XLI. PRODUCING SANDS IN THE GARBER OIL FIELD.

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It might be of interest to the members of this society to know that we have in Oklahoma, perhaps, one of the most prolific oil pools, from the standpoint of the number of sands, of any single pool in the United States. This is the Garber-Covington pool located about fifteen miles east of Enid, Oklahoma in Garfield County and comprising a total area of approximately only ten square miles.

This individual pool has eighteen separate producing oil sands and three shallow gas sands. This does not mean that a well drilled anywhere in the field will encounter all of these sands. The well may encounter as many as ten sands and may find oil in commercial quantities in four or five of them.

While at least eighteen different producing horizons have been recognized at Garber, yet the erroneous idea should not be taken that these horizons extend over the entire pool as sheets or blankets of sand, equi-distant from each other, and extending one below the other all the way down. This is not the case. As is so commonly true in the Mid-Continent area these horizons are irregular, lenticular sand bodies which may cover a few square acres below one "location" and may thin out until they are almost or completely missing a few "locations" to one side. Nevertheless, while it is known that these sand bodies are lens-like in shape, yet, it is thought, that a number o fthese lens masses, which are contemporaneous as regards the time and origin of their deposition, constitute a definite and distinct "sand lens zone" or horizon.

These so-called oil sands are all true sandstones, which contain oil in the inter-granular spaces, except the lowest, stratigraphically speaking and the largest producer, which is a siliceous lime and is thought to be the Turkey Mountain line of lower Ordovician age. This production if from the lower Ordovician is stratigraphically the oldest production of commercial value found anywhere in the world.

It might be of further interest to know that five of the eighteen producing oil sands and the three shallow gas sands are in the lower Permian series. A number of years ago it was the concensus of opinion among geologists that oil in paying quantities would never be encountered in the continental red beds. However, since

that time, a number of fields including Healdton, Cement and others have found production in the basal part of the red beds. The production at Garber from the Permian ranges from near the Pennsylvanian-Permian contact upward almost to the base of the Enid formation, which is of middle permian age. The Hoy and Hotson sands are the most important productive horizons in the Permain. The average production from the Permain is 15-100 barrels daily per well.

In conclusion, it is believed that the above statements regarding the Garber oil pool are significant for the following reasons:—

1. The greater number of "sand lens zones" encountered in this one field points out the fact that this condition is probably present in the other petroliferous areas in this state. In other words our Oklahoma oil sands should be expected to occur in a great number of these "sand lens zones" and that while one part of the zone may be represented by only a showing of oil or may be even entirely absent, the zone may be quite thick and highly productive in a different part of the field.

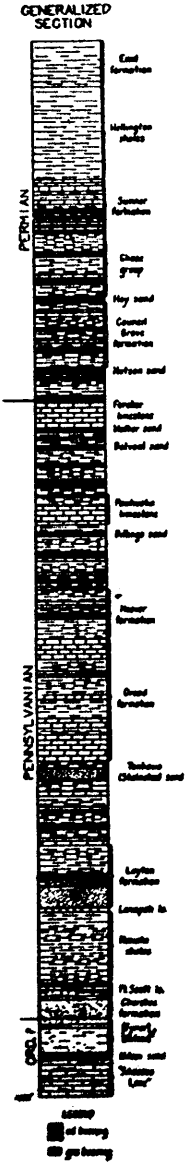
2. That there are possibilities of the production of oil from horizons of middle and lower Ordovician age, from a considerable portion of the state's present producing area, provided, of course, these formations are present.

3. That the shallow production from the lower Permian series at Garber should point out future possibilities of production from these horizons in certain other areas of the state, all other conditions being favorable.

PRODUCTIVE HORIZONS

Depth Feet	Name	Average Thickness Feet
800		5
920	(Shallow Gas sands)	10
1,000		8
1,100	Hoy sand	12
1,230	----------	8
1,350	--------	12
1,400	Hotson sand	8
1,500	----------	25
1,650	Walker sand	15
1,740	Belveal sand	25
1,820	----------	10
1,900	----------	14
2,100	Billings (Garber) sand	12
2,180	----------	15
2,300	----------	8
2,450	Upper Hoover sand	20
3,350	----------	10
3,560	Layton sand	30
4,200	Wilcox series (?)	40
4,370		
4,400---?	"Siliceous lime" (?)	?

PLATE VII



Section of the Garber Oil Field, showing Producing Horizons.