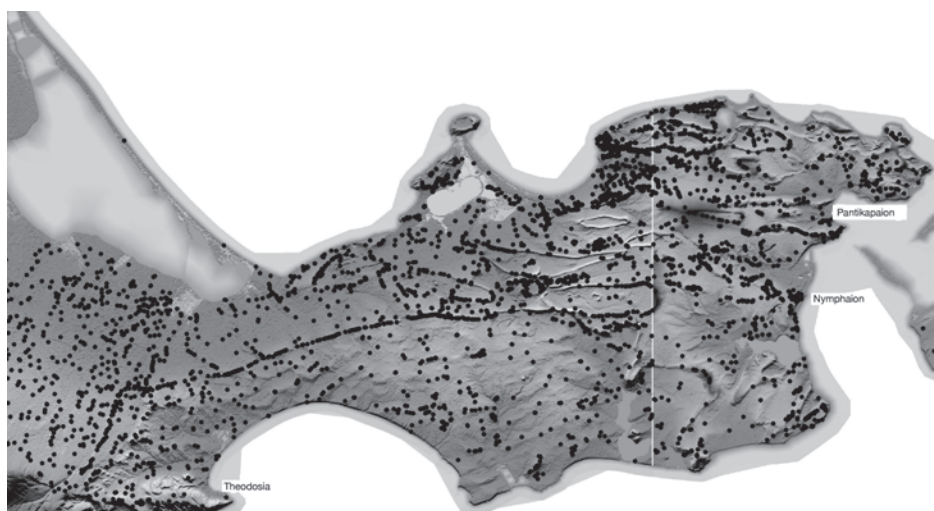


# Archaeological Sites of the Southwestern Part of Bosporos and their Connection to the Landscape

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Previous studies have revealed six areas of orthogonal land-division on the territory of the European Bosporos with the help of complex distant methods of investigations (aerial photographing, satellite images, cartography), archaeological surveys and geophysical prospection:<sup>1</sup>

- 1) the south-western part of the Kerch peninsula
- 2) the middle part of the peninsula near the Strait of Kerch
- 3) the region to the north-east of the city of Kerch extending towards Mount Temir-Gora
- 4) the region west of Pantikapaion
- 5) the region of Tyritake
- 6) the region of Kytaia



*Fig. 1. Three-dimensional map of the Kerch Peninsula. The barrows, visible on the “one-verst” map of the end of 19th century and on the map of 1955 on a scale 1:25000 are marked with black dots.*

The southern part of the Kerch Peninsula from Cape Čauda reaching as far as Lake Uzunlar is the first and the largest region. In aerial photographs taken in 1972, the traces of at least 130 ancient land plots are distinctly visible.<sup>2</sup> The *kleroi* measure about 350 m in width and 388-390 m in length, the area of each square plot equaling 12.25 hectares. The grid of these squares is only disturbed by the steep beach and banks of Lake Kačik, which was probably a sea bay in Antiquity. On the plots situated to the east of the lake, additional meridian lines can be seen – possibly the result of restructuring.

The preserved elements of the system of land lots yielded by maps and satellite photographs allow us to reconstruct the orthogonal structure of the land division throughout a considerable territory that exceeds several times the initial area where we can see the plots in the aerial photographs. Especially noteworthy are at least three ancient “trunk roads” leading seawards from north to south. This territory is bounded on the south and west by the sea, on the east by Lake Uzunlar, and on the north by a line slightly farther north of the northern extension of the same lake. The total area of the reconstructed system of rectangular land plots amounts to about 350 km<sup>2</sup>, the plots numbering at least 2,800.

In addition to the orthogonal system of the fields, many kurgans are mapped on the detailed maps of the area, especially on the “verst” map of 1896 and on the map of 1955-1965 with a scale of 1:25000. The barrows which have been revealed on these maps (in total more than 3,000) are shown in Figure 1 on the background of a three-dimensional relief map of the Kerch Peninsula. A remarkable feature is a lengthy chain of closely spaced kurgans. This chain extends from the north-eastern outskirts of the town of Staryj Krym along the Čurjuk-Su River, turning abruptly to the east near the village Novopokrovka and running along the Parpač Ridge to the Uzunlar Rampart. Here the chain splits, one branch of it running to Nymphaion, the other to Cape Ak-Burun.<sup>3</sup>

Archaeologically speaking, the southwestern part of the Kerch Peninsula is studied less than the other areas, perhaps because its approximately 5-km-wide costal line was closed for visitors since 1940, because the area was a military zone. Only one settlement, Kazeka near Cape Čauda, is known from the historical sources, and one more settlement, called Karasevka, is marked at the northern part of the area by I.T. Kruglikova.<sup>4</sup> There is almost nothing left from the settlement of Kazeka due to the erosion of the sea shore and to modern constructions.

Thanks to recent investigations by A.V. Gavrilov, new settlements and farmsteads, land division systems, wells and other objects have been revealed at the southern part of the area.<sup>5</sup> All these will give us new information which could change our opinion about the area, until now considered a “white spot” on the archaeological map of the Kerch Peninsula. Therefore, it is worthwhile to review in detail the geomorphological, geological and hydrogeological structure of the area and consider the connections of the ancient sites and land division systems with the natural conditions there.

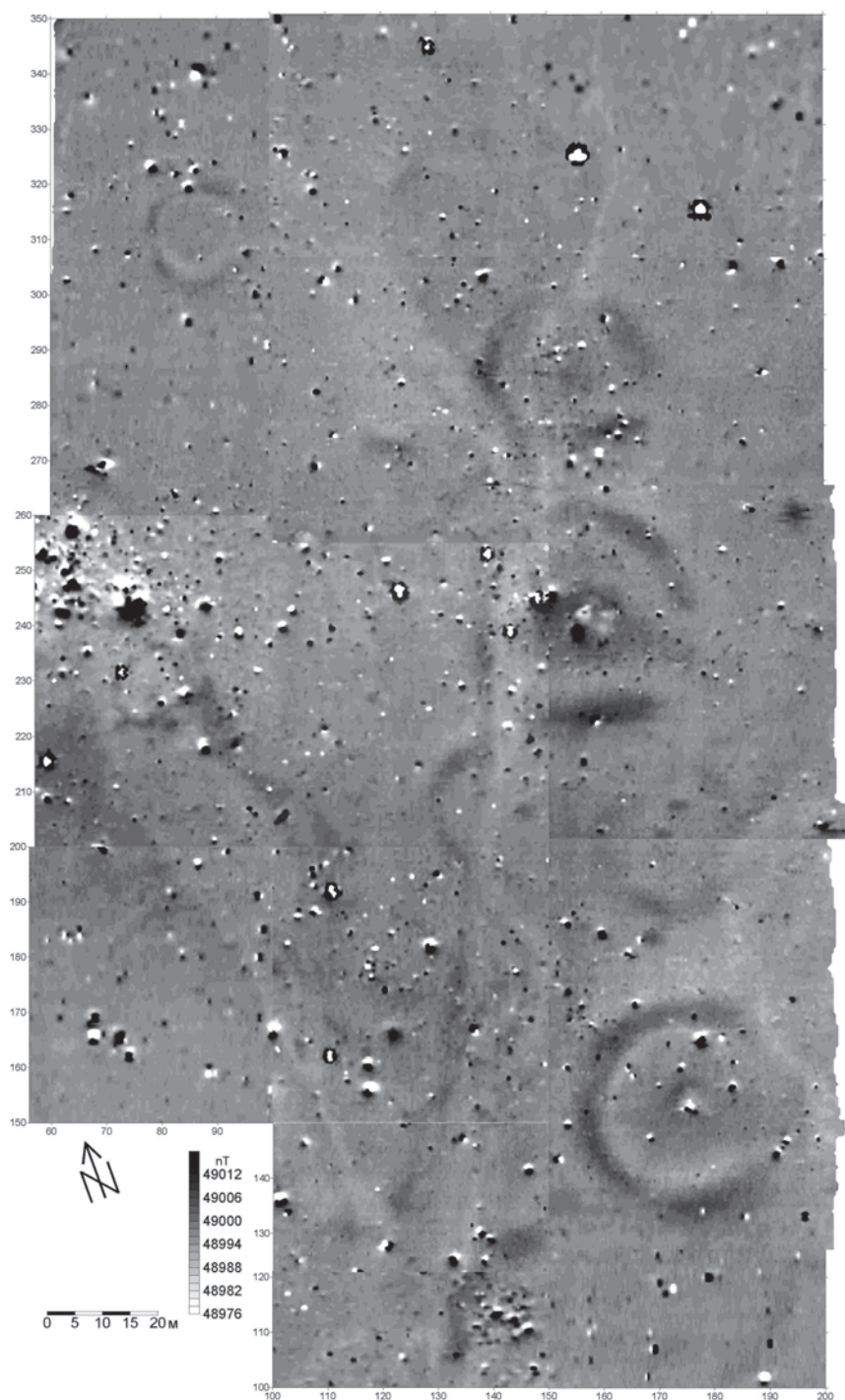


Fig. 2. Kurgan group near the settlement Sadovoe 2 on the river Čurjuk-Su. Results of magnetic survey of 2007. Magnetic grey scale map.

In respect to morphology and geology, this area is considerably different from the northeastern part of the Kerch Peninsula. The Parpač Ridge, which runs in a latitudinal direction in the middle part of the peninsula, is a natural border between two parts of the peninsula. The Parpač Ridge starts near the village of Vladislavovka at the western border of the peninsula. This ridge is formed by a layer of Čokrak limestone, which is situated between two softer geological layers.<sup>6</sup> The average height of the Parpač Ridge is from 80 to 150 m, and the highest point is Mount Pachlobaj at a height of 189 m.

The relief of the southwestern part of the peninsula, which is limited from the north and east by the Parpač Ridge, is flat, and the surface is divided by wide, shallow ravines with gentle slopes, which gradually became the slopes of the watersheds. The main watershed is displaced to the south of the Parpač Ridge. There are coastal salt lakes (Kačik, Uzunlar) in the lower parts of some of the ravines, which are divided from the sea by a bar of sand and shells. Some of the hills (Tautepe, Djurmen' and others), which are rather high, up to 60-80 m, were formed by harder limestone. The monotonous landscape is disturbed by plate-like depressions (*kol'*), which fill up with atmospheric water from time to time. There are marine Quaternary terraces existing in the coastal plane near the Čauda Cape.<sup>7</sup>

The northeastern part of the Kerch Peninsula has a much more hilly relief. There are some hollows surrounded by ring-like ridges consisting of limestone. With a height of 100-180 m above sea level, these ridges are not very tall. There are also low plateaus in the eastern part of the Kerch Peninsula and Mount Opuk (184 m) rises up in the southern part of the peninsula. The dirt volcanoes are rather numerous.<sup>8</sup>

The hydrographic net of the Kerch Peninsula is weakly developed and represented by shallow-water rivers and dry ravines. The northern part of the peninsula is characterized by more ravines. The biggest ones on the peninsula are the Samarli Ravine, which fell into Lake Aktash, the Saraj-Minsk Ravine, and also the Melek-Česme River.<sup>9</sup> The last big river to the west on the Kerch Peninsula is the Čurjuk-Su River. To the east of it is a plain, almost without water, especially in the southwestern part of the peninsula. As mentioned above, there is a chain of barrows along the eastern bank of the Čurjuk-Su River. Not only are there a large number of barrows, but there are many settlements from the 5th to the 3rd centuries BC along the high eastern bank of the Čurjuk-Su River.

One of the groups of barrows, situated near the settlement Sadovoe 2, was surveyed with magnetometers in 2007. Very clear patterns of the barrows are visible on the magnetic map (Fig. 3). Each barrow is surrounded by a circular positive anomaly, which corresponds to a ring ditch created during the construction of the barrow. There is an interruption of the circle at the eastern side, indicating the entrance to the barrow. Some local positive anomalies are possibly created by the burials inside the barrows.

The topsoil consists here of silted solonetzic černozyms, meadow and

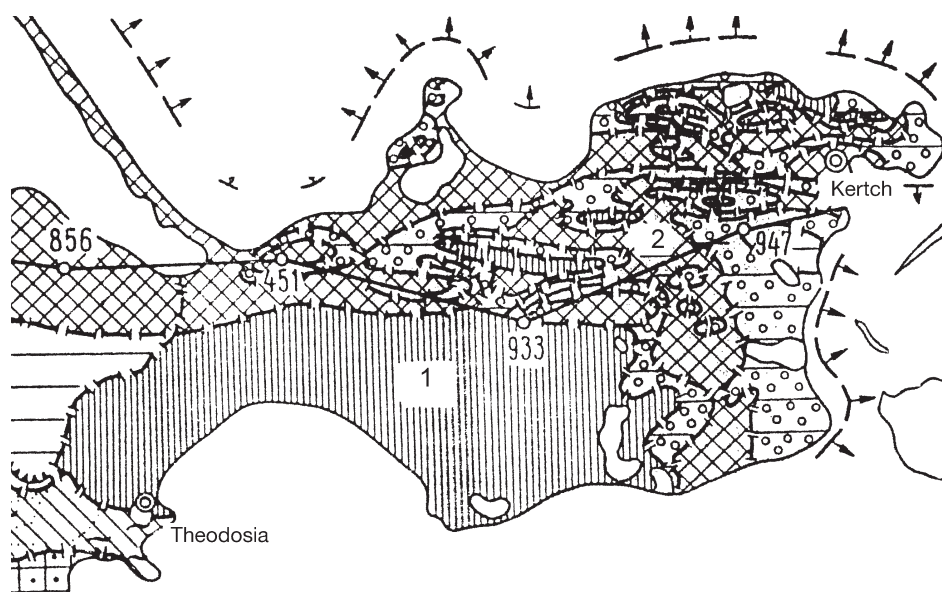


Fig. 3. Hydrogeological map of the Kerch Peninsula. 1 – Area of slow water-circulation in Maikop clays, 2 – Small artesian basins of the northern and northeastern part of the peninsula (after Qidrologija SSSR 1970, 234-235).

černozem-meadow soils, and solonetz. At present, these soils are considered potentially fit for agriculture but in need of certain improvements.<sup>10</sup> In Antiquity, however, these lands were probably considerably more fertile; otherwise it is impossible to understand the well-known statement of Strabon that the plain between Theodosia and Pantikapaion was rich in grain and had many settlements (7.4.4). The soils of the northeastern part of the Kerch Peninsula are more diverse and in general more fertile, especially near the Kerch Strait and in the area of Lake Čurubaš.

The southwestern part of the Kerch Peninsula represents itself a limited area, which is characterized by a different geological structure from the other part of peninsula. The Quaternary sediments of the Black Sea basin come from there. They created a 20-25-m-high terrace on Cape Čauda and consist of sand and clay layers in the lower part and of limestone in the upper part. Further to the north in the peninsula they transformed into continental red-brown clays.<sup>11</sup>

Inside this area, waters, which correspond to sand layers in the upper part of the Maikop clays, come from the atmosphere. But the amount of atmospheric moisture is limited and the penetration of water through the sediments is weak. There are no ground waters and no zone of free water supply in that area. Maikop clays, which are in general waterproof sediments, occupy the main part of this region (Fig 3). The ground waters thus are only in the ravines.



The wells, which have been cut in the layer of Quaternary limestone, are only near and to the east of Cape Čauda. In all other parts of the area it is possible to collect and store water only by building dams on the ravines.

The northeastern part of the Kerch Peninsula, unlike the southwestern part, has a number of separate miniature artesian basins, which correspond to some synclinals (Fig. 3). The thick layer of Maikop clays is the basis for the artesian basins. The supply of underground waters of Middle Miocene, Sarmatian, Meotian and Pontic sediments for these basins is realized on the edges of synclinals in the area of the Parpač Ridge.<sup>12</sup> Therefore, the highest level of ground water is observed along it.<sup>13</sup> The water level in the wells there is about 2-5 m from the surface. The chemical composition of the ground water of the northeastern part of the peninsula varies a lot. The water is salty, hard, mostly containing sulphur chloride, sodium and calcium.<sup>14</sup>

Thus, the areas to the south of the Parpač Ridge have no ground waters. Only on Cape Čauda are there wells, which were cut in the Quaternary limestone layer until the horizon of Maikop clays. The only water sources in the rest of this rather big area are numerous artificial ponds, which were created in the ravines. Around each village there are many such ponds marked on the "half-verst" map of 1897. Some of the dams were built far from villages, and they could indicate some settlements or water sources for cattle which existed in the area prior to the 19th century, perhaps in Medieval times or even in Antiquity. There could be perspective in investigating such places for finding ancient settlements.

The whole southwestern part of the Kerch Peninsula was inhabited by settled populations who built dams on ravines near their settlements and pastures to insure water storage for both people and cattle. This may be the reason why there are not many big nomadic barrows in the area. All of the traditional migration routes went to the north of this area, along the Parpač Ridge, where it was possible to make stops at good water sources. The line of barrows on the Parpač Ridge tells us about the route, which went the length of the whole peninsula, from central Crimea to the Kerch Strait.

## Notes

- 1 Smekalova & Smekalov 2006; Smekalova 2007.
- 2 Smekalova & Smekalov 2005, figs. 2a and 3a-b.
- 3 Smekalova & Smekalov 2005, 229.
- 4 Kruglikova 1979, 273.
- 5 Gavrilov in this volume.
- 6 Andrusov, 1885, 70.
- 7 *Gidrogeologija SSSR* 1970, 59-60.
- 8 *Gidrogeologija SSSR* 1970, 59-60.
- 9 Oliferov, Timčenko 2005, 137-142.
- 10 Dragan 2004, 55, 165.
- 11 *Gidrogeologija SSSR* 1970, 40.

- 12 *Gidrogeologija* SSSR 1970, 178.
- 13 *Gidrogeologija* SSSR 1970, 147.
- 14 *Gidrogeologija* SSSR 1970, 178.

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