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History and influence of the Danube delta lobes on the evolution of the ancient harbour of Orgame (Dobrogea, Romania)

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Abstract

On the coast of Northern Dobrogea, south of the Danube delta, the Greek settlement of Orgame was founded in the mid 7th c. BC, probably by Milesian colonists. The ancient city was located on the Cape Dolojman which today overlooks a large lagoon complex. We undertook a chronostratigraphic study to: (i) understand coastal changes around Cape Dolojman since ca. 5000 years BP in connection with the construction of the Danube delta lobes, and (ii) identify potential sediment impacts related to human occupation of the site. Three cores were extracted from the lagoon area. Sedimentological and biological analyses were undertaken to reconstruct the evolution of the coastal palaeoenvironments. The results show a closure of the marine bay around 3500 cal. BP and its transformation into a lagoon environment. The first major environmental change was due to the construction of the lobe St. George I and the formation of the barrier Lupilor. Around 2000 cal. BP, the formation of an intra-lagoonal lobe, the Dunavatz, led to the gradual transformation of the lagoon into a fluvial-dominated system. Paradoxically, lagoon waters today still wash the ancient Greek harbour environment, which has not been totally infilled by alluvial sediments. To understand this paradox, in a context of coastal progradation, we compared and contrasted the geomorphological data with the nearby city of Istros/Histria, which was already landlocked at this time. The location of these two Greek colonies relative to the coastal sediment cell and barriers partly explains their contrasting palaeoenvironmental evolution. Until 2650 cal. BP, the increase in charcoal and organic matter in sedimentary archives is interpreted as an anthropogenic signal for a more extensive use of the vegetation cover following the foundation of the city of Orgame (e.g. for domestic use and funeral rites).

Keywords: palaeoenvironments, ancient harbour, lagoon, coastal barriers, coasts, Orgame, Danube delta, Black Sea.

I. Introduction

Orgame constitutes one of the four earliest Greek settlements in the Black Sea area. Founded in the mid-7th c. BC, on the coast of Northern Dobrogea, the remains of the ancient city occupy the Cape of Dolojman, today overlooking a large lagoon complex located south of the mouths of the Danube (Fig. 1). Its location at the proximal margin of the delta complex partially explains the installation of Greek settlers in this very specific ecological area, due to its rich wetland resources, while the latter in turn significantly influenced the historical trajectory of the city. The archaeological research on this site began in 1926 with the work of P. Nicorescu, before regular excavations were launched in 1965 and have continued up to present day. Like many of the world's deltas, human occupation of the Danube delta began during the Neolithic period (around ~6000 BC ; Stanley and Warne, 1997 ; Kennett and Kennett, 2006 ; Giosan *et al.*, 2012;

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