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# Preface

In this volume, Hermann Gorbahn presents one of the most detailed analyses of an Archaic site in pre-Hispanic South America. In general terms, the Archaic period in America is defined as the transition from mobile hunter-gatherers to sedentary, food-producing farmers. The Archaic period in America is therefore comparable to the process of neolithisation in the Old World, although there exist significant differences between both concepts. In Pernil Alto, which dates to the period from 3800 to 3000 BC, several crucial developments can be observed that contribute to our understanding of the Archaic period in the Central Andes.

As with many other archaeological sites, Pernil Alto was discovered by chance. Originally, excavations at this site on the right margin of the Rio Grande valley, on the southern coast of Peru, were initiated in order to obtain information about the Early Paracas culture (800-600 BC), which preceded the Nasca culture (200 BC-600 AD) in the Palpa region in the northern Nasca drainage. These investigations were part of the long-term interdisciplinary Nasca-Palpa Project, which aimed to reconstruct the development of the pre-Hispanic cultures in the Palpa valleys. This project, directed by the author and its Peruvian colleague Johny Isla, was financed in different project phases by the Swiss-Liechtenstein Foundation for Archaeological Research Abroad (SLSA), the German Federal Ministry for Education and Research (BMBF), the German Research Foundation (DFG) and the German Archaeological Institute (DAI).

Excavations at Pernil Alto began in 2001 with the cleaning of an abandoned test pit excavated by local farmers, where clay floors and ceramic sherds indicated early adobe structures. What at a first glance seemed to be an Early Paracas structure, in the deeper levels turned out to be the hitherto largest settlement of the so-called Initial period (1500-800 BC) on the south coast of Peru. After two field campaigns of extensive excavations and after documenting settlement structures of four occupational phases, we discovered several segments of large pits, which we interpreted as refuse pits. At the beginning, we didn't pay much attention to these pits, but when the extracted samples for radiocarbon dating turned out to be from the 4<sup>th</sup> millennium BC, we decided to continue our excavations at the site in another field campaign.

This was the beginning of the excavation of the extended archaic settlement of Pernil Alto in 2008 that led to the discovery of 18 pit houses, more than 30 funerary contexts, and a wealth of lithic, botanical, faunistic and malacological material perfectly preserved in the extremely dry sediments of the arid environment of the desert coast of Peru. This was also the start of the intense involvement of Hermann Gorbahn, to whom we commissioned the excavation and later the analysis of the archaic layers of Pernil Alto. Hermann Gorbahn had received an excellent training in prehistoric archaeology at the University of Münster in Germany. He later developed his analytical work with the findings of Pernil Alto at the Graduate School "Human Development in Landscapes" in Kiel under the guidance of Johannes Müller. The fruitful cooperation of the involved institutions finally resulted in Hermann Gorbahn's dissertation, which is the basis for this publication.

The dating of the archaic layers of Pernil Alto into the 4<sup>th</sup> millennium BC is of special importance. According to recent research results, the formation of the earliest complex societies in the Andean area must have happened in the second half of the 4<sup>th</sup> millennium and the first half of the 3<sup>rd</sup> millennium BC. In the 3<sup>rd</sup> millennium BC, complex societies, identified by large settlement centers with monumental architecture, were already fully developed on the central coast of Peru. Unfortunately, however, we lack detailed archaeological information for precisely those centers preceding time periods when these crucial developments must have taken place.

In South America, sedentism developed on the basis of the rich marine resources provided by the cold waters of the Humboldt Current off the Pacific coast. This led the archaeologist Michael Moseley in the 1970s to formulate the hypothesis of the "Maritime Foundations of Andean Civilization" (MFAC), which claimed that complex societies on the Peruvian coast developed precisely out of these rich maritime resources. The MFAC has been debated for a long time and detractors have objected that marine resources alone could not have led to the development of complex societies. Today, and in the light of new research on the Archaic period, especially in the Andes, there seems to be agreement that it was the combination of marine resources and agriculture that formed the basis for a stable economy, a significant increase in population, and social complexity. As

it is clear that sedentism first developed on the coast, but that productive agriculture on a larger scale was only possible in the river oases at the foot of the Andes, it seems to be obvious that a shift of settlements must have taken place.

Pernil Alto is one of the few settlements to offer detailed insights into these developments during the critical period in the 4<sup>th</sup> millennium BC. Although it is located on the south coast of Peru, it may contribute to the understanding of the environmental conditions, the cultural developments, and the economic basis for the development of complex societies of the whole culture area of the Central Andes.

The case of Pernil Alto seems to demonstrate, as will be shown in this book, that the development of agriculture indeed took place in the foothills of the Andes, where the climatic conditions at the end of the 4<sup>th</sup> millennium BC were especially favorable for the establishment of a diverse economy. Settlers found the ideal environmental conditions for the cultivation of plants in the moist, fertile soils of the alluvial terraces of river valleys. Periodic inundations in the rainy season, meant there was no need for irrigation systems. Furthermore, the foothills of the Andes provided a more abundant vegetation than today, which attracted animals like guanacos

or deer that could be hunted to complement the plant-based diet. The case of Pernil Alto may therefore provide a model for coastal regions further to the north, especially the north-central coast, where the first complex societies arose in exactly this period.

Hermann Gorbahn presents a detailed and painstaking analysis of the stratigraphy, radiocarbon datings, architecture and funerary contexts, as well as the lithic, archaeobotanical and archaeozoological findings of Pernil Alto in order to reconstruct the living conditions in southern Peru between 3800 and 3000 BC. Combined with the reconstruction of the climatic conditions of that period, provided by our partners from the University of Heidelberg, we get an insight into a hitherto poorly investigated period of Peruvian prehistory. A major point that has to be stressed as a result of the systematic analysis of the economic basis of the settlers of Pernil Alto is that more than 50% of their food production in later Archaic phases relied on domesticated plants. This means that Pernil Alto, according to the current state of knowledge, *per definitionem* is the oldest known agricultural village in South America. This, indeed, is an important contribution to the history of early cultures on the American continent.

Markus Reindel