

making and of minor structures are treated with reference to their importance in the production of oil.

DIFFERENTIATION AND STRUCTURE OF THE GLENN FORMATION

BY W. L. GOLDSTON, JR.

Abstract

The Glenn Formation is the only Pennsylvanian exposure in Oklahoma south of the Arbuckle Mountains. This exposure, which covers one hundred and sixty square miles more or less, is located in Carter and Love counties in the vicinity of Ardmore. The sediments of the Glenn are strongly folded and stand practically on edge over the greater part of the area. While in the employ of the Empire Gas and Fuel Company, the writer assisted by C. J. Wohlford, measured a number of sections across these sediments.

The sediments consist of shales, sandstones, limestones and conglomerates, and a total thickness of approximately nineteen thousand (19,000) feet.

In this paper an attempt is made to differentiate and classify this massive formation into its component members, and to correlate these rocks with those of the same age north of the Arbuckle Mountains, and with the Pennsylvanian rocks of Texas.

Considerable detail was made in the study of the structure of the Glenn Formation. Axes of anticlines and synclines were carefully located as most of the work was done with plane table.

A brief description of these folds, together with their relation to other buried Pennsylvanian folds in the region is given.

EXPERIMENTS ON ACCUMULATION OF OIL IN SANDS

BY W. H. EMMONS

Abstract

It has been observed in many places where oil and gas and water fill openings in porous beds enclosed in impervious ones, that gas rises above the oil and that the oil floats on water. Where the beds are arched to form a dome there is commonly a disc of gas surrounded by a circle of oil which is in turn surrounded by water. In some oil fields this gravitational arrangement is not clearly expressed, because the rocks are not fully saturated, or because the porous portions of the strata are spotted with impervious areas. The gravitational theory, because of the difficulties it has met in some fields, has appeared inadequate to many investigators, and elaborations and supporting theories have been proposed.

If, in a tube bent to represent an anticline, oil and water are charged with sand, the oil and water remain for months adhering tightly to the sand grains. There is no accumulation at the top of the tube and segrega-

tion is practically negligible. If, however, a small quantity of gas is introduced or generated in the tube, the oil and gas instantly begin to rise to the top of the fold, the gas rising above the oil and the oil floating on the water between sand grains. The separation is effected by a gas under pressure as low as four pounds to the square inch and some of the oil will move at least a foot per day.

Experiments have shown, however, that oil will move up a very low angle when gas is present under a few pounds of pressure. It will readily move up dips of one half degree and probably up dips considerably less when the pressure is high.

Experiments under various conditions with bent tubes appear to throw some little light on the manner in which oil accumulations are effected and gives indication of a probable cause of some of the tight, impervious spots in oil-bearing sands.

THE OIL AND GAS BEARING HORIZONS OF THE ORDOVICIAN IN OHIO

BY L. S. PANYITY

Abstract

This paper reviews the development of the Ordovician oil production in Ohio and the difficulties attending the first application of geology. Conditions in the Trenton are discussed and the discovery of a new oil zone about 600 feet below the top of the Trenton, representing probably the St. Peter sandstone, is described.