

THE DEPARTMENT OF ANTHROPOLOGY PRESENTS

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Origins of Agriculture and Plant Use in Neolithic North China: Evidence from Stone Tools

In China, grinding stones first appeared during the Upper Paleolithic period, and were one of the dominant tool types in many early Neolithic sites. Grinding stones were primarily used for processing plant foods and other materials. They gradually disappear in the archaeological record after 5000 BC in the Yellow River region at the time when millet-based agriculture intensified. However, grinding stones were continuously used by people throughout the entire Neolithic period in the Liao River region of Northeast China. The different trajectories in food processing methods (with or without grinding stones) in the two regions are likely related to diverse types of plants exploited; and we need to understand what plants were involved. By employing residue (starch and phytoliths) and usewear analyses, this study investigates the functions of grinding stones recovered at several sites in the Liao River region, dating to ca. 6000-3000 BC. The results suggest that the people utilized a broad-spectrum subsistence strategy throughout the entire Neolithic, using various wild, cultivated, and domesticated plants, including tubers/roots, cereals, beans, and nuts. The earliest domesticates in the Xinglongwa period include millets and Job's tears. Rice may have been introduced to the region for the first time during the Hongshan period, coinciding with the rise of regional elite and intensified interactions with other Neolithic cultures in the south. This study sheds new light on the plant-use strategies of the grinding-stone users who developed complex societies in the Neolithic Liao River region.