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Environmental survey and trial excavation at prehistoric settlement site in Neyshabur Plain, Northeastern Iran

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Razavi Khorasan Province in the northeast of Iran, located at the Crossroads of Eurasia, was an important point of the middle part of the Silk Road. Neyshabur Plain is situated an important transporting hub of the major thoroughfare of Eurasia. A large number of sites are distributed in the river valleys and the alluvial fans in front of the mountains. Archaeological survey was carried out in Neyshabur Plain, and more than 10 sites were discovered, which are in form of mounds of earth, named as Tape. Seen from the cultural relics on the surface, these sites were occupied by successive cultural sequences, mainly ranging from Neolithic, Chalcolithic, Bronze to Iron Age. This appearance indicates that the climate and environment in the past was better than now. Today, the region is characterized by dry climate, and poor land resources. The land is dominated by Gobi Desert, and the wide vegetation is dominated by Camel thorn (*Alhagi sparsifolia*). Only in which Karez irrigation system exists, can wheat (*Triticum aestivum*), barley (*Hordeum vulgare*) and saffron (*Crocus sativus*) be cultivated, while a few orchard is present in some river valley areas.

Tape Borj, which is the largest prehistoric settlement site in the east part of Neyshabur plain, Razavi Khorasan Province, NE Iran, covers an area of 13.5 ha. A total area of 110 m² was excavated in the north and northwest part of the site, and some geological survey were also conducted around the site in 2019. A total of 14 ash pits, 4 houses, 6 ovens, and one well were unearthed during the excavation. According to the AMS dates and material culture, the cultural deposits can be divided into two phases, including Chalcolithic Age during 6500 BP and 6000 BP and early Bronze Age during 5500 BP and 5000 BP. Some wheat, barley, oats (*Avena sativa*), and seeds of *Celtis sinensis*, as well as a large number of animal bones, which are dominated by sheep and goats were discovered. The results can basically reflect the economic structure and subsistence strategy of prehistoric ancestors. Geological survey indicates that two paleo river course ever went through the east and west sides of the site during the prehistoric period. In addition, some

samples were systematically collected for pollen and phytolith analysis, in order to understand the paleoenvironment and the utilization of plant resources by the ancient people at the site from the Chalcolithic to the Bronze Age. Our work can provide some precious material data for studying the evolution of the paleoenvironment and development of agriculture and animal husbandry in this region.