

May 5, 1910.

Dr. P. S. McKay,

Colorado Springs, Colorado.

Dear Doctor:-

I received your letter of April 17th, how long ago I do not know. It seems that I stuck it in my pocket at some time, and by some change of my clothing it got away from me. I just opened it last night.

It seems that your investigations show a considerable scattering of the mottled teeth, and that is quite a wonderful thing, and the ferreting of it out is no child's play. But when you are through with it, we will know more about it. It is hardly worth while for me at this distance to discuss that part of the question very much, but I want to say a word in regard to your questions, and I may best do it in a somewhat dogmatic form, perhaps.

Nasmyth's membrane is on all teeth that are properly completed in their development, and if not worn away remains on them during life. It is worn away somewhat quickly, however, over the incisal edges of incisors and the cusps of other teeth. On the proximal surfaces it usually remains for a long time, or permanently. It is only the portions of the teeth that are worn by friction that lose this membrane. It is apparently as hard and firm as the enamel, but it is of a different structure, and re-acts differently toward acids.

As to your question regarding the enamel that is incomplete as to the cementing of the enamel rods together (is what I suppose you mean by uncemented enamel) I should not think that the

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stain we find between the uncemented rods has been deposited from the outside. I find quite a little of it deep in the tissue with open spaces between that and the surface, and the whole appearance of it convinces me that this deposit occurs during the development of the enamel - not afterward; yet as I stated in some of my letters to you, the fact that we can dissolve it out, makes it possible that it might be deposited after the teeth were developed, but I do not believe it is. If it is, you people certainly ought to be able to find teeth coming through the gums white, and afterward becoming black. It would require testimony of that kind of no uncertain character to convince me that these teeth become dark after they are erupted, but of course I am ready to receive evidence any time. I would require those who are making this claim that the coloring matter is deposited from the outside after the enamel is formed, to present actual cases where teeth come through white and are afterward colored. This you will find - that when the incisal edges of the teeth come through, they will be white, nearly all of them; even those most deeply colored have a white incisal edge; but when the other part of the tissues comes along, see whether or not that is not colored as it comes out from the gums.

The question as to why some teeth that are mottled are stained, and some are not, is an ugly one to tackle, and I had best say that I do not know. It is also true that some teeth that are atrophied are stained, and some are not. The majority of them are not stained, but a very large minority of them are stained. I should

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think that you in your work would have a very considerable opportunity to notice the little fellows whose teeth are coming through, and would be able to spot those that come through and become stained later. Of course that would settle the matter definitely, and it is the only thing that will.

As to why the stain selects a particular locality - the labial surface of the upper incisors - I have no data whatever. It is entirely different from the stain that we see on the teeth of mouth breathers; neither the same in substance, nor in the locality in which it is found. The green stain, as we call that seen in mouth breathers, is on and in Nasmyth's membrane. The stain in mottled teeth is not in Nasmyth's membrane, nor is it on the teeth, but it is in the teeth and within the enamel. When you say that it is positively not in your evidence that stained cases are mouth breathers, I have no doubt that you are correct. If I am right in my thought of the matter, mouth breathing would have no reference whatever to these stains. I wish you would write me how this statement is tallying with your observations.

Very truly,

G.V.B.