

ENDEMISM

Species which are spread over a wide area or in different ecological conditions are said to be **cosmopolitan**. Some of them, called **endemics** are restricted in their distribution to a small region. This phenomenon of restricted distribution associated with some geographical or ecological factors is called **endemism**. Numerous plant families, genera and species are found to be highly endemic. In the Himalayas, some 28% (3,169 dicot species) of all the dicots are endemic (**Chatterjee**, 1939). For example, a great proportion of the taxa of the flora of oceanic islands is endemic to those islands only. Some important endemic plant genera of Indian deserts are *Omania*, *Xerotia*, *Leptadenia*, *Daemia*, etc., and of India are *Amphicome*, *Dittoceras*, *Dodecania*, *Ulteria*, *Cruddasia*, *Heylandia*, *Lagenandra*, *Zeylandium*, *Hitchenia*, *Blepharistemma*, etc. Certain important examples of endemic Indian plant species include *Ficus religiosa*, *Ficus bengalensis*, *Aegle marmelos*, *Artocarpus nobilis*, *Crotalaria juncea*, *Datura metal*, *Indigofera tinctoria*, *Elettaria*, *Eleusine coracana*, *Piper nigrum*, *Piper longum*, *Sesamum indicus*, *Hibiscus abelmoschus*, *Butea monosperma*, *Beaumontia grandiflora*, *Memecylon umbellatum*, *Holmskioldia sanguinea*, *Feronia elephantum*, *Saraca indica*, *Shorea robusta* and *Caryota urens*.

Among endemics, some species exhibit very localised distribution and are called **local endemics**. Sometimes mutants appear and vanish without being able to compete with parental species, and are called **pseudo-endemics**. Some species may show a restricted distribution but cover large areas in course of time. This is called **expanding** or **progressive endemics**. Some old species may be restricted to a small region because of a severe decline in their population, a phenomenon called **contracting** or **retrogressive endemics**. Lastly, there are following two more types of endemics:

1. Palaeoendemics or epibiotic or relics. These endemics are supposed to have been the remnants of a once widely distributed taxon in the past, e.g., *Ginkgo biloba*, *Sequoia semipervirens*, *Trapa natans*.

2. Neoendemics or microendemics. These endemic taxa are supposed to have evolved only during the recent times and did not have sufficient time to extend their ranges of distribution.