

auger enter below the surface of the oil, the reaction of the gas forces the oil to the surface, and a "flowing well" exists. When the oil becomes lowered to the place of the perforation, gas escapes till the pressure is relieved. Then, if any oil remains, it may be pumped. Lastly, the water may be pumped. If the auger enters the cavity below the surface of the water, the reaction of the gas forces first water to the mouth of the well; then when the bottom of the oil is lowered to the orifice, oil is forced out till its surface subsides to the orifice, when, finally, the gas escapes. No oil now remains in the cavity.

In California an oil-producing shale extends through the Eocene (Tertiary) of the Coast Ranges; but south of San Francisco these strata mostly stand on edge, and most of the fluid oil has escaped, leaving large quantities of tarry asphaltum, which hardens on exposure to the air. North of San Francisco, however, these shales are horizontal, and oil has accumulated in considerable quantities. But the chief supply of petroleum in California is found in the less disturbed regions south of San Francisco, chiefly in Los Angeles and Ventura counties. The total product of the state in 1884 was 262,000 barrels.

In foreign countries, the most productive territory is the Baku region in Russia, near where the Caucasus abuts against the Caspian. Here is an area of 14,000 square miles which is producing, under treatment assimilated to that employed in America, quantities which promise to interfere seriously with the export of American oil. Six hundred wells have been bored, and one spouting well is represented to have produced 50,000 barrels a day. The most copious Pennsylvania well flowed 9,000 barrels a day, and the most productive Canadian well, 7,500 barrels.