
A Conflict between Biology and Geology: The "Thirty Years' War" in Coral Reef Studies, 1910-1939

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Abstract

The history of coral reef science is often told in two parts, with a nineteenth-century story of the development of Charles Darwin's theory of reef formation followed by an epilogue about the widely-acclaimed confirmation of that theory shortly after World War II by geologists working at the US nuclear proving ground in the Pacific, where at Enewetak Atoll they used a drill rig to collect core samples of the reef all the way to its volcanic foundation nearly a mile below sea level. Scarcely any historical attention has been paid to reef studies in the intervening period or, indeed, to the question of how Darwin's theory remained sufficiently controversial that the postwar core drilling was major scientific news. I argue that the core drillings at Bikini and Enewetak atolls were, notwithstanding their outsize place in conventional histories, a continuation of pre-war "normal science," and I show that the scientists brought by the US Navy to conduct pre- and post-bomb surveys brought with them the very research questions that had animated the remarkably combative field of reef studies in the inter-war years. This combat was truly inter-disciplinary, both in the sense that it formed an independent scientific discourse that overlapped the domains of multiple disciplines and in the sense that the main controversies were polarized in a way that made it seem that the disciplines themselves were combatants. At the poles of the dispute were biology and geology; clustered around them were (on one side) reef ecology and "coral bionomics" and (on the other side) physical geography or physiography. The figures in these disputes considered Darwin's coral theory to be just one among many possible explanations for the origin and shape of reefs. Throughout what the authors of a 1949 review essay called the "Thirty-Years' War" over reef formation, the questions of research location and method were primary. Alternatives ranged from the "home study" of hydrographic charts and photographs of reefs' physical features to highly localized and labor intensive experimental studies of coral reproduction and growth in the field. However, as I demonstrate, nearly all participants acknowledged that deep core drilling all the way to bedrock through a living reef would be a way to resolve many of the disputes. I close by contrasting my interpretation of the reef studies at the nuclear proving ground with other historians' descriptions of military patronage of other scientific research during and after World War II, arguing against framing the issue in terms of "exploitation."

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