

SCIENCE

VOL. LXVIII

AUGUST 10, 1928

No. 1754

CORAL REEFS AS ZONATIONAL PLANT FORMATIONS¹

CONTENTS

<i>Coral Reefs as Zonational Plant Formations: PROFESSOR WILLIAM ALBERT SETCHELL</i>	119
<i>Science and the Press: AUSTIN H. CLARK</i>	121
<i>Popular Program of the New York Meeting of the American Association: HELEN ANN WARREN</i>	126
<i>Scientific Events:</i>	
<i>The New Astronomical Observatory at Stockholm; The International Fuel Conference; The Current Program of the Illinois State Geological Survey; Dr. Smith's Collection of Chemical Memorabilia at the University of Pennsylvania</i>	128
<i>Scientific Notes and News</i>	130
<i>University and Educational Notes</i>	133
<i>Discussion and Correspondence:</i>	
<i>The Viability of Algae: PROFESSOR CHAS. H. OTIS. What is the First Fossil Collected by Man: LOUISE SUDBURY. Query on "A Revision of the Fundamental Law of Habit Formation": DR. G. WAKEHAM. Geometrical Constructions on the Sphere: H. R. GRUMMANN</i>	134
<i>Scientific Books:</i>	
<i>Bennett on the Soils of Cuba: PROFESSOR WM. BATTLE COBB</i>	136
<i>Scientific Apparatus and Laboratory Methods:</i>	
<i>Extract of Fruit Skins as Selective Nuclear Stains: MERCY A. SOUTHWICK. A Micro-guillotine: MORRIS BELKIN</i>	137
<i>Special Articles:</i>	
<i>Application of the Feulgen Reaction to Fibroblasts and Sarcomatous Cells in Tissue Cultures: PROFESSOR E. V. COWDREY. The Pleistocene Elephants of Santa Rosa Island: PROFESSOR CHESTER STOCK and E. L. FURLONG. A Collection of Anaerobic Bacteria: PROFESSOR IVAN C. HALL</i>	138
<i>Science News</i>	x

IN choosing a meeting of the Botanical Society of America for the presentation of a paper concerning itself with coral reefs, I am acting deliberately and with serious intention of emphasizing a point, to me at least, seemingly fundamental to all coral reef discussion, and that is this: the coral reef, so called, is dominated and controlled by its plant symbionts even where there is a variety of organisms concerned. Furthermore, there are certain reefs, and these even of the complex atoll type, which are so overwhelmingly, even completely, made up of calcareous algae that they clearly merit the appellation of "nullipore" reefs rather than the time-hallowed, popular, but scientifically misleading designation of "coral" reefs.

Coral reefs have suffered from being early connected with a theory in such an intimate and intriguing fashion as to invite attack against the protagonists of theory rather than to stimulate unprejudiced study of reef history from the point of view of a symbiotic entity, such as, for example, its origin, its growth, its capacity for assuming and retaining definite morphologic form, as well as for morphologic change, its ability to regenerate and to reproduce itself. Any symbiotic aggregate, having unity in general habit, controlled by a certain dominant organism or certain dominant organisms, behaves as an ecologic unit and is designated as a formation. When a formation, because of the environmental factors controlling it, borders or encircles, even irregularly, the substratum of its habitat, it becomes a zonal or zonational formation, and it, as has been pointed out by various writers, but by Clements in particular, is an epitome of succession.

Zonal formations are well known in both animal and plant ecology. The "coral" reef, to use the general term in the abstract, but without prejudice, may be made up entirely of calcareous algae, as Rose Atoll or Onoatua Atoll, or of both, as Funafuti Atoll, the barrier reef about Tahiti, Moorea, etc., or the exposed fringing reefs of Tahiti, Tutuila, etc. It seems impossible to imagine any "coral" reef, other than certain small "reef patches," being constructed absolutely of corals alone, since even the most important of

¹ Delivered before the Pacific section of the Botanical Society of America, at Pomona College, California, June 15, 1928.

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal.

Lancaster, Pa. Garrison, N. Y.
Annual Subscription, \$6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

Science

68 (1754)

Science **68** (1754), x-142.

ARTICLE TOOLS

<http://science.sciencemag.org/content/68/1754.citation>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.