quite often mixed with sand) was filled on a bottom of the Burnt pits. All died bodies in different types of tombs (including children buried in hums — large ceramic vessels) were fell down with ashes. Gypsum plaster of a sandy embankment on which remains of died in shaft graves and cists were located was used also in rare cases. Chamber tombs (double- and three-chambered; only 49 examples: 47 from them were on the necropolis, and 2 — on territory of a royal necropolis) are the simplified variant of tombs — models of houses of Margiana aristocracy. In room # 92 of Gonur palace there was an original dakhma-mausoleum in which the died members of royal family were buried (Sarianidi, 1998). The bone remains of ten died of different age and sex were mixed among themselves and moved to the eastern part of the room. Only one skeleton — of the last buried people — was lying inside the room near the entrance to the chamber. Similar situation, but strongly broken by not one-fold robberies, was observed also in royal tombs. Bough of them is illustrating collective successive burials.

There are a bases (presence of "bone crumble " in chamber tombs of necropolis and a small number of fractional burials) to assume the existence of secondary burials. The big variety of funeral constructions types in any way does not correlate ($r = 0,01$ up to $0,10$) with the ages, neither with a sex, nor with anthropological features of buried people, but is kept during all time of Gonur depe existence.

The funeral ceremony (position of the dead usually on the right side, in the writhed pose, a head to the north-northwest) also, as well as a set of funeral gifts remains as a whole without changes. It testifies the absence of new cultural invasion. Anthropological features of the population for all 700-800 years of dwelling of Gonur population change only within the limits of normal variability, which is a characteristic for a stable population (Dubova, Rykushina, 2004).

Stability of Gonur population proves to be true also by demographic parameters calculated in view of all burials, fixed to the end of 2004 (3181 cases of age and sex definitions — a unique case of completeness of the information for synchronous sites). The given population possessed a high standard of living and was in the demographic plan rather safe. People of Gonur, as well as many other agricultural societies, and especially protourban and early city's communities, were not free

from a different kind of pathologies (osteochondroses, inflammatory processes, enamels hypoplasia of tooth, urolithic illness and so forth), but their prevalence did not influence seriously on the life expectancy. The same data show practically normal sex parity with very insignificant excess of number of men over women (1,06), that (on a little bit smaller material) has been noted before by G.V. Rykushinoy (Babakov et al, 2001; Dubova, Rykushina, 2004).

As the received parameter mismatches normal biological sex distribution (1:1), it is possible to assume, that the first inhabitants of Gonur were the migrants, one of which characteristic features is significant excess of number of men over women. The part of women (about 36 %) could be included in structure of a population from the outside. The population which has based Gonur-Depe and lived in it, most likely, has come on the given territory not ones but by several waves.

Craniological Gonur series (almost 350 skulls of adult individuals) are necessary to name the major results of studying of anthropology the following:

1) Presence of the brachicephalic skulls in Gonur series (2,1%) are noted for the first time for the Bronze Age of Central Asia. On the one hand, it indirectly confirms agricultural character of facilities. On the other hand, it testifies the communication of the given population with one of the most ancient in the world brachicephalization centers — Near Eastern one (Tepe-Sialk, Tepe Hissar etc.), and with the third — it speaks about ecological features of environment and as a trace of it trouble — about presence of significant number of deviations from an optimum of mineralization of a skeleton (Babakov et al, 2001; Dubova, Rykushina, 2004).

2) Detection of the wide distribution of the artificial deformation of a head, especially with a help of bandage, characteristic and for modern Turkmen (Dubova, 2004, 2006) (fig. 18). Thus, the version of ring deformation which is known under the name parietal-occipital, has been very widely widespread among Gonur-Depe population (29% in the whole cranioserie and up to 43,3% in among 7-14 years' children), and, is not excluded, as in all Margiana already in the II Mil. BC. It is, at least, for 900-1000 years earlier, than thus type of deformation appears in the steppe areas of Eurasia (there it appears not earlier than the middle of the First Mil. BC), and approximately on 1500 years earlier, than in Siberia and Central Asia.

3) Objective presence in Gonur craniological series of significant polymorphism of the population (fig. 19). That also is fixed for the first time for the given territory. Except for the East-Mediterranean anthropological component most widespread in Kopet Dagh foothills, in Fergana valley, and in other areas of Middle Asia (Sapally and Djarkutan in Uzbekistan, Parkhay II and Sumbar in the Southwestern, Geoksur and Altyn-Depe in the Eastern Turkmenistan and Yuzhbok II on the Western Pamir, and also Tepe-Hissar, Shah-Tepe, Tepe-Sialk and Shahri-Sohta in Iran), Forward-Asian and Veddoid ones are present in Gonur series. Among all synchronous anthropological materials studied nowadays, only the population of Swat valley (Northwest Pakistan) most close reminds Gonur peoples.

4) The origin of the Forward-Asian anthropological component, certainly, is connected with Near-Eastern region, presumably with that its part, where in IV Mil. BC Shumer people lived. Their faces are well-known by the anthropomorphic plastic. Similar persons we see represented in glyptic and sfragistics of Gonur Depe.

5) Presence of the Veddoid anthropological layer in anthropological structure of the population of Turkmenistan called in question repeatedly. Strong restoration of Kokcha-3 skulls (Southern Subaral, II Mill. BC) has not allowed the majority of researchers to agree with T.A. Trofimova's (1961). Her investigation noted in this cemetery not only mesognathic but also prognathic forms. Morphological features of the individuals in the Gonur series establish existence of such structures with indisputability and show the certain similarity as with Veddoid skulls described in Swat valley so in Mohenjo-Daro by W. Bernhardt (1967).

6) In any one of these sites, also as well as at Gonur, the analysis of the morphological variety of skulls it has not been noted the presence of the anthropological types similar with Palaeoeuropoid population of the Euroasian steppes. Unique exception makes A.V. Gromov's research (1995) where the author shows some similarity between the population of a Sumbar valley (South Turkmenistan) with Katakombnaya and Srubnaya archaeological cultures of Volga region. In the same time presence of the anthropological component similar with Mediterraneans, among Srubnaya (and even earlier) culture of Volga region, Southern Subaral and Alakul' peoples is testified. More possibly that facts testify the movement from the South to more northern areas, than from steppes in a southern direction. This similarity, possibly is represented the participation of the identical anthropological layers in formation as of South Turkmenistan's so and steppe tribes.

Thus, the anthropology cannot define what carriers of languages and religious representations were people of Gonur — these characteristics do not depend from facial features of the people. But data which is possible to gather, analyzing morphological features of bone remains, confirms already expressed point of view, that all palette of a modern variety of the population of Turkmenistan was pawned during a Bronze Age. Therefore, we have all grounds to assert that the Turkmen's are direct genetic successors of the Ancient Margiana population.

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