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Aspects of the biodiversity and biogeography of Sri Lanka

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Abstract
Sri Lanka has one of south Asia's greatest reptile diversity as well as endemicity, with 153 species, 80 of which are endemic. The Western Ghats and Sri Lanka are sister-areas, sharing many genera and species exclusively. This association is in concordance with the theory of invasions by elements from the Asian mainland in waves. The two rainforest reptile faunas of the two regions are at present separated by a shallow saltwater stretch and a fairly extensive dry savanna-type vegetation. The extralimital elements of Sri Lanka show Indo-Malayan, Afro-Mediterranean, Filippino and probably Madagascan links. However, the island shows a large number of endemic species, many of which have been considered 'relict species', while others are vicars of species found in south-western India, their evolution suspected to be the result of the disjunction of a once contiguous population as a result of the separation of Sri Lanka from the Indian peninsula.

Key words
Biodiversity, biogeography, coefficient of community, endemicity, reptiles, Sri Lanka.

Introduction
The wet zone of Sri Lanka represents the only aseasonal area between Malesia and the eastern coast of Madagascar (Ashton and Gunatilleke, 1987). Sri Lanka's connection to the Asian mainland, for the first time during the Miocene and many times subsequently (Cooray, 1967) has lead to the invasion of many species of distinctly Indian origin, although endemicity in the herpetofauna is also high. Jansen and De Zoysa (1992) showed that Sri Lanka has greater biodiversity per unit area than any other Asian country, this concentrated to the mesic south-western lowlands and the central highlands. Reduction in Sri Lanka's forest cover between 1900 and 1988 has been estimated to be from 70% to about 20%, major causal factors being logging for timber, for settlement and agriculture and the expansion of tourism (Preu and Erdelen, 1992). At present, natural forest covers about 30% of the dry zone and 9% of the wet zone (Erdelen, 1993).

Sri Lanka and the Indian peninsula together constitute the tectonic structure known as the Deccan Plate. Although the similarity between the herpetofaunas of Sri Lanka and the Western Ghats have been commented upon by numerous workers, the degree of similarity between the two regions have never been quantitatively assessed. Cluster analyses were performed using data on binary (presence-absence) similarity coefficients between 185 genera of non-marine/non-estuarine reptiles from the ten physiographic regions within the south Asian region defined by Das (1994)to examine relationships between the island nation and other regaions within the Indian subcontinent.

Material and methods
A matrix showing the distribution of individual genera was prepared (Das, in press), linking reptile taxa to ten broad physiographic units of the south Asian region: Andaman Islands, Deccan, Eastern Ghats, Himalayas, Nicobar Islands, Northeast, Northwest, Sri Lanka, Trans-Himalayas and Western Ghats. Coefficients of Community (C_j) between these physiographic zones were estimated using Jaccard's (1908) Index: