

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland, Oregon

December 9, 1941

Dear Mr. Nixon:

Following your instructions, I visited the "Daddy Dome" region on December 2nd and 3rd, 1941, and submit the following brief summary report.

On December 2nd, Mr. Charles S. B. Henry and Mr. Needham were kind enough to take me over the area between Salem and Lebanon, where the Daddy Dome is indicated on the former's maps, and point out a large number of the charted attitudes of the rocks in the region. I spent December 3rd in the field alone. Mr. Henry has furnished me with his complete reports on this and other areas in the Willamette Valley and has given me the completed maps and the original field maps upon which he has worked. All these have been carefully gone over.

Mr. Henry is sincere, hard-working, and has completed a tremendous amount of detailed geology in various sections of the region although his work has not proven to be of equal value throughout all the area colored (without differentiation) on his map. In every locality visited I found that his measurements of dips and strikes, as actually seen in the field, were reasonably accurate.

The basic problem presented by Mr. Henry's reports is one that has always confronted the pioneer: All geologic workers in the Willamette Valley previous to Mr. Henry have stated that there were no closed structures in the area and that the sediments dipped predominately to the east, although none of them have ever published detailed reports or maps to substantiate their attitude. The result has been that Mr. Henry's work, which was started in 1931, has never been seriously received, even though T. P. Thayer, in 1938, showed the existence of folded structures in the valley south and east of Salem.

There is some justification for this attitude, however. If Mr. Henry had, in plotting his maps, restricted the areas indicating the different rock types to the areas where they actually appear, instead of projecting them for miles across the entire area (except where covered by lavas) when in fact they are covered in large part by many feet of Pleistocene and recent deposits, they would have been more acceptable to the profession.

The geologic columns accompanying his reports and maps are derived from local sections and well logs and are correlated by Mr. Henry with little or no paleontologic evidence and without sufficient overlap between sections to be convincing. Correlations based only on lithologic comparisons alone are extremely risky.

These considerations, however, do not totally detract from the value of the field work done, especially since Mr. Henry has presented it in a form whereby it can be checked in the field (a thing too infrequently done by professional geologists in Oregon).

I am forced, however, to question Mr. Henry's interpretation of some of these field facts. In his interpretation, he has not appeared to take into consideration the possibility of disturbance of bedding dips by local dike intrusions and landslides. In a few cases, he has measured as dips both

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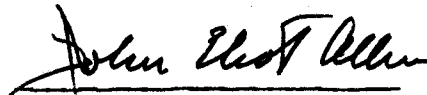
jointing, platy exfoliation structures, and foreset beddings. Secondly, in the area under specific discussion, Mr. Henry has based the entire west flank of an anticline extending from Brownsville to north of Scio upon less than a dozen registered attitudes of beds as indicated on his own preliminary and final maps. Out of this dozen attitudes I have visited eight, and of this eight, most were questionable due to one or another of the above conditions. The westward dips in the south flank of ~~the~~ Hungry Hill are definitely in a landslide area with numerous typical landslide ~~area with numerous typical landslide~~ hummocks. The westward dips on the small knoll southwest of Petersons Butte are adjacent to a large basalt dike which could easily have disturbed them from their original attitude. The westward dips on Peterson Butte are also upon landslide terrane. Thirdly, Mr. Henry has extrapolated these few insecure attitudes for tremendous distances without any evidence that the same trends exist from point to point. This is not the case on the eastern side of the syncline where his plotted dips are numerous and in large part well justified.

As I said before, Mr. Henry appears to be sincere and honest, but his lack of ability to interpret the results with a regard for all possible reasons for change in dip, his indiscriminate projection of structures for great distances, and his unjustified correlation of widely separated columns, seem to have resulted from the probably unconscious procedure of letting the wish be father to the thought.

After reviewing Mr. Henry's reports and accompanying him in the field, I feel rather strongly that in spite of the foregoing his field data has in the past been dismissed with too little consideration by members of the geological profession. Personally, I would like to do considerably more field work before I could condemn all of his field data. On the other hand, I feel that in interpreting this data, he has been too "bold in the conception of his hypotheses", without being sufficiently "rigorous in their demonstration".

In the particular case of Daddy Dome, it is my opinion that evidence for the existence of the Daddy Dome still rests upon such a slight and insecure foundation of facts that considerable further geological or possibly seismological field work must be done before any large investment in the shape of drilling wells should be considered.

Respectfully submitted,

  
Geologist

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