

*Zamia*; the leaves also, of the compound pinnate character, are smaller and more bushy; and it resembles, as a whole, a decapitated palm, with a coronal of fern bound atop, as if to conceal the mutilation. With these Cycadaceæ there flourished in the marshes of the period plants of a family still widely spread over the various climatal zones, but which now attain to any considerable size only within the tropics. I refer to the Equisetaceæ, or horse-tail family,—slim, cone-crowned plants, fringed with green verticillate leaves, or branches rather, and which in this country are rarely thicker than a quill, or rarely exceed eighteen inches in height, but which have been found in the intertropical swamps of South America fifteen feet high, and three inches in circumference at the lower part of the stem. In the Oolite of Scotland, a well-marked, long-extinct species, the *Equisetum columnare* must have attained, judging from the thickness of the stem, which is sometimes fully three inches in diameter, to at least thrice the size of its tropical congeners. As shown by its remains, which occur in the lignite shales of Brora, it must have been a plant of considerable elegance of form, encircled at each joint at some of the specimens by torus-like mouldings grooved crosswise, traversed in the spaces between by longitudinal markings, delicately punctulated, and gracefully feathered from root to pointed top by its verticillate garlands of spiky leaves. The Lycopodiaceæ or club-moss family, existing in rather massier and more arboraceous forms than now, though reduced in a greatly more than equal degree from their gigantic congeners of the Coal Measures, were also abundant (as shown by the rocks of Helmsdale) in the Oolitic flora of Scotland; and with these there mingled various genera, consisting of numerous species of well-marked ferns. Ferns, indeed, so far as we yet know, may be regarded as forming the base, and pines the apex, of the terrestrial Oolitic flora; and between these two extremes most of its