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RECENT DEVELOPMENTS IN THE STUDY OF DENTAL CARIES

By Dr. RUSSELL W. BUNTING

PROFESSOR OF ORAL PATHOLOGY, SCHOOL OF DENTISTRY, UNIVERSITY OF MICHIGAN; DIRECTOR OF DENTAL CARIES RESEARCH IN THE CHILDREN'S FUND OF MICHIGAN

DENTAL caries, commonly known as decay of the teeth, is the most prevalent disease of mankind. Since there has been no known means of preventing the disease, dentists during the past one hundred years or so have been endeavoring to preserve the teeth by filling the cavities as they appear and by restoring, to the best of their ability, the lost dental tissues by artificial substitutes. In every generation the dental profession has made some attempt to study the underlying causes of the disease and to discover some means of its prevention. During the past few years, however, scientific investigations of this problem have been greatly increased and well-organized research groups have been making intensive studies of the disease. As a result of these studies certain definite facts have been established and many preconceived ideas have been shown to be fallacious. Although the problem has not been fully solved, distinct progress

has been made and a clearer understanding of the true nature of the disease has been attained. It is the purpose of this paper to state the outstanding achievements of recent researches on dental caries.

The disease in question is most unique. There is no other pathologic process which even remotely resembles it. Dental caries is not comparable to caries of the bone. It is not a true necrotic process, nor is it attended by inflammatory reactions in the affected tissues. It is characterized by the formation of progressive lesions in the teeth, simple decalcifications by acids formed locally as a result of the fermentation of carbohydrates by certain aciduric types of bacteria. The process is dependent on the infestation of the mouth by specific types of bacteria capable of producing acids by the fermentation of residual carbohydrate food materials in the mouth, and capable of living in their own acid products. These bacteria

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THE recent progress in the art of communication by wire and radio as well as in the design and construction of all kinds of apparatus for the generation, transformation, control, transmission, and reception of electrical energy is due in a large measure to a fuller understanding of circuit theory and to a more complete knowledge of methods of analysis and schemes of solution. That circuit theory has the broadest application in all fields of electrical engineering has long been conceded. That greater emphasis should be laid on the generality of the subject has been realized only recently by practicing engineers and by teachers of electrical engineering. This book has been written with this definite aim in view. It presents a rational treatment of circuit theory, and is intended chiefly as a text in the course of Alternating Currents which usually precedes courses in Alternating Current Machinery, power and communication circuits, to the study of which it is basic in character. The book should therefore fit into most Electrical Engineering curricula either in the second semester of the junior year or in the first semester of the senior year.

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