

of the *Palm Ferns* (Zamiæ, or Cycadeæ) stands at the lowest stage, and is directly allied to ferns, as the name implies, so that some botanists have actually included them in the fern group. In their external form they resemble palms, as well as tree ferns (or tree-like frond ferns), and are adorned by a crown of feathery leaves, which is placed either on a thick, short trunk, or on a slender, simple trunk like a pillar. At the present day this class, once so rich in forms, is but scantily represented by a few forms living in the torrid zones, namely, by the coniferous ferns (Zamia), the thick-trunked bread-tree (Encephalartos), and the slender-trunked Caffir bread-tree (Cycas). They may frequently be seen in hot-houses, and are generally mistaken for palms. A much greater variety of forms than occurs among the still existing palm ferns (Cycadeæ) is presented by the extinct and fossil Cycads, which occurred in great numbers more towards the middle of the secondary period, during the Jura, and which at that time principally determined the character of the forests.

The class of *Pines*, or *coniferous trees* (Coniferæ), has preserved down to our day a greater variety of forms than have the palm ferns. Even at the present time the trees belonging to it—cypresses, juniper trees, and trees of life (Thuja), the box and ginko trees (Salisburya), the araucaria and cedars, but above all the genus Pinus, which is so rich in forms, with its numerous and important species, spruces, pines, firs, larches, etc.—still play a very important part in the most different parts of the earth, and almost of themselves constitute extensive forests. Yet this development of pines seems but weak in comparison with the predominance which the class had attained over other plants during the early