II. QUESTIONS CONCERNING THE RELATION OF PETROLIFEROUS PROVINCES TO THE SCHEME OF SEDIMENTATION

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(Abstract)

Attempts to find in a sedimentary province that locality most likely to be oil-bearing is a task fundamental to the work of mapping oil structure.

E. G. Woodruff[1] defined what he called petroliferous provinces for North America by a logical elimination of the least promising territory. This procedure left the most likely oil areas based on their having the best condition for organic accumulations, porous reservoirs, and structural possibilities.

W. A. Ver Wiebe[2] starting with Woodruff's tectonic and structural suggestions, divides the United States into its major tectonic basins, and uplifts and shows how the great oil fields are related to these.

It is found that both systems fail to narrow down as much as may be desired by the best looking territory from an oil-bearing point of view.

An analysis of the stratigraphy of the Appalachian, Gulf-Coast, and Oklahoma-Kansas fields raises pertinent questions concerning the source of sediments, their organic content, and its perserval after deposition.

The place of the oil fields in a sedimentary province, or basin of deposition, appears to lie chiefly in the area of mingled marine and continental beds where numerous sands are present. This zone appears to have been more favorable for all conditions required to collect and preserve organic material for future oil fields. It lies between the purely continental areas on the ancient landward side and the more marine opposite side. The study is limited to the sandstone oil fields.

It is suggested that settling, compaction, and adjustments within the beds of such great thickness as generally occur in such a series may account in part for the formation of oil traps. Such considerations in no way conflict with theories for other types of structural genesis.

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[1] "Petroliferous Provinces" Amer. Inst. Min. Met. Eng. Bul. 150 (1919) pp. 907-12.
[2] "Tectonic Classification of Oil Fields in the United States," Bul. Amer. Assn. Pet. Geol., Vol. 13, No. 5, May 1929, pp. 409-40.