



Title	Historical effects on genetic and morphological divergences among populations of serpent species in the Ryukyu Archipelago(Abstract_論文要旨)
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論 文 要 旨

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Historical effects on genetic and morphological divergences among populations of serpent species in the Ryukyu Archipelago

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It is generally considered that geographical pattern of species distribution is determined by ecological and historical factors. The purpose of the present study was to evaluate historical effects in shaping the current geographical pattern of genetic and morphological divergences in several snake lineages. I firstly tested whether inter- and intra-specific genetic divergences in the Asian keelback snake of the Ryukyu Archipelago and Taiwan were caused by a series of vicariance between the islands. The results indicated that only two of the seven major divergences were explained by the vicariant events proposed by paleogeographical studies. Then, I examined a consistency between geographical patterns of molecular and morphological divergences in the Japanese coral snake. The results showed two of the three subspecies were non-monophyletic taxa. Detailed morphological examinations suggested that coloristic characters showed continuous geographical variation. Variation in a scalation character was also geographically continuous, roughly showing a latitudinal cline. Finally, I conducted phylogenetic analyses for the two related genera *Cyclophiops* and *Ptyas* from the East Asian islands and the continent to identify the phylogenetic origins of the two Ryukyu species. The analyses revealed that the Central and Southern Ryukyu species are not monophyletic to each other, indicating that they have independent origins. The above results as a whole indicated that geographical/environmental changes during the Pleistocene have contributed to rapid morphological divergences in the Central Ryukyu snakes. In addition to the historical effects, substantial influence of ecological effects is identified as factors of the formation of geographical heterogeneity in morphological traits in the Central Ryukyus.

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