

Adaptation and diversification of species after they arrive on islands can lead to evolutionary oddities or shifts in observable traits in response to the different selective pressures of island systems. This study examines diversification and colonization history in two closely related West Indian Ocean skink species. Despite the geographic separation and morphological distinction between *Flexiseps johannae* from the Comoros Archipelago and *Flexiseps ardouini* from Madagascar, previous studies found little genetic differentiation. Here, we use an integrative approach, combining molecular and morphological data, to investigate variation among island populations and gain insight into the biogeographic history of these skinks. Our high-resolution genomic data obtained through ddRAD sequencing revealed a surprising relationship between the two species; Malagasy *F. ardouini* was found to be nested within the four Comoran island populations of *F. johannae*, and *F. johannae* divided into two population clusters corresponding to the eastern and western islands of the archipelago. Patterns of morphological variation, however, do not follow the same trends as molecular variation. Our morphological data obtained through 3D geometric morphometric analysis of the skinks' skulls and traditional morphometric analysis of external body characteristics revealed the two species are significantly morphologically distinct and can be easily distinguished by differences in body size, skull shape, and scale counts. Some morphological variation was also present among the Comoran island populations. Overall, the molecular results of this study support a more complex colonization history of *F. johannae* on the Comoros Archipelago than previously considered. One possible dispersal route involves a there-and-back-again scenario with an initial colonization event from Madagascar and secondary re-colonization back to Madagascar. Thus, we propose *F. johannae* in the Comoros Archipelago as an excellent new system to study dispersal and diversification in skinks, which can provide valuable insights into the mechanisms behind speciation on islands and body-form evolution in lizards.

13:45 Kathleen Webster - More complex than you'd skink: Morphological and molecular investigation into the island biogeography of *Flexiseps* skinks in the Comoros Archipelago