GROWTH OF KNOWLEDGE ON THE REPTILES OF INDIA, WITH AN INTRODUCTION TO SYSTEMATICS, TAXONOMY AND NOMENCLATURE

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The progress in our understanding of the contents of the reptile fauna of India is reviewed. The early classification of the fauna was undertaken during Vedic times, and included groupings based on form, medium occupied, sensory powers and whether wild or domesticated. The Linnean system of binomial nomenclature, adopted since 1758, is the most widely used scheme of classification, but has its limitations, chiefly in being incompatible with the principle of common descent. Phylogenetic and other classifications, based on natural groups, have lead to a proliferation of studies on systematics, from the traditional studies of morphology and anatomy, to the use of more modern molecular techniques. Aspects of systematics, taxonomy and nomenclature are discussed for non-systematists. The last stocktaking of the reptile fauna of India, in the three volume Fauna of British India series by Malcolm Smith is compared with the fauna now known from the country. A general conclusion reached is that there is much to be learnt of the country's highly diverse and endemic reptile fauna, but efforts need to be accelerated in the face of loss of habitats as a result of deforestation and of systematic expertise itself, with cuts in research funding and realignment of policies on basic research.

INTRODUCTION

"Cross-cultural evidence indicates that people everywhere spontaneously organize living kinds into rigidly ranked taxonomic types despite wide morphological variation among those exemplars presumed to have the nature of their type."

(S. Atran, 1990: 70)

The earliest known attempt to classify the reptiles of India was made during the Vedic period, based on form, reproductive mode, medium occupied (earth, air or water), the presumed number of sensory powers possessed, and whether wild or domesticated (Rao 1957, Ghildial-Sharma and Sharma 1989). For instance, the work 'Manu Smriti', compiled between 200 BC and 200 AD, classified animals on the basis of their reproductive modes, and snakes, crocodiles and tortoises, therefore, were grouped along with birds and fish, for being (primarily) oviparous. The UMASVATI, a Jain work written between 135-219 AD,

classified animals according to their sensory powers. Within this system, reptiles were grouped with humans, for possessing the senses of sight, hearing, taste, smell and touch. The classification systems of ancient Indian physicians, Charak and Susruta, made use of differences based on habitats, and the eight categories identified include aquatic species that live in water, those in dry hills, amphibious species and animals living in marshy or water-logged areas. The work SUSRUTA NAGARJUNA classified snakes into 5 groups (including both venomous and non-venomous).

So why did our ancestors consider it important to classify animals? There are two fundamentally opposing schools of thought. Diamond (1966) and Gould (1979) considered the primary purpose of indigenous names to be utilitarian. On the other hand, the complex classification and naming process (= folk taxonomy and nomenclature) support Berlin's (1992) theory that humans are innately curious about the natural world, and that names are supplied to species that may not always have a direct utilitarian value.

In taxonomy, the modern science of classification of animals and plants, it is said that stability of combinations of nomen is an indication of lack of progress! This generalisation is true for

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