Studies on Ancient Rice – Where the Botanists, Agronomists, Archaeologists, Linguists, and Ethnologists Meet

Dr. Yue-ie Caroline HSING*
Institute of Plant and Microbial Biology, Academia Sinica, Taiwan
bohsing@gate.sinica.edu.tw

Dr. Paul Jen-kuei LI
Institute of Linguistics, Academia Sinica, Taiwan

Drs. Cheng-hwa TSANG and Dr. Kuang-ti LI
Institute of History & Philology, Academia Sinica, Taiwan

Taiwan aboriginal peoples are thought to be the origin of Austronesians. Currently there are 14 recognized aboriginal tribes in Taiwan, with a combined population of 490,000. The major crops in the aboriginal villages are rice (*Oryza sativa*) and foxtail millet (*Setaria italica*).

Archeologists have recently excavated the remains of several early cultures in Taiwan, finding abundant amounts of pottery, stone, shell and bone tools, as well as animal, plant and human remains. The most plentiful plant remains are carbonated rice and foxtail millet grains. The earliest 14C date of these excavation sites is ~5000BP. These settlements may be those of the earliest ancestral Austronesian-speaking people in Taiwan.

Rice domestication is a complex story involving multiple selection and introgression events. Cultivated Asian rice can be broadly classified into two subspecies, i.e. indica and japonica. It has been suggested that *O. sativa* was domesticated from *O. rufipogon* about 10,000 years ago. We identified the functional nucleotide polymorphisms (FNPs) of ~ 15 domestication-related using 60 landraces collected from Taiwan aboriginal villages about 100 years ago. We also screened the phenotypes of these landraces.

By integrating pheno- and genotypic data, together with data from archeologists and linguists, we may better understand the history of rice cultivation in Taiwan and nearby areas.