

International Symposium

**Siberia and Japan in the Late Paleolithic Period**  
Adaptive Strategies of Humans in the Last Glacial Period



Program, Abstracts and Information

Nov.27th and 28th, 2010

Keio University  
Tokyo, Japan

## Late Pleistocene mammal faunas in Japan and China

Yoshinari Kawamura

Department of Earth Sciences, 1 Hirosawa, Igaya-cho, Kariya, Aichi 448-8542, Japan.

E-mail: yskawamr@aecc.aichi-edu.ac.jp

Late Pleistocene mammal faunas are overviewed in Japan and China herein. In present Japan, three biogeographic regions are recognized on the basis of regional faunal differences. They are Hokkaido north of the Tsugaru Strait, Honshu-Shikoku-Kyushu between the Tsugaru and Tokara Straits, and the Ryukyu Islands south of the latter strait (Fig.2, right). Late Pleistocene faunas in Japan are explained separately for the three regions, because fossil records indicate that the regional differences were also recognized in the Late Pleistocene.

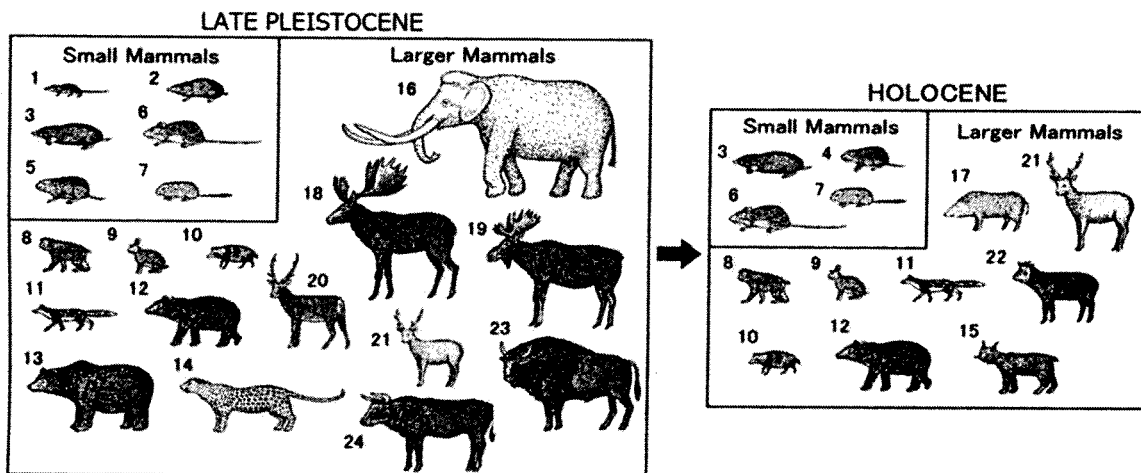
In Hokkaido, mammal remains of Late Pleistocene age are scarce, and are represented by only three species of large mammals, such as *Mammuthus primigenius* (woolly mammoth), *Palaeoloxodon naumanni* (Naumann's elephant), and *Sinomegaceros yabei* (Yabe's giant deer). *M. primigenius* is the most representative element of the Mammoth Fauna which was distributed in the Late Pleistocene of Northeast China as stated below, while the remaining two are elements common to the Late Pleistocene fauna of Honshu-Shikoku-Kyushu(see Fig.1).

In Honshu-Shikoku-Kyushu, diversified mammal remains of this age are known from many localities, and thus the mammal fauna is well reconstructed as shown in Fig.1. The fauna is characterized by high percentage of extant species, but contains extinct and exotic species. Endemic species of this region commonly occur as in the present fauna of the region. The extinct and exotic species were extinguished before the onset of the Holocene as shown in Fig.1. This event is comparable with the world-wide late Quaternary extinction phenomenon.

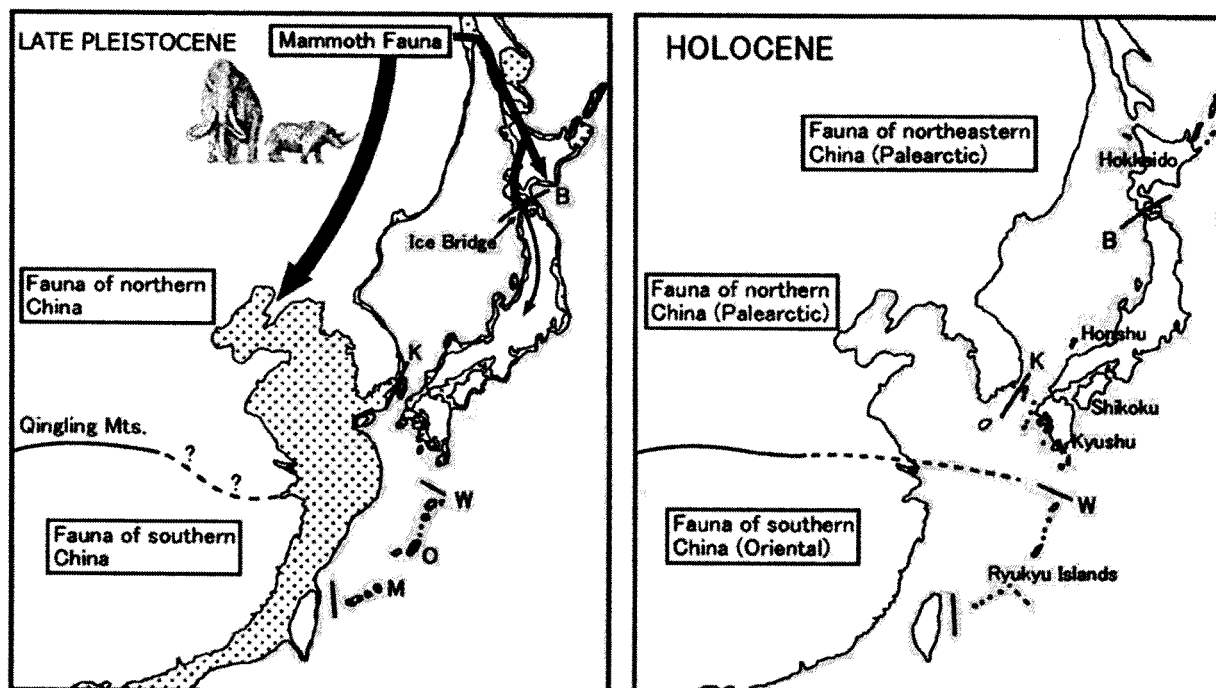
In the Ryukyu Islands, mammal remains of Late Pleistocene age are relatively abundant. The fauna reconstructed from the remains consists of medium-sized and small mammals, and shows low diversity and high endemism. These characters indicate that the fauna is of insular type.

The Late Pleistocene mammal faunas of China are biogeographically divided into three, namely the faunas of Northeast China, North China, and South China. The fauna of Northeast China is characterized by the elements of the Mammoth Fauna, which are exemplified by *M. primigenius* and *Coelodonta antiquitatis* (woolly rhinoceros). The fauna of North China lacks the elements of the Mammoth Fauna, and consists of more temperate elements. This fauna extends southward to the Qingling Mountains which is considered to be the boundary between the Palearctic and Oriental Regions in the present day. The fauna of South China covers the region south of the mountains. It is characterized by warmer forest elements including monkeys, apes, civets, giant panda, tapirs, and stegodontid(*Stegodon orientalis*).

The faunal relationship between Japan and China is discussed. The discussion includes the inter-regional migration model that I have been proposed (Fig.2). The model ironically emphasizes the isolation of most part of Japan during the Late Pleistocene.



**Figure 1** Representative land mammals of Honshu-Shikoku-Kyushu in the Late Pleistocene and Holocene, showing the faunal change caused mainly by extinctions (partly modified from Kawamura, 2007). 1: *Sorex shinto*, 2: *Anourosorex japonicus*, 3: *Mogera* sp., 4: *Phaulomys* cf. *smithii*, 5: *Microtus epiratticepoides*, 6: *Apodemus speciosus*, 7: *Glirulus japonicus*, 8: *Macaca fuscata*, 9: *Lepus brachyurus*, 10: *Nyctereutes procyonoides*, 11: *Vulpes vulpes*, 12: *Selenarctos thibetanus*, 13: *Ursus arctos*, 14: *Panthera pardus*, 15: *Lynx lynx*, 16: *Palaeoloxodon naumanni*, 17: *Sus scrofa*, 18: *Sinomegaceros yabei*, 19: *Alces alces*, 20: *Cervus praenipponicus*, 21: *Cervus nippon*, 22: *Capricornis crispus*, 23: *Bison priscus*, 24: *Bos primigenius*.



**Figure 2** Mammalian paleobiogeography of the Japanese Islands and adjacent continent in the Late Pleistocene and Holocene, showing the immigration of the Mammoth Fauna into the islands during the Late Pleistocene (partly modified from Kawamura, 2007). Dotted part: area merged by a 100m drop from the present sea level, solid line: biogeographic boundary line B: Blakiston's line (Tsugaru Strait), K: Korea Strait line, W: Watase's line (Tokara Strait), Broken line: minor or inferred boundary.