Preliminary results of phytolith analyses from a geoarchaeological study of historic settlement of Kota Cina, North Sumatra (Indonesia)

Yohan Chabot*†[1], Aline Garnier‡[2], Nicole Limondin-Lozouet[1], and Yann Le Drezen[1]

[1]Laboratoire de géographie physique (LGP) – CNRS : UMR8591, Université Paris 1 - Panthéon-Sorbonne – bat. Y 1 Place Aristide Briand 92195 MEUDON CEDEX, France
[2]Laboratoire de géographie physique (LGP) – CNRS : UMR8591, Université Paris XII - Paris-Est Créteil Val-de-Marne (UPEC) – bat. Y 1 Place Aristide Briand 92195 MEUDON CEDEX, France

Résumé

Since the 1980s the number of phytolith studies on palaeoenvironment research in archaeological contexts has risen. However, world wide, few historical and archaeological reports contain this data. In this project we report on data from North Sumatra (Indonesia). The geoarchaeological study undertaken at Kota Cina (North Sumatra) is a first effort that aims to reconstruct the environments of the last 1000 years with regard to human settlements. The ancient port of Kota Cina, located in an estuarine environmemt, was active between the XIth-XIVth centuries. Today the site is located 7 km from the coast, in marshy lowland near a *Nypa fruticans* (palm) mangrove. Kota Cina deposits provide a range of well-preserved and abundant phytoliths, particularly from the Arecaceae (palms). The analyses of these micro-fossils allows us to: (1) document vegetational changes in a coastal environment at Kota Cina and (2) to reconstruct human influences on the environment during site occupation (e.g., vegetation clearing and cultivation). Investigations typically combine modern and fossil phytolith sampling. Fifteen modern samples from different environments at Kota Cina and surroundings were analysed to establish a modern reference collection of the local current vegetation and to compare the modern phytoliths with fossil assemblages. For the palaeoenvironmental approach, twenty-five samples were taken in the stratigraphic sequence of Kota Cina. Two archaeological excavations and one sediment core were analyzed. The preliminary results show differences between the north and south paleovegetation of Kota Cina. During human settlement, Kota Cina habitation was a terrestrial environment in the South. The vegetation was more open than in north. Oryza, Zea mays, Musa morphotypes occurred and Arecaceae phytoliths are abundant. The occurrence of these edible plants in association with burned phytoliths and habitat remains indicates changes in the vegetation caused by human practices. To the north, the vegetation was denser and Arecaceae morphotypes are dominant. The area was at the edge of a peninsula in an estuarine environment probably covered by mangrove. Boat remains, paleochannels, Arecaceae phytoliths, mangrove species wood remains, anthropogenic mangrove, marine shell, and marine's vertebrate bones, indicate a marine environment and sailing activities.

*Intervenant
†Auteur correspondant: yohan.chabot@hotmail.fr
‡Auteur correspondant: aline.garnier@u-pec.fr

Mots-Clés: Geoarchaeology, Paleoenvironment, Phytoliths, Stratigraphy, Arecaceae