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Letter from N. D. Stebbins to John Muir, 1872 Oct 4.

N. D. Stebbins

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Coudersport, Potter Co., Pa., Oct. 4 '72.

My good friend Muir,

I have just finished the reading of Mr. Dane's new work on "Corals and Coral Islands". He closes up the work by giving his "Geological Conclusions". I was so amused in seeing how he like the Ann Arbor Prof. (Winchell) in his work on "Footsteps of Creation" had been misled by Whitney. I felt I must give you the benefit, thinking you may not as yet [have] met with the work so recently published to the world. The Prof. (Dana) gives what he thinks must have been a subsidence in some portion of the Pacific. Among others, one, he thinks, was six thousand miles in length and twenty-five hundred wide reaching from the Sandwich to the Friendly group. This subsidence was in progress, in all probability, during the Glacial era, their origin runs back into the Tertiary. The subsidence connected with the origin of coral islands and and barrier reefs of the Pacific amounted to several thousands of feet, perhaps full 10,000. And it may be here repeated that although this sounds large the change of level is not greater than the elevation which the Rocky Mountains, Andes, Alps and Himalayas since the close of the cretaceous era in the early Tertiary; and perhaps it does not exceed the upward bulging in the Glacial era of part of North America. The author has presented reasons for believing (Am. J. Sci. '71) that in this Glacial era the watershed of Canada between the River St. Lawrence and Hudson Bay was raised at least 5500 feet above its present level (1500), and that this plateau thus elevated was the origin of the great glacier which moved southeastward over New England. This region is the summit of the eastern arm of the great V-shaped azoic area of the continent, the earliest elevated land of North America; and it is not improbable that the other arm of the ∇ , reaching from Lake Superior and Huron northwestward to the Arctic, was raised at the same time to a higher elevation and was the source of glacial movements over the more central portions of the continent. We cannot say western portions also (his italics) since in the first place the facts, according to Prof. J. D. Whitney, do

since in the <u>first</u> place the facts, according to Prof. J. D. Whitney, do not sustain the statement, and in the <u>second</u>, the great mountain ranges of the West would have been a barrier to all influences from any central continental elevation, and besides the slopes of these ranges, even [if] the Pacific border, were higher to the north than now, would have determined the course of all western glacial movements. The idea that the two arms of the great azoic V were raised together is not without some support. It is therefore reasonable that late geological history, during the Glacial era after the mountain chains of the continent had been made and raised to their full height and the surface crust thickened over all the continent except the azoic nucleus, by successive beds to a thickness of thousands of feet, even 35,000 by the close of the Paleozoic along the Appalachians and much beyond this [along the] Pacific border.

I thought these extracts would interest you, if you had not seen them. Now I want you to find, if possible, about the time of the oolitic period some evidences of the deposits of cretaceous coral reefs. If anywhere, I should look in the neighborhood of San Luis Obispo where those monstrous marine shells are found. If I can remember -- I am [an] old fellow, and it is not uncommon to find old fools at the present day -the words underscored are found in Prof. Dana's work. I see by an extract from the Occident, a San Francisco religious paper, Prof. Agassiz is now, or has been in California. If so you will see him. I was amused on reading a criticism (from the same paper, copied in our eastern journals) on the reception of Prof. Agassiz. I will enclose it, perhaps you may not have met with it.

If you ever meet with dear old friends Prof. and Mrs. Carr give them my best love. I feel anxious to know how far Agassiz agrees with your theory of the origin of the canyons on the Pacific slope. As I said in my last, Moses like, I must be content to look on, but you, Joshua like, be of good <u>courage</u> and <u>strong</u>, and the good Lord bless you and fill you with knowledge both of Himself and Nature.

> Will you attend the scientific assn. which meets in S.F.? Yours truly,

N. D. Stebbins