

A 'FAMILY TREE' OF SCLERACTINIA

John E. N. VERON

Australian Institute of Marine Science, PMB 3, Townsville MC 4810, Australia; j.Veron@aims.gov.au

Reconstructing the evolutionary sequences of Scleractinia is a complicated process for it must encompass the fossil records over very great intervals of time, the taxonomic relationships of extant corals, and studies of coral systematics using molecular techniques. The top of the 'tree' (the families of extant corals) is well established, as is the main branches through the Cenozoic, for most of these have extant representatives. However, little is known about the Mesozoic ancestors of Scleractinia, for the majority of families are extinct and their systematic status is controversial.

CORALS: POINTING TO A DIFFERENT EVOLUTION

John E. N. VERON

Australian Institute of Marine Science, PMB 3, Townsville MC 4810, Australia; j.Veron@aims.gov.au

Reticulate evolution, where evolutionary trees have branches which converge as well as diverge, is change without improvement. It is evolution driven by physical environment, not natural selection. It is a reconstruction in evolutionary time of what can be observed in geographic space today. It underpins neo-Darwinian evolution but operates according to different rules. It brings solutions to many deep-seated taxonomic, biogeographic and systematic problems that trouble biologists today: it must be taken into account if we are to understand how the natural world is organised and how evolution occurs.