THE BOUNDARY BETWEEN THE HENNESSEY AND GARBER FORMATIONS IN NORTHWESTERN OKLAHOMA

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The separation of part of the Permian Red Beds of northwestern Oklahoma into the Hennessey and Garber formations is based upon a change in lithology. The Garber formation consists mainly of red to brown cross-bedded sandstones, whereas the Hennessey is made up largely of red shale. The uppermost massive sandstone in the transition zone between the Garber sand and Hennessey shale is usually taken as the top of the Garber.

Detailed mapping of this contact in northwestern Oklahoma shows that there is, to the south, a progressive increase of sands in the lower Hennessey. A massive sandstone bed which is taken as the top of the Garber in T. 19 N., R. 4 W., is 120 feet down in the Garber section near Brit-

ton, which is 30 miles farther south, if the lithologic boundary between the shaly and sandy formations be taken as the boundary between the Hennessey and Garber formations. In the mapping of surface structure it is therefore important to follow individual beds. Elevations taken at widely separated points on the uppermost sandy bed of the Garber on the assumption that it represents a definite stratigraphic position, do not give a true interpretation of the structure.

When considered regionally the boundary between the Hennessey and Garber formations extends southward through ranges three and four West, from the Oklahoma-Kansas line to and beyond Oklahoma City. The strike of this formation boundary is not in agreement with the strike as indicated by the regional surface structure of this area. The divergence is due to the lithologic change of the two formations, the increase of sands to the south causing the apparent lower limit of the Hennessey to move westward.