

Illinois, Texas and Louisiana fields, etc., can nevertheless be connected with the tectonic structural dislocations of this continent and to the volcanic emanations which have accompanied these structural dislocations during the different geological ages. For further proofs of the connection of oil- and gas-fields with the disturbances of their region, even in the States which I mentioned last where it is not at all apparent on the surface, I refer you to the following papers:—one by G. D. Harris⁽³²⁾ on the "Geological Occurrence of Rock Salt (associated with petroleum) in Louisiana and Eastern-Texas," another by H. Foster Bain⁽³³⁾, State Geologist of Illinois, on the "Geology of Illinois Petroleum Fields," to the records of the late Edward Orton⁽³⁴⁾ on the Northwestern-Ohio fields, and to one of my previous papers⁽³⁵⁾ before this Institute.

In the California oil-fields a most obvious connection is to be seen in most of the fields, between the occurrences of oil and the very strong and profound disturbances of the strata occasioned by the orogenic uplifts of the hills and mountains of the Coast-Range. Contrary to many other oil-fields, the oil is here often found in highly disturbed and intensely crushed strata and in many cases along well defined and prominent structural faults. I refer you to Eldridge and Arnold's most interesting bulletin⁽³⁶⁾ on the Santa Clara Valley, Puente Hills and Los Angeles districts of Southern California, for many good proofs and examples of this. Briefly the evidence in this bulletin shows conclusively that the oil-fields follow, in narrow but long belts, the much disturbed and faulted zones at the foot of the higher mountain ranges of the Coast-Range, and that the oil is found to be stored in the porous reservoir-rocks or in the seams and joints of any and all the strata affected by these disturbances in a vertical geological scale of some 25,000 feet including at the bottom crystalline schists and gneisses resting on granite, then a great thickness of Tertiary resting unconformably on these crystalline schists, then an upper unconformable series, partly Tertiary and partly Quaternary, called the Fernando, and finally, overlying all,

32. Economic Geology, Vol. IV, No. 1, Jan. and Feb., 1909, pp. 12-34.

33. Economic Geology, Vol. III, No. 6, Aug. and Sept., 1908, pp. 487.

34. Geology of Ohio, Vol. VI, p. 46, et seq.

35. Journ. Can. Min. Inst., Vol. VI, pp. 102-108.

36. U.S. Geol. Surv., Bulletin No. 309.