

deep circular basin. By some it is supposed to owe its presence to the action of a mud volcano, and the crater-like aspect of the lake itself supports this view. By others the opinion is expressed that it occupies the denuded crest of the La Brea anticline at this point and that the crude petroleum has gradually flowed into the denuded area, from the surrounding strata of oil-bearing sandstone, the volatile matter has been oxydized, and the remaining asphalt now forms the lake. In the one case the denudation is supposed to be caused by the agency of a gas explosion as with ordinary mud volcanoes, in the other case it would probably be caused by atmospheric agencies since it cannot be supposed that glacial action was ever experienced in these southern islands. The origin of the pitch or asphalt is without doubt due to the oxydation of the crude petroleum which flowed into the present depression from the surrounding rocks.

It was long supposed that the level of the lake was constant, but when mining began on a large scale a careful series of levels and other measurements was commenced. In this way it was ascertained that in the 14 years during which mining has been vigorously carried on the level of the surface has been lowered seven feet, or at the rate of six inches per year. In this period it is estimated that about 1,500,000 tons of the asphalt has been extracted and shipped.

The surface is hard, and the asphalt is mined with an ordinary pickaxe, the mineral breaking out readily with a sharp line of fracture. It is loaded into tram cars and either sent to the shipping point by a line of cable tram to the pier, or hauled along a second tram line by mules to the shipping point or to the boiling works where it is purified by the removal of the contained water and of a certain amount of both organic and inorganic impurity. The digging is made to a depth of one to two feet, when the tram line is moved along the surface, but in a few weeks the depression thus made is filled and the surface is again level. There appears to be a certain slow movement going on which affects the greater part of the mass, and lines of flowage are seen in the apparently solid mineral as if the whole mass were in motion from the surface downward. This movement is apparently due to convection currents, which may be caused by the displacement of the whole mass through mining or possibly to the still further and continued inflow of semi-liquid pitch from the sides or bottom of the lake basin.

From the original lake basin immense quantities of the asphalt have been discharged seaward to the shore where along the beach it now extends for more than a mile. This beach asphalt contains a somewhat larger percentage of impurity than