

DR. FREDERICK S. MCKAY

May 22, 1944

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Dr. H. Trendley Dean
National Institute of Health
Bethesda, Maryland

My dear Trendley:

The enclosed is from our local paper of yesterday, Sunday, May 21st, for your information.

I understand it to be a release by the Associated Press as originally written by the Science Editor, Howard Blakeslee, but adapted for this publication by a member of the local staff.

The personal reference was not entirely with my consent.

I assume it may have appeared elsewhere in this country.

You may have received a communication from Dr. Theodor Blum of New York relative to a symposium on the subject of Fluorides in relation to caries, to be held by a Society there the latter part of October.

I have accepted an invitation to present a paper dealing with the History of our investigation, which I have accepted although I have not been informed to date as to the action of their Board regarding it.

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Evidently this symposium was inspired by the project at Newburg and in reply to the letter of invitation, which also asked for suggestions as to other speakers, I referred Dr. Blum to you and mentioned also Drs. Bibby and Ast.

I hope very much that you can take part, not alone because of your field work but also because of my pleasure in seeing you again.

Will you check the mailing list to see that I am included, as I think I have missed some of the recent Bulletins.

Congratulations are due on your recent election as President of the Society for Dental Research.

All my kind regards.

Very truly yours,

Frederick S. McKay

Heading of enclosed newspaper clipping:

"Colorado Springs Watches New York Fluorine Studies"
by W. G. Hutchinson

Colorado Springs Watches New York Fluorine Studies

By W. G. HUTCHINSON

Of especial interest to Colorado Springs, where such studies were first made, is a 10-year experiment in upstate New York to determine thru a city-wide survey the effect on tooth decay of fluorine in drinking water.

Two cities—Newburgh and Kingston—have been chosen for the experiment, which, if successful, probably will mean that half the present decay can be stopped in teeth. Each city has a 30,000 population and the two are only 30 miles apart, so that other conditions are approximately equal.

Newburgh is placing about 45 pounds a day of a white salt fluorine in its drinking water, equal to 1 part of fluorine to 1,000,000 parts of water. Kingston is getting none.

Colorado Springs water contains about 1.6 parts of fluorine per 1,000,000 parts of water, picked up by streams that feed the city system.

A City of Dental Pioneers.

The effects of the fluorine on the teeth of children in Newburgh will be compared with examination of Kingston children who will be getting fluorine-free water. Medical examinations of the children in both cities also will determine the effects. If any, of such small quantities of fluorine on general health. There are at present well over one million persons living in communities in the United States where more than the Newburgh quota of fluorine is present in drinking water, and no observable effects, other than on teeth,

To Newburgh, it now appears, may go the glory of pioneering the first demonstration in human history that there is an easy, universal way to reduce tooth decay.

Yet Kingston in a way will be the real heroine. She will serve as the check against errors. A city thus serving is something new. Animals are controls often; human volunteers, occasionally. But a city, for 10 years, no. That is the long period the two cities are undertaking.

The New York State Department of Health obtained co-operation of both cities. The department will direct the work, furnishing dental experts while pediatricians of the two cities cooperate. The department is guided by a technical advisory committee on fluorination of water supplies, made up of leading pediatricians, toxicologists, oral pathologists and roentgenologists.

Studies By Dr. McKay.

Fluorine, one of the 92 chemical elements, is a lemon-yellow gas, which does not exist in nature in a pure state. Being the most reactive

of all elements, it combines with nearly everything and is about the 20th most common element in the earth's crust.

Studies made in the last decade since Dr. Frederick A. McKay began the first study of the effect of fluorine in drinking water has established the fact that tooth decay is decreased by fluorine, altho where it is excessive, mottled, chalky enamel and brown-stain result in some cases.

While a child's tooth is forming, fluorine, if present in drinking water, enters the enamel, studies have shown. The enamel, already fixed, with its fluorine, remains for life.

The bad effect of fluorine was discovered about 10 years ago, and for a time was thought to be the only effect. Some communities, in alarm, changed the sources of their water supply to get rid of fluorine, and in Colorado Springs there was a considerable figure.

Fluorine 'Not All Bad'

Gradually the other side has come to light. In laboratories it was found that a bare trace of fluorine in enamel is good, apparently driving away lactobacillus acidophilus, the mouth bacterium now regarded as the main source of tooth decay. Sound enamel was found to contain more fluorine than enamel in which there were cavities.

More than a score of cities have been studied, some with no fluorine in drinking water and others with varying amounts. There generally was less dental decay in the fluorine communities, and where fluorine was not too high, there was no mottled enamel but tooth soundness prevailed.

There were six times as many children free from any dental decay in areas using one part per million of fluorine in the water as in comparable communities with fluorine-free water.

Only two years ago one of the nation's leading dental authorities, Dr. H. T. Dean of the National Institute of Health and a dental surgeon for the United States Public

Health Service, reported that studies in 21 cities, including Colorado Springs, showed less decay, where there was fluorine in drinking water.

How Decay Varied.

For two years, he and associates examined 1,237 white children 12 to 14 years old. These studies showed that tooth decay varied from 109 per 1,000 children where the fluoride content of their drinking water was less than 1 of a part per 1,000,000 to only 200 per 1,000 children where the fluorine content was more than 1.4 parts per 1,000,000.

The worst decay was found in Key West, Fla., where no fluorine was found in the water supply.

Bauxite, Ark., early changed its water supply to a fluorine-free source, the Saline river. Bauxite now has children who get fluorine and others who presumably get none. The fluorine children appear to have sounder teeth. The degree of soundness appears proportional to the length of time they drank the fluorine water.

The Newburgh-Kingston experiment may take up to 10 years what otherwise would require 50. Dr. David B. Asst, assistant director of Oral Hygiene, New York State Health Department, says:

"The department is not advocating general application of fluorine to drinking water supplies, but is using this demonstration to determine the desirability and practicability of such a procedure and to get a pattern which can be followed by other communities in a safe and accurate manner."

Physiology
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al Research Section

Handwritten signature

May 30, 1944

Dr. Fredrick S. McKay
700 Exchange Bank Bldg.
Colorado Springs
Colorado

Dear Fred:

Thanks for sending me the clipping which I read with much interest. Fluorine has certainly become a hot subject within recent years.

I received an invitation from Dr. Blum for the N.Y.C. meeting and wrote him that as soon as I received approval from the Director, I would accept. It will certainly be a pleasure to spend some time with you and wax reminiscent over the days when mottled enamel was just mottled enamel and nobody in the United States gave much of a d--n about it. Well it was a nice leisurely study in those days - if you didn't feel like studying an area this year, you just put it off for a year or two and it didn't make any difference - it was still there when we got there.

Am sending you some reprints under separate cover; don't know whether I've sent them before or not but here goes.

Will look forward to seeing you in October with the hope that perhaps it may be sooner than that.

With best regards,

Sincerely,

Trendley Dean
Senior Dental Surgeon

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