

It is well known that reef-building corals can not make any appreciable growth if the water depth is greater than 300 ft., and that most growth occurs at depths of less than 100 ft. (E. J. W. Barrington, Invertebrate Structure and Function, 1967, p. 492.)

14. Hoffmeister, "Growth Rate Estimates," p. 356.

15. Mayor, "Growth Rate," p. 65.

16. Mayor, "Growth Rate," p. 64-65. This study was made on the Aua reef-flat, between Breaker Point, Pago Pago Harbor, and the southern end of Aua Village. The area of the reef-flat was 2,550,000 square feet. Mayor and his associates determined the number of coral heads (rounded masses of growing coral) which were on this entire area, and observed their growth for an extended period of time. They calculated the weight of mineral substance being added, by periodically collecting samples of the new growth and weighing and chemically analyzing them. The total number of coral heads growing on the test area was approximately 978,700. About 85% of them were of Genus Porites and Genus Acropora--which are the two fastest reef-building corals. The calculations showed that the corals were adding about "2.8 pounds" (This should read 28 lbs.) of mineral deposit (limestone) to each square yard of the area per year. "Taking the specific gravity of limestone as 1.8, this would be equivalent to a layer of coral about 8 mm. in thickness per annum over the entire reef-flat" (p. 65). It is true, as mentioned previously, that massive Porites coral colonies make an upward advance of about 17 mm. per year in the Pacific, but the reef surface is never comprised of one solid, continuous colony (just as a forest is never made up of a solid mass of tree trunks).

17. Ladd, "Drilling Operations," p. 863 ff.

18. The deepest layers of this atoll have been classified as belonging to the Eocene Epoch, which is usually placed at 35 to 50 million years ago by geologists and paleontologists, but we are not here attempting to defend these specific lengths of time.

19. Han-Lee Mao, "Bikini and Nearby Atolls, Marshall Islands, Physical Oceanography in the Marshall Islands Area," U. S. Geological Survey Professional Paper 260-R, 1955, p. 681-682.

20. See Footnote no. 3 of Chapter 1 for an explanation of the expression "local stratigraphic column."

21. Ladd, "Drilling Operations," p. 873-895 and Plates 264 and 265.

22. E. B. Leopold, "Bikini and Nearby Atolls, Marshall Islands, Miocene Pollen and Spore Flora of Eniwetok Atoll, Marshall Islands," U. S. Geological Survey Professional Paper 260-II, 1969, p. 1138.

23. Ibid.