

to the heavy recording equipment in the truck, by means of a small radio transmitter carried in a knapsack.

Mr. Kellogg did not extend his suggestion to include the possible use of the same set-up as a means of putting

songs of wild birds directly "on the air" by radio; but there would seem to be no fundamental difficulty about doing this with a somewhat modified apparatus, if it should be thought worth while.

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not allowed much sugar tended to have freedom from this disease.

The possibility that dental caries might be controlled by a vaccine was explained by Dr. Bunting as follows:

"An immunologic principle antagonistic to *B. acidophilus* (the germ causing tooth decay) has been demonstrated in the blood of caries-free individuals in whose mouths, as a rule, *B. acidophilus* does not exist; and when planted there-in promptly disappears," he said.

"Further studies must be made of the environment of the tooth; the local conditions which prevail in the mouth and the general systemic and dietetic states which influence them. This will involve further search in the saliva fluids for some hitherto undiscovered chemical or some immunologic principle related to the activity of the disease.

"From it may come some chemical or vaccine therapeutic method by which the disease may be directly controlled.

"Then, too, the effect of various dietary principles and programs must be studied to determine their effect on the environment of the tooth and the activity of dental caries. These, at the present time, seem to be the most promising leads for future investigation.

Practical Advice

"In the meantime, there is an earnest desire on the part of many child health workers to know what practical measures of caries control are of proven value in order that they may put them into immediate effect for the benefit of the children under their supervision. These, as far as I know, are quite meager."

The rules as set forth by Dr. Bunting are:

1. Repair of carious cavities already formed in the teeth.
2. Mouth hygiene.
3. The feeding of simple, uniform, fairly adequate diets in which sugar is reduced to a minimum.

An adoption of these measures will not insure absolute freedom from dental disease, Dr. Bunting points out. "But, as has been demonstrated in many large groups of institutionalized children, the feeding of the diet alone will prevent or greatly reduce dental caries in the great majority of children. Further than this, at the present time, we are unable to go."

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DENTISTRY

Advises Reducing Sugar in Diet to Avoid Tooth Decay

Mouth Washes Will Not Prevent It, Scientist Warns; Hygiene Helps; Anti-Caries Vaccine Suggested

CHILDREN of the future may be vaccinated against tooth decay just as they are now vaccinated to protect them from smallpox. For the present, cutting down the sugar in their diet and keeping their teeth clean and in good repair are the best means of protecting them against tooth decay or caries. Antiseptic or germicidal mouth washes, however, are useless in this connection.

These are the conclusions drawn by Dr. Russell W. Bunting, of the University of Michigan, in a report to the Society for Research in Child Development.

Although it seems rational to use antiseptic washes to control this disease which is caused by bacteria, they are really not effective, Dr. Bunting indicated. The organisms that cause the trouble are well protected by a film covering so that antiseptics used as mouth washes are prevented from reaching the bacteria, he explained.

"It is possible that eventually a suitable preparation may be found but, as yet, no method of controlling dental disease by the use of antiseptics or germicides has been devised," he said.

Cleanliness of the mouth does not insure lack of tooth decay. It is true that "a clean tooth cannot decay," Dr. Bunting said, but, because of the shape and arrangement of the human teeth, it is impossible to have them perfectly clean.

Good Teeth Suffer

No relationship has been found between the hardness or perfection of the teeth and the amount of tooth decay suffered by the individual. Your best teeth may decay and the softest remain unaffected, Dr. Bunting said.

Neither has the adding of calcium or phosphorus to the diet been effective in reducing tooth decay, he believes.

Sugar has, however, been found to be very important in this connection, Dr. Bunting said. A remarkably low degree of dental caries, or tooth decay, was observed in children on a low-sugar diet although the diet was deficient in calcium, phosphorus, and vitamin D.

When children who were receiving an adequate diet were given an increased amount of sugar, they began to have tooth decay. Other children who were

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