

DENTISTRY

Tooth Decay Theories

► ANOTHER MONKEY wrench has been tossed into the already confused puzzle over the real cause of tooth decay.

The latest addition to the muddle comes from Drs. William E. Hutton and T. D. Lewis of the University of California College of Dentistry.

One of the leading theories of tooth decay holds that certain bacteria, primarily *Lactobacillus acidophilus*, produce an acid which causes caries. The bacteria thrive in their own acid, and "eat" their way deeper into the tooth.

A part of this theory holds that we get some protection from "friendly" bacteria in the saliva. These "friendly" salivary bacteria fight the caries-producing bacteria.

The two California researchers have found evidence suggesting that just the opposite process may also take place. That is, the caries-producing bacteria may fight back, holding down the growth of the "friendly" salivary bacteria.

The findings were made in experiments with a strain of actinomycetes, a kind of bacteria which has been observed to create caries-like lesions in hamsters. The actinomycetes were found capable of inhibiting the growth of "friendly" bacteria in saliva.

Dr. Hutton said the work is another demonstration that present theories of tooth decay are too simple. Tooth decay, he says, is actually much more complex than these theories allow for. The possibility of alkaline as well as acid breakdown, tooth structure, the individual's condition and environment, the interrelationships of bacteria—these are some of the things that must be fully understood.

Dr. Hutton added that the saliva, the composition of which is strongly influenced by the physiological and psychic condition of the individual, and the diet, which is related to environment, may be the dominant influences in tooth decay.

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PUBLIC HEALTH

Chest X-Rays for Men

► MEN OVER age 35 should have regular periodic X-ray examinations made of their chests. The object is to detect lung cancer at its early stage when chances of cure are best.

Lung cancer is on the increase. For men over 45 it far outranks tuberculosis of the lungs as a cause of death. While men are the chief victims of this form of cancer, women are being attacked by it more frequently today than 20 years ago.

Commenting on this increase, statisticians of the Metropolitan Life Insurance Company say that it is hard to account for or even to determine how much of the increase is real. Improved techniques for diagnosis and their much more frequent use, and more physicians trained in this field have probably led to many cases being detected and reported which in the past would have been overlooked.

The search for the cause or causes of the increase in lung cancer is being pushed. Radioactive materials and some chromates are known to cause lung cancer in experimental animals and in men in certain occupations.

"On the other hand, the suggestion that the increase in air pollution may be a factor is unsupported by any real evidence," the statisticians state.

"The role of other factors such as coal tar products, excessive tobacco smoking and specific contaminants is still far from conclusive."

It will be a long time, the statisticians say, before studies showing the effects, if any, of environment can give conclusive results.

Controlling the disease, therefore, depends on "continuing popular education in the symptoms of the disease and the promotion of measures for early detection and treatment."

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CLIMATOLOGY

Oceanic Mud Shows Cold Weather Ahead

► FROM THE depths of the ocean floor comes evidence that our climate, bad as we may already think it, will get worse before it gets better.

A century or two of deteriorating weather was forecast to the Royal Society by Dr. J. D. H. Wiseman of the British Museum of Natural History, on the basis of information gleaned from cores of mud gouged out of the sediment on the ocean beds. In such cores scientists find evidence of the climate of bygone days showing a more or less cyclic fluctuation of temperatures.

Having charted these records of past atmospheric temperatures and noting their rhythm, Dr. Wiseman predicts that in the next hundred years or two our climate will grow steadily colder.

One way scientists decipher bygone weather records from cores of ocean mud is to judge the abundance of pinpoint-size seashells at each level in the core. These shells are the fossil remains of tiny one-celled animals, the *Foraminifera*, the same creatures whose shells piled up through the ages to form the vast chalk beds of Mississippi and Georgia.

The *Foraminifera* live largely on the surface of the ocean. As they die their shells sink to the ocean floor along with other sediments. They flourish in periods of warm weather, become scarcer when the climate changes for the colder.

Therefore, layers of sediment in the core which contain an abundance of *Foraminifera* shells record periods of warm weather, and vice versa. Scientists are able to correlate the various layers in the core quite closely with recent and distant historical and geological ages and can thus chart chronologically the changes in the earth's climate.

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