

EVOLUTION

Evolution and Diet Causing Man to Lose His Teeth

A GLOOMY future for the teeth of mankind—a future in which we shall have to pamper our mouths increasingly—is foreseen by Dr. William Seidel of the U. S. Marine Hospital in Norfolk, Va. Dr. Seidel bases his forecast on existing knowledge of the causes of various dental ills.

Evolution and diet are causing man to lose his teeth, in Dr. Seidel's opinion. Since evolution is an irreversible process, the human oral cavity appears destined to be forever afflicted with caries, pyorrhea and misplaced teeth, he says.

Loss of teeth through evolution has been going on for centuries, Dr. Seidel points out. The great length of time is indicated by the fact that we have already completely lost 16 permanent teeth, having now only 32, while the usual number for mammals is 48. Individually one can lose a good many teeth at one séance with an exodontist, but the evolutionary process is slow and it has required many centuries to produce such a change in our dentition.

This evolutionary change dates back at least to the age of the caveman, according to Dr. Seidel, and accompanying it there has been a gradual degeneracy of the whole masticatory apparatus. The teeth themselves, he says, are not anatomically degenerate, with the exception of the third molars, which are often rudimentary; and as some persons do not have third molars, the evolution in dental economy may still be in progress.

Dental caries, or decay, is the most universal and common disease of mankind and this condition, as well as that of malformed mandibles, is due to the fact that the masticatory organs of modern man have become unfitted properly to perform their functions, according to Dr. Seidel. Not only are the gums and teeth themselves insufficient, but the mandible and maxilla, together with their alveolar bone and sockets, are also deficient.

The mere fact of the high incidence of caries proves the inadaptability of the teeth to modern diet—an inadaptability that is hygienic in character rather than mechanical or physiological. Modern foods do not keep the teeth clean; and nature surely intended that they should be kept clean through natural processes rather than by modern artificial means which are found so necessary today.

While cleanliness may not be the only factor in decay, it is considered to be the most important one.

In studying the cause of caries, investigators have taken two routes, those on one holding to the belief that bacteriological activity is the essential factor, while those on the other believe that the nutritional and physiological processes hold the clue, a theory supported to some degree by animal experimentation.

Aside from the nutritional aspect as a primary cause, modern diet has two very important secondary effects on the teeth: first, the decreased roughage results in failure in mechanical cleansing; and second, the increased starch and carbohydrate intake forms plaques on the teeth which make ideal growth media for bacteria. At the present time, according to Dr. Seidel, the best definition and most tenable explanation of caries is that the condition is a decalcification due to the dissolution of the calcium salts of the enamel by the acids formed by the bac-

teria under the plaques. As the decay reaches the dentine, further deleterious action is produced in the more abundant organic matter there. For practical purposes, therefore, one can hold fast to that old prophylactic maxim that "A clean tooth never decays."

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ENGINEERING

Develop Device to Test Bumpiness of Diesel Fuel

A DD to your vocabulary—cetene number!

You've heard of octane number in rating the bumpiness, or knocking power, of your gasoline. Cetene number is the same thing for the fuel oil in Diesel engines. You'll hear more of cetene number as the gasoline resources of the nation diminish and transportation turns more and more to Diesel-propelled vehicles.

Already fuel engineers of Pennsylvania State College are studying Diesel fuels and their characteristics. Looking ahead, they are preparing for a condition now nearly at hand in truck and bus transportation, and which will some day come to pleasure cars.

Prof. P. H. Schweitzer and his research associate, Theodore B. Hetzel of the School of Engineering, explain that



MEASURING CETENE NUMBER

This apparatus is used at Pennsylvania State College to measure the bumpiness, or knocking rating, of Diesel fuels. Cetene number is the Diesel fuel equivalent of the octane number for gasolines—the smoothness of performance in the engine.