

# CORAL REEFS AND RELATED CARBONATE STRUCTURES AS INDICATORS OF GREAT AGE

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## INTRODUCTION

One of the most important--if not the most important--evidences for long periods of time in Earth's history is the presence of large, calcium carbonate structures in the oceans and within the sedimentary formations of the earth, which were built up by living organisms. A very large number of marine animals and plants secrete skeletal materials for the protection and (or) stability of their soft, cellular parts. The calcium carbonate which they secrete must first be extracted from the sea water by the complex metabolic processes of the secreting cells. It is universally recognized by both Christian and non-Christian scholars that the life processes (cell metabolism, digestion, excretion, secretion, etc.) of living organisms have remained essentially constant since the origin of these organisms.

Our grounds for being confident that the metabolic processes have remained relatively constant include (a) the fundamental stability of the physical laws by which metabolism is made possible (diffusion, chemical reactions, colloidal relationships, etc.), (b) the structure of individual fossils, (c) the form and organization of fossilized communities of ancient organisms, and (d) the fact that there has evidently been no great or fundamental change in metabolic processes since the time of the Garden of Eden (the Bible represents life in the Garden as similar to that which we have today).

The relative constancy of the metabolic processes during the time which has elapsed since the creation of life leaves us with a firm basis on which to discuss the amounts of time represented by the great geologic structures which were formed as a result of biological growth. As we progress into the body of this paper, it will be seen that long spans of time are also demonstrated not only by the growth of lime-secreting organisms, but also by other fundamental parts of the sedimentary rock-forming process which are not dependent upon growth rates. These include the cementation of the grains, which make up carbonate rocks and the processes by which layers of evaporite minerals are laid down from evaporating sea water.

A careful treatment of carbonate structures and of the other sedimentary deposits associated with them is especially important because of the fact that they have been completely overlooked by at least most of the leaders in the fundamentalist creationist organizations which have developed within the past 15 years. Most of the data which are given in the following parts of this paper have been well known and much used by the scientific world for more than a decade, but because this information was available mainly in the technical journals the creationist leaders did not become familiar with it. Instead, they have usually continued to suppose that the great limestone formations of the world were merely the result of physical processes such as abrasion, precipitation, water transport, settling, and some unknown rapid process of hardening. Thus they failed to realize that great, biologically-built, carbonate structures exist, and that (a) most of the carbonate sediments which are a part of these structures consist of grains which were produced near to the site of their final deposition and cementation, and (b) that these grains were finally cemented into limestone with crystals