



GRADUATE SCHOOL AT KIEL UNIVERSITY
human development in landscapes

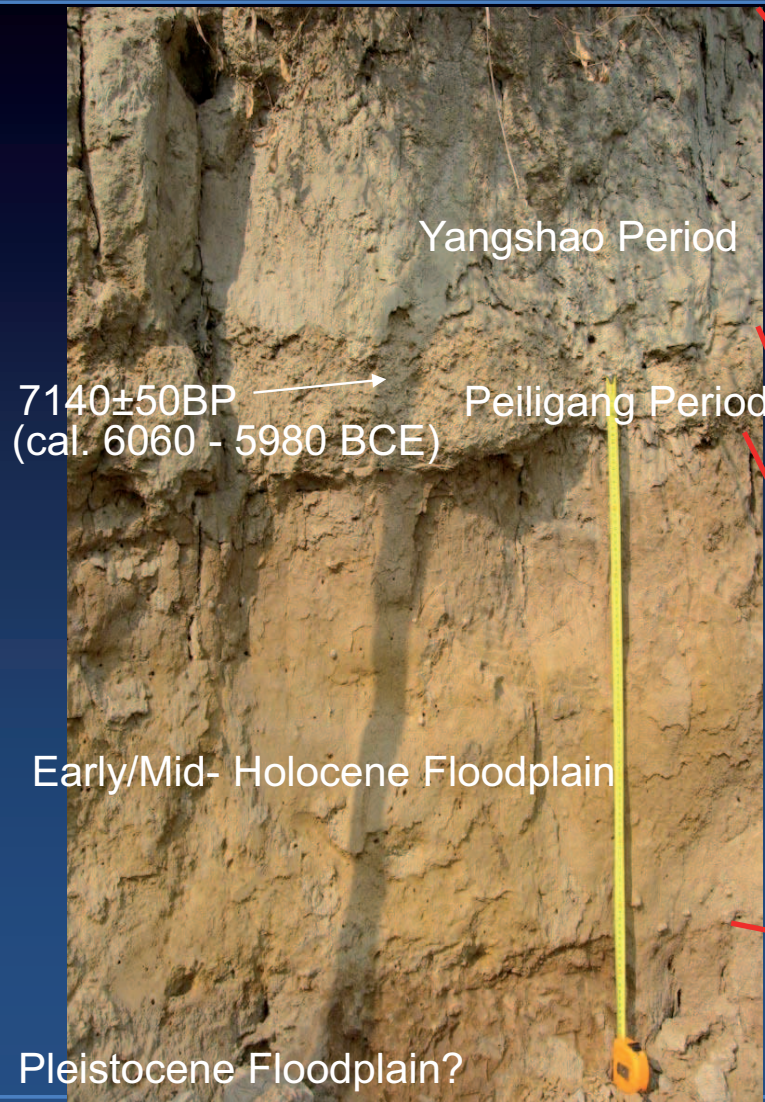
BIWEEKLY COLLOQUIUM
Monday, December 7th, 4:15 p.m.

**A PHYTOLITH AND GEOARCHAEOLOGICAL PERSPECTIVE
ON RISING SOCIAL COMPLEXITY, AGRICULTURAL
INTENSIFICATION, AND NEOLITHIC RICE FARMING
ON THE LOESS PLATEAU OF CHINA**

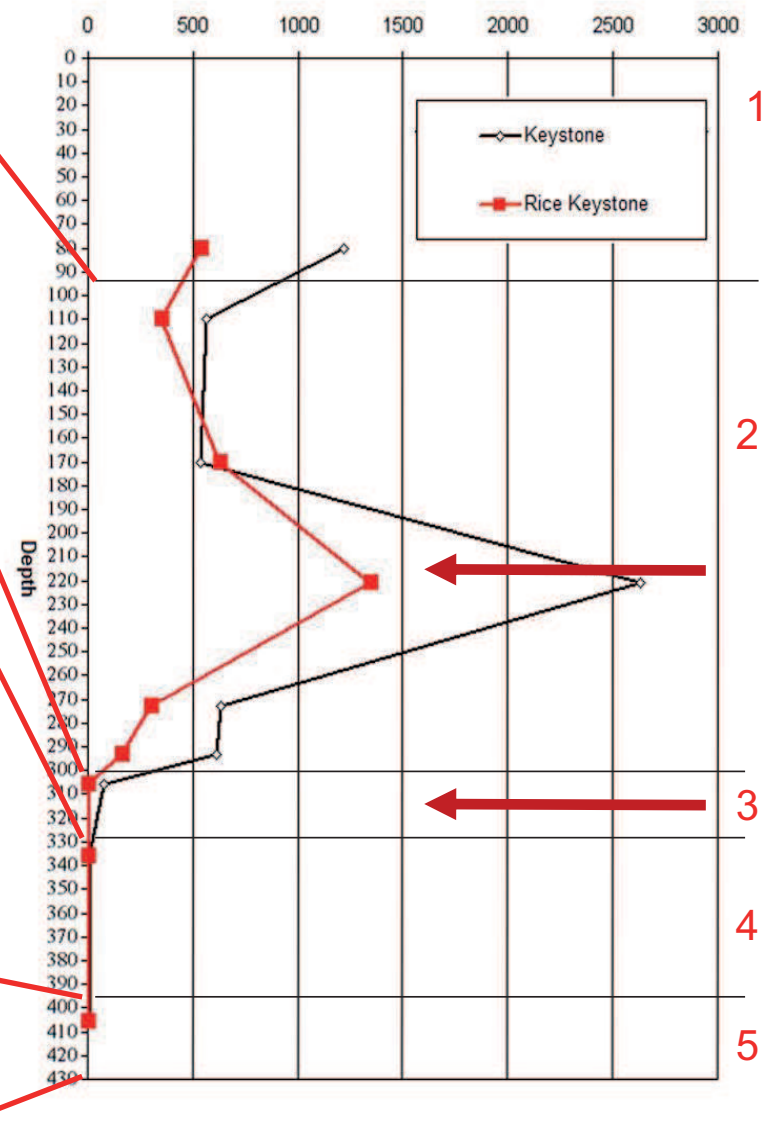
Arlene Rosen
University of Texas at Austin

Geoarchaeological and phytolith studies of landscapes immediately adjacent to archaeological sites can contribute information on the direct impact of small-scale societies on their associated environments. This direct connection allows us to understand aspects of their motivations, economic decision-making, agricultural strategies, and how these affected local site catchments. The origin and spread of farming communities onto the Loess Plateau of northern China provides a good example of this. Sediment profiles that were immediately adjacent to the site of Huizui in the Yiluo River Basin, provided evidence for human land-use beginning with the early Mid-Holocene deposits which are consistent with stable hillslope soils, indicating that the first mixed forager-millet farmers of the Peiligang Neolithic had a very light ecological footprint on the landscape. This is in contrast to the later middle Neolithic Yangshao Period farmers. Sediments, phytoliths and starches from the Yangshao Period revealed evidence for the earliest Neolithic paddy farming well outside of the natural habitat of wild rice. In addition to evidence for massive deforestation and soil erosion, a 15 m deep sequence containing sets of gravels (beginning ca. 7200 cal BP) and gleyed soils dating from ca. 6600 cal BP contained rice phytoliths and archaeological waste suggesting manuring. These signs of intensive landscape management went hand-in-hand with rapidly increasing social complexity from the earliest to latest Neolithic periods in northern China.

Venue: Leibnizstraße 1, Seminar Room 204



Liujian GS-06



Rice Keystone (Fan-Shaped) Phytoliths