Shape Changes by Era in the Japanese Dog

SHIGEHARA Nobuo

An investigation was made into changes in shape of the Japanese dog after the Jomon era. The distances for each of the groups were calculated using Penrose's shape distance.

Japanese dogs of the Jomon era retained the primitive characters and were in terms of shape, stable. According to the size categories described by Hasebe, these dogs fell into the small-class (♀) and medium-small-class (♂). Generally speaking, changes in the shape of dogs could be seen from the Yayoi era onwards. Progressively, a change in size came about in Japanese dogs. However, until the medieval era there were almost no changes in skull proportion. It may be said that, up to the Kamakura era, a change in the size of Japanese dogs was achieved. It is a feature of the change in skulls of Japanese dogs that, after the Kamakura era and up to the Edo era, while the length of the skull did not change, the breadth of it increased. In this manner, in terms of changes in size, including the matter of domestication, changes in skull proportions began from the medieval era. Considering that there was a large change in human skull proportion between the Jomon era and the Kamakura era, changes in the shape of the dog is deeply interesting in terms of time at which it occurred.

Cluster Analysis Using Penrose's Shape Distance

Although, the Jomon dogs were considered to belong to one breed, Jomon dogs from eastern Japan and western Japan were grouped into different clusters. Into the cluster of western Japanese dogs fell, Yayoi dog, the medieval dog and the Edo dog. Dogs from the Kamakura era were grouped in to the same cluster as eastern Japanese dogs from the Jomon era. In similarities between the present Shiba dog and other acient dogs, there is a hint that the Shiba dog has close relation to Jomon era dogs.