

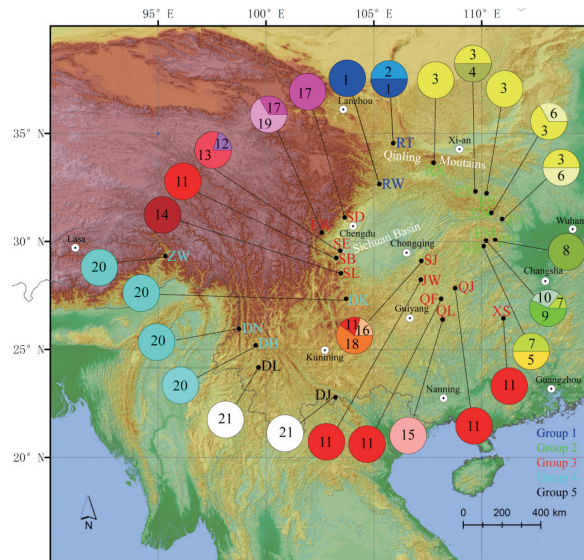
Study Urges Preservation of Old Tree Species in Southwest China

T*tetracentron sinense* (Trochodendraceae) is an Arcto-Tertiary relict with rich fossil records and a relatively broad extant geographical distribution that extends further south than the other Arcto-Tertiary relicts. It provides an excellent opportunity to explore the effects of late Cenozoic climate change in the East Asian temperate and subtropical floras.

To evaluate whether and how Pleistocene and pre-Pleistocene climate changes helped to influence current phylogeographical patterns, and to describe the current patterns of genetic diversity and their implications for conservation, a group of researchers led by LI Jianqiang and WANG Hengchang from the Wuhan Botanical Garden, CAS conducted phylogeographical analyses of 157 *T. sinense* individuals from 27 populations in southwestern and central subtropical China using four chloroplast DNA intergenic spacer regions.

Their research revealed that three of the 21 recovered haplotypes were widely distributed, but most were restricted to particular regions. Populations with high haplotype diversity were located in southwestern Hubei, southern Sichuan and southern Chongqing. The two earliest-diverging haplotypes were found in southwestern China. The haplotype distribution of *T. sinense* demonstrated significant phylogeographical structure.

They concluded that the extant distribution of *T. sinense* was likely to have been shaped by both pre-Quaternary and Pleistocene climate changes. Southwestern China may have served as an important refugium for *T. sinense* throughout the Neogene, while the species also occupied multiple refugia during the late Pleistocene glacial periods. Populations of *T. sinense* were resolved into five



The distribution of 21 cpDNA haplotypes and five SAMOVA-derived groups identified within 27 *Tetracentron sinense* populations from southwestern and central subtropical China.

allopatric groups, between which there was apparently no seed movement.

This study suggested that more efforts are needed to protect *T. sinense* populations in southwestern regions in order to preserve the ancient genetic diversity of this phylogenetically distinctive and increasingly threatened species.

Their paper entitled “Chloroplast phylogeography of the East Asian Arcto-Tertiary relict *Tetracentron sinense* (Trochodendraceae)” has been published in the *Journal of Biogeography*. The work was supported by the Knowledge Innovation Program of the Chinese Academy of Sciences and grants from the National Natural Science Foundation of China.