

BPT026-03

Room:201B

Time:May 24 14:45-15:00

## Evolutionary change of porcupines in the late Neogene of central Myanmar

Yuichiro Nishioka<sup>1\*</sup>, Zin Maung Maung Thein<sup>2</sup>, Thaung Htike<sup>3</sup>, Naoko Egi<sup>1</sup>, Masanaru Takai<sup>1</sup>

<sup>1</sup>Primate Research Institute, Kyoto Univ., <sup>2</sup>Mandalay University, Myanmar, <sup>3</sup>Shwebo Degree College, Myanmar

The Neogene Irrawaddy Group is mainly composed of fluvial deposits and widely distributed along the Irrawaddy River and its tributary in central Myanmar. Since the early 20th century it has been known for yielding many vertebrate fossils. Here, we report new discoveries of Old World porcupine (Hystricidae, Rodentia) specimens from the lower part of the Irrawaddy sediments (upper Miocene to lower Pliocene) of Chaingzauk area and the upper Irrawaddy (upper Pliocene to lower Pleistocene) of Gwebin area in central Myanmar.

The hystricid specimens are assigned to a new species (*Hystrix* sp. nov.) from Chaingzauk and two species (*H.* cf. *zhengi*, *H.* cf. *brachyura*) from Gwebin. The Chaingzauk species is characterized by huge-size, semi-hypsodont, and robust mandibular corpus. These diagnostic features indicate the species to be phylogenetically closer to the Mio-Pliocene European and African species than to any fossil/living *Hystrix* species from South Asia and China.

On the other hand, *H.* cf. *zhengi* from Gwebin differs from the Chaingzauk species in having much smaller and slightly higher tooth crown but resembles the species from the upper Pliocene to lower Pleistocene of China. Although the Irrawaddy fauna has been correlated with the Siwalik fauna from Indo-Pakistan rather than that from East Asia until the Pliocene on the basis of faunal comparisons, the occurrence of *H.* cf. *zhengi* suggests faunal interchange between Myanmar and East Asia during late Pliocene and early Pleistocene.

The other species from Gwebin is comparatively small and hypsodont, referring to extant Asian *Hystrix*, *H.* cf. *brachyura*, *H.* cf. *subcristata*, which is widely discovered from the lower Pleistocene of South China and probable junior synonym of *H.* cf. *brachyura*, is as large as *H.* cf. *brachyura* from Gwebin, also suggesting the faunal interchange with South China. In Southeast Asia, Gwebin is the oldest fossil locality of this extant species, suggesting that the extant lineage of *Hystrix* occurred in inland Southeast Asia during the Plio-Pleistocene and dispersed into southern areas.

Based on the analyses of the Chaingzauk fauna and the stable isotope data of mammal teeth Zin-Maung-Maung-Thein et al. (in press) demonstrated that there was the faunal succession in the Mio-Pliocene of central Myanmar caused by an environmental transition from rather wet to dryer conditions. According to our preliminary analysis, the ratio of the woodland dwellers in the Gwebin fauna is lower than in the Chaingzauk fauna, suggesting that the paleoenvironment of the Plio-Pleistocene Gwebin fauna is likely to be more open and dryer condition than the late Miocene/early Pliocene Chaingzauk fauna. The present discoveries of *Hystrix* fossils also support this view: that is, the higher-crowned species, which is adapted to the drier condition, has replaced the lower-crowned ones, which is adapted to the wet condition.

Keywords: Myanmar, *Hystrix*, Neogene, Irrawaddy sediments