

CHAPTER II

MAGNITUDE AND GROWTH OF THE PETROLEUM INDUSTRY

Section 1. Characteristics of crude petroleum.

Crude petroleum consists of various hydrocarbons, including small proportions of oxygen, certain nitrogenous substances, and sometimes sulphur. In general there are three important types of crude petroleum; namely, (1) paraffin-base crudes, which contain solid paraffin hydrocarbons and practically no asphalt; (2) asphalt-base crudes, containing asphalt and no paraffin; and (3) paraffin-asphalt crudes, which are a combination of the former two types. The crudes produced in different sections of this country vary widely in viscosity and in specific gravity. Some light crudes flow almost as freely as water, while other crudes are so heavy that it is necessary to heat them in order to transport them by pipe line. The wide differences in the quality of different crudes present difficult problems in connection with their production, transportation, and refining, and result in wide differences in price. For example, the light paraffin-base crudes produced in the Appalachian field have always commanded a much higher price than other crudes, partly because of their high lubricating and gasoline content. In the mid-continent, the Rocky Mountain, and the California fields there is a very wide range in the prices paid at the oil wells for different crudes.

Section 2. Branches of the petroleum industry.

The domestic petroleum industry includes producing, pipe line, crude purchasing, refining, wholesale marketing, and retail marketing branches. A very large proportion of the business of each branch of the industry is handled either by large integrated companies whose activities compass the entire industry; or by concerns that have subsidiary or affiliated companies engaged in all branches of the business. A number of the larger companies own their own tank cars and operate fleets of tank steamers for coastwise and foreign trade.

Production.—The producing branch of the petroleum industry includes all of the activities incident to the exploration and location of oil lands, the drilling of oil wells, the extraction of crude petroleum from the earth and its storage in field or "settling" tanks. As natural gas is usually given off as the crude petroleum is brought to the surface, many producers extract casinghead gasoline from the gas and then sell the dry gas to gas companies, or, as has been done in California and in the Seminole (Oklahoma) pool, they maintain the gas pressure in the oil pool by forcing the dry gas back into the oil well. (See p. 30.)

The great bulk of the oil lands held by producing companies is leased from the landowner on a royalty basis. One-eighth is the