FREDERICK S. MCKAY, D. D. S.

Jan. 9, 1926.

ÇC.

F

₽.

Surgeon General, Public Health Service, Washington, D. C.

Dear Sir:

1911

During the past fifteen years there has been under way an investigation within the Dental Profession, of a certain extremely disfiguring defect of the enamel, of the personnt teeth, in which I have had avery active part, and at the present time the chief result of the investigation has been to determination that this defect is the result of some peculiarity of the water ingested during the period of enamel development. To-gether with this has been a pretty accurate location of the geographical areas of this country where this lesion occurs. In this connection I would emphasize the peculiarity that this is the only known dental defect that is characterized by definite geographical areas in its distribution.

In my desire to be as brief as possible in this preliminary presentation of this matter to your Department, I can do no more than present the most salient points which are summarised as follows:

- I This defect is characterised by defective development of the excel on the permanent teeth known as mettled enemel, and with this there is a secondary phase in which there is a dark stain embedded in the structure of the teeth usually in the most conspicuous position, namely on the front or labial surfaces of the upper front teeth.
- 2 In any district which is afflicted in this way this defect occurs in practically the entire native population. Communities are known where actually 100% of native persons are thus afflicted.
- 5 The defect is parament, no repair ever taking place, and the cradication of this stained area on the teeth is possible only through extreme measures.
- 4 It has been definitely determined beyond a dount that the water med in cooking and drinking is the responsible factor.
- 5 So far as is known at present afflicted districts exist in Colorado New Mexico, Arizona, Old Mexico, California, Idaho, South Dakota, Texas, Virginia, Bahama Islands, Italy and Holland.

The one most definitely located source of water associated with this lesion is from artesian wells in certain localities as the adoption of an artesian source of domestic water supply by a community carries with itthe potentiality of inflicting this demage upon its children, which would not be apparent until some six or eight years had elapsed, and as this possibility for damage cannot, in the state of our present knowledge, be predetermined it has been deemed important that your Department be made cognizant of the situation, particularly of the certain damage that will befall unborn generations. Nothing beyond the field work as outlined above, has been accomplished by this investigation thus far.



FREDERICK S. MCKAY, D. D. S.

Surgeon General

- 2 -

Various analyses of these associated waters have been made, but these are inconclusive, at least through superficial interpretations of their chemical content.

It is most modful then at this stage that a more careful and deeper study be made of these waters from the standpoint of the physiological chemist and I respect fully appeal for the assistance of your Department particularly in a chemical study of these waters with the view to determining what peculiarity of a chemical nature, differentiates them from other waters that from this standpoint may be termed "normal" and also what chemical ingredients or combination: may exist as a common factor in these waters from the various afflicted districts.

For your further information I enclose a reprint of a recent article that describes a very interesting local manifestation of this problem existing at Oakley, Idaho.

Very respectfully yours,

Fredrick S. In Kay

FSM:H.