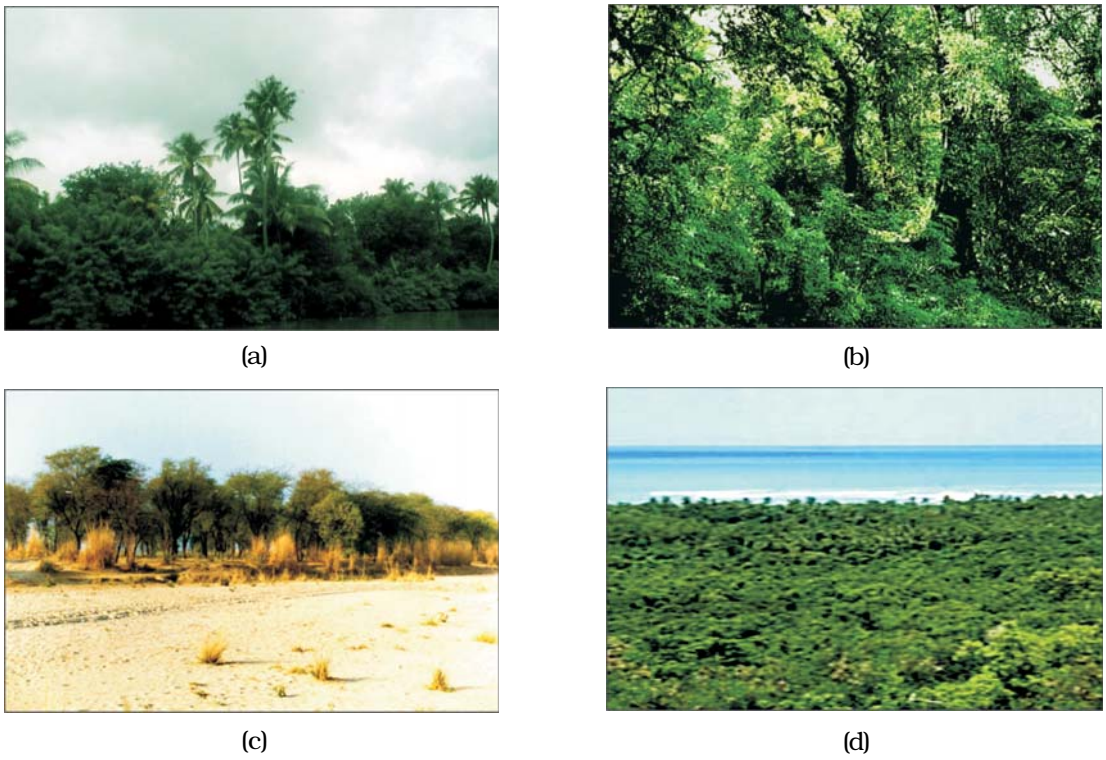

Figure 13.2 Major biomes of India : (a) Tropical rain forest; (b) Deciduous forest; (c) Desert; (d) Sea coast

What are the key elements that lead to so much variation in the physical and chemical conditions of different habitats? The most important ones are temperature, water, light and soil. We must remember that the physico-chemical (abiotic) components alone do not characterise the habitat of an organism completely; the habitat includes biotic components also – pathogens, parasites, predators and competitors – of the organism with which they interacts constantly. We assume that over a period of time, the organism had through natural selection, evolved adaptations to optimise its survival and reproduction in its habitat.

13.1.1 Major Abiotic Factors

Temperature: Temperature is the most ecologically relevant environmental factor. You are aware that the average temperature on land varies seasonally, decreases progressively from the equator towards the poles and from plains to the mountain tops. It ranges from subzero levels in polar areas and high altitudes to >50^{0}C in tropical deserts in summer. There are, however, unique habitats such as thermal springs and deep-sea hydrothermal vents where average temperatures exceed 100^0 C. It is general knowledge that mango trees do not and cannot grow in temperate countries like Canada and Germany, snow leopards are not found in Kerala forests and tuna fish are rarely caught beyond tropical