

CAVITIES IN TEETH DUE TO SPECIAL GERM

A special germ, deficient diet, and predisposing conditions in the mouth, combine to foster decay of teeth, according to discoveries by Drs. J. E. Rodriguez and R. A. Kelsner, of the U. S. Army Medical School. Dr. Rodriguez has found that an individual germ of the lactic acid family is the one responsible for the piercing of the hard enamel of the teeth and exposing the soft dentine inside to many different types of bacteria. It thrives in an acid medium, and itself produces an acid condition.

The germs are now being used on rats in order to see whether it is not possible to produce diseased teeth artificially in the living animal, since experiments on isolated teeth have been successful. "I hope that within five or six months, we will be able to duplicate in rats the changes which take place in the teeth of human beings," Capt. Rodriguez states.

These investigations do not prove that the mere presence of the causal organism is the only requirement for the appearance of dental decay, it is pointed out. Conditions of diet must prevail which foster the growth of the germs, and further, it must be easy for them to lodge in the mouth so that the etching process can go on. "I believe that the two factors are of equal importance," Capt. Rodriguez says. "The environment in the mouth must be favorable to the organisms."

This is why three sets of rats are being used in the experiments designed to produce artificial decay. One group gets a perfect diet; a second group receives an unusually high percentage of sugar, and a third set receives food which is deficient in calcium and in fat-soluble vitamin A. Dr. Rodriguez then watches how the teeth of the rats develop, and follows the changes which result when the mouths of the rodents are infected with the lactic organisms. The high-sugar diet is used to provide the offending organisms with plenty of material for the manufacture of acid, and the deficient rations are employed to study the function of calcium salts and the fat-soluble vitamin in the formation of teeth, as some investigators claim that sound teeth cannot develop unless there are adequate supplies of each of these two substances.

GERMS FURNISH GROWTH PROMOTERS FOR PLANTS

Substances working on plants much as vitamins A and B do on animals have been studied by Dr. Florence A. Mockeridge of University College. The materials she found stimulating the growth of plants were associated with certain soil bacteria.

In her experiments Dr. Meckeridge used small, green water plants called duckweeds. One lot of duckweeds were put into dishes or water containing merely all the needed minerals. A second lot were put into similar dishes with a small amount of a killed culture of soil bacteria in addition to the minerals. At the end of nine weeks there were about twice as many plants in the second lot as in the first. Moreover, the plants that received the small amount of bacterial material averaged larger and were more healthy in appearance. The increase due to the bacterial culture was apparently out of all proportion to the actual substance added. Furthermore, increasing the amount of dead bacterial culture did not appreciably increase the remarkable benefits to the plants, in this way acting differently than an addition of more food material. The bacteria contributed something that behaved like a vitamin, enabling the plant to utilize to greater advantage food materials already available.
