

Colorado Spring
April 17-1910

Dr. G. V. Black
Chicago Ill.

Dear Doctor Black-

Some more work has been done since I last wrote you. I believe that I did not give you the data that we collected along the 2 creeks between here & Palmer Lake. You will remember that Monument Creek comes out of the south end of Palmer Lake making its way down along ^{the} divide with the mountain range & joining with Fountain Creek which comes from Manitou and the West. The stream is there known as the Fountain until it joins the Arkansas just East of Pueblo.

The water from the north end of Palmer Lake goes down that side of that divide & finds its way into the C. L. L. L.

You will also remember that the divide upon which Palmer Lake sits extends out East &

is quite heavily timbered.

We stopped at two cirios on the way to Palmer Lake which gave us no data, because there were no natives, except however that we found two sisters who were raised, at least through the enamel growing years, in the town of Gillette which is one of the communities in the Cripple Creek District. This of course only brought a new locus of suspected territory into view. We had felt here that the Cripple Creek District was not much affected but these two cases were very typical both as to stain and mottling.

Coming next to Monument we found timber natives only two of which had the enamel defects. On other cirios ten natives out of timber had escaped. This makes Monument essentially different from the rest of this territory so far examined. The only point we got was that the water there is taken from the timbered divide to the east. This timbered country you will remember having passed through in the machine with Burton & Wilson.

At Palmer Lake 10 natives were found, five of which had defects.

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The data of these different schools are made out in detail in an enclosed sheet.

The second trip of about ten days ago was to cover the schools lying in what is known as Ute Pass, which is the defile in the mountains through which the Ute Indians used to come to visit the mineral springs at Manitou and hunt on the Plains and incidentally to get their tails pinched by the Plains Indians.

Ute Pass leads up to the West from Manitou and is traversed its entire length by the Colorado Midland R.R. The grade is very steep for the first few miles from Manitou to Cascade Canon, from which place the valley widens out but still ascends until the town of Divide, a altitude 9200 feet & distance 30 miles from Colorado Springs is reached. From here the railroad throws out a branch which circles around the north & west side of Pikes Peak, into the Cripple Creek District and it is on this branch that the town of Gillette is located.

Divide, as the name implies is a water shed, the waters running down Ute Pass into the Mountain, and down the other slope into the Platte.

This was our terminus and in the school there we found the data which is outlined on another sheet. The further fact was brought out here that three cases grown to the West in an immense area something like that of the State of Connecticut rolling surrounded by high mountain chains, but timberless known as South Park had developed no defects. Two were from the town of Jefferson which sits right out in the open lake and one from Fairplay which is close up against the mountains. Of course this is not conclusive but merely a hint. The country about Dinde is hard to describe. It is barren & bleak looking rolling & generally timberless. The principal agriculture of that region is growing potatoes which are of splendid variety and size, and fair yields of the famous Greelys. No irrigation is practiced the rainfall being abundant.

I have not the figures before me but my memory is that of ten natives at Dinde 8 had defects which is not what I was expecting to find in that region of potato culture.

A small school at Edlow on our return down the Pass had no natives so no data. The next town was Woodland Park which had

a fair sized school for this country & here you will see the percentage having enamel defects, (among natives) was large. This was contrary to my expectations because I had been learning to associate the enamel defects with mountainous & timbered areas, and Woodland Park as the name might imply, has a generous sprinkling of pine & evergreen trees. Green Mountain Falls was next and this school took the record: 100%. 10 children were in this school every one of them were natives there and defects were present in all. This town sits right in a narrow part of the Pass, in fact the school house is built quite a distance up on the side of the mountain and pines are numerous.

So the Pass shattered all my preconceived notions and left me hanging high & dry again.

However I have allowed myself to hope that the data secured at Monument has given us a clue and my next investigation will be at Eastonville to which place you went in the machine.

It is either just on the Palmer Lake Divide or just over it and I am trying to arrange to run out there some day this week on the train.

At our present point in this investigation it is a matter of some confusion to properly

Classify the data found in a given locality for the reason that we have mapped out areas which we know to be susceptible, therefore we must separate cases grown in areas of known susceptibility and having no bearing upon the district in which they are in at a given time.

Bearing in mind the ages of enamel growth, we must be particular to charge the defects when found against the home locality and also to separate those children who have few or no permanent teeth in the mouth from the general data of each school. I generally mark such as negative because we don't know what may be the condition of the unerupted teeth and it would not be fair to prejudice our data by admitting such to the count.

Therefore it seems to me that the value of the data collected in any given place is in what we find in the native who have left that community as a continuous residence.

Of course existing defects of enamel may be valuable as outlining other susceptible areas so far unknown. That would simply widen the horizon.

As the matter looks now I have a strong feeling that this question is ultimately going to land in Geology but so yet I can't see the connection unless after all it should prove to be the drinking or cooking water.

As to the milk, I am told that one of our largest dairies, the Sutton Dairy, which you visited receives large shipments daily from the Territory about Juntura & Eastonville which we will consider for the present as area of suspected insusceptibility.

I will let you know of course what I find when I go to other territories.

Now for a question or two: I find a general conception that has my this membrane is a structure that is present in the teeth only temporarily or for a limited time, and that it soon disappears.

On the other hand, is not has my this membrane a permanent fixture and is it not the hard glazed covering of the enamel that remains through life?

Will you please answer this for me in a way more or less dogmatic so that I may quote in case of dispute. I seem to be unable to find much written about this structure.

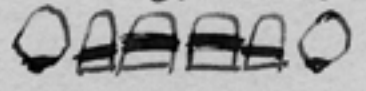
Another thing; in your study thus far, are you able to determine whether, given a area of unincorporated enamel is it possible or likely that

a substance which we call the "Brown Stain" can actually penetrate a normal nasmyth's membrane & enter the empty spaces between the enamel rods from the outside?

Again and again this question comes up, the claim being made that having these empty spaces between the rods, the coloring material comes through from the outside.

If so they why are not all mottled teeth stained? We know they are not. In fact I believe the percent-
age of mottled teeth that are stained is small.

You know in rare, find stain except on the Central & laterals, and usually it is confined to the labial surfaces and I have never seen but one case where the lower incisors were stained and that was confined to the labial surface.

Another thing - the fact that the stain is often found something like this  (I am like Com Bill Barrett; I never could draw anything except with a compass) indicates to some that the case is a mouth breather and the curved line of the stain follows the lip line. Is this not developmental in stead.

It has positively not been my experience that stained cases are mouth breathers.

Some physicians hold their mouth breathing through
quite tenaciously and it is hard to argue them
out of it.

I didn't mean to tire you with so long a letter
but you must expect an infliction like this every
now & a while as my system gets filled up.

I am already beginning to look forward to
seeing you in Denver in July at the National
meeting and am hoping that you can stay at
the Springs again for a time.

With kindest regards

Fredrick S. McKay

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Colorado Springs.