

# Morphological Differentiation Among Taiwan Populations of Formosa Mouse, *Mus caroli* (Rodentia: Murid)

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## ABSTRACT

Biological morphology, implying clues and information of evolutionary process, can be treated as the final adaptation of all kinds of variations. Traditionally, the method research morphological variation is using calipers. When using calipers to measure the fine specimen, it's easy to get generate false inaccuracy erroneous judgment and to cause damages. Otherwise, computer tomography (CT) is a more accurate measurement that has advantage of more precisely ability for analyzing and avoids damages to specimens and etc. So, in this study, we apply morphometrics analyzed method to examine the Formosan mouse (*Mus caroli*) populations, a common species in Taiwan by using both "calipers" and "CT combined with 3D image reconstruction" to compare the differences of PCA, DA, CD. From the results, the measurement "CT combined with 3D image reconstruction" provides more evolutionary implications because of its accuracy. It can be suggested that the population of Formosan mouse (*Mus caroli*) in Taiwan was extended from continental Asian area during several glacial periods. And the populations also extended from the central Taiwan, to northern, southern and eastern areas. The southern populations might be separated from others because the sea level rose between glacial periods. The southern populations was divergent from other more significantly. And the variations among the population of different areas were detectable because of ecological adaptations probably.

Keywords : *Mus caroli*

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