Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

BPT27-04 Room:101A Time:May 25 14:30-14:45

Evolutionary history of macaques in East Asia: internal cranial morphology and its phylogenetic significance

ITO, Tsuyoshi[1*], NISHIMURA, Takeshi[1], TAKAI, Masanaru[1]

[1]Primate Research Institute, Kyoto University

Macaca is one of the most successful genera of nonhuman primates. Macaques are usually classified into four species groups. The *fascicularis* and *sinica* groups are distributed widely from tropical to temperate zones in Asia; the former is more widely distributed in higher-latitude regions than the latter. The phylogenetic relationship of northern Chinese fossil species, *M. anderssoni* (Early Pleistocene, Mianchi), to living species is one of the key issues for interpreting paleobiogeographic events, but there is still controversial about whether *M. anderssoni* is phylogenetically related to the *sinica* group or the *fascicularis* group. The present study evaluated phylogenetic values of internal cranial variations in macaques to reappraise the phylogenetic position of *M. anderssoni*. Results indicated that nasal cavity shape well reflects phylogenetic relationships rather than environmental influences. Parsimonious reconstruction indicated that pear-shaped nasal cavity shown in members of the *sinica* group is derived condition among macaques. *M. anderssoni* shares pear-shaped nasal cavity with some living species of the *sinica* group, suggesting their phylogenetic closeness. The results of this work indicate that population of the *sinica* group was widely distributed in northern China during the Early to Middle Pleistocene, but they retreated southward into southern China and Indochina. On the other hand, the *fascicularis* group dispersed from Southeast Asia to East Asia since the Middle Pleistocene and acquired wide distribution in high latitude regions. Thus, in East Asia, the *sinica* group was replaced by the latecomer, the *fascicularis* group, probably due to the deterioration of climate during the Late Pleistocene.

Keywords: Pleistocene, Paleobiogeography, Nasal cavity, Maxillary sinus, Computed tomography, *Macaca anderssoni*