

(3) Mixed and are, generally, rich in semi-solid materials. **Origin of petroleum** : According to *modern theory*, petroleum is derived from the partial decomposition of marine animals and vegetable organisms of pre-historic forests. Changes in earth (like volcano's, etc.) had buried these materials underground, where they have been subjected to intense pressure and heat, during the ages of time. The conversion of these materials into various hydrocarbons has been going on either under the influence of radioactive substances (like uranium) or by the bacterial decomposition under anaerobic and strongly reducing conditions and temperature under high-pressure.

**Mining of petroleum** done by *drilling holes* in the earth's crust and sinking pipes upto the oil-bearing porous rocks. Oil, usually, gushes out itself due to hydrostatic pressure of natural gas. Alternatively, it may be mechanically pumped up by using either *lift pump* or *air-lift pump*. The latter consists of two co-axial pipes,

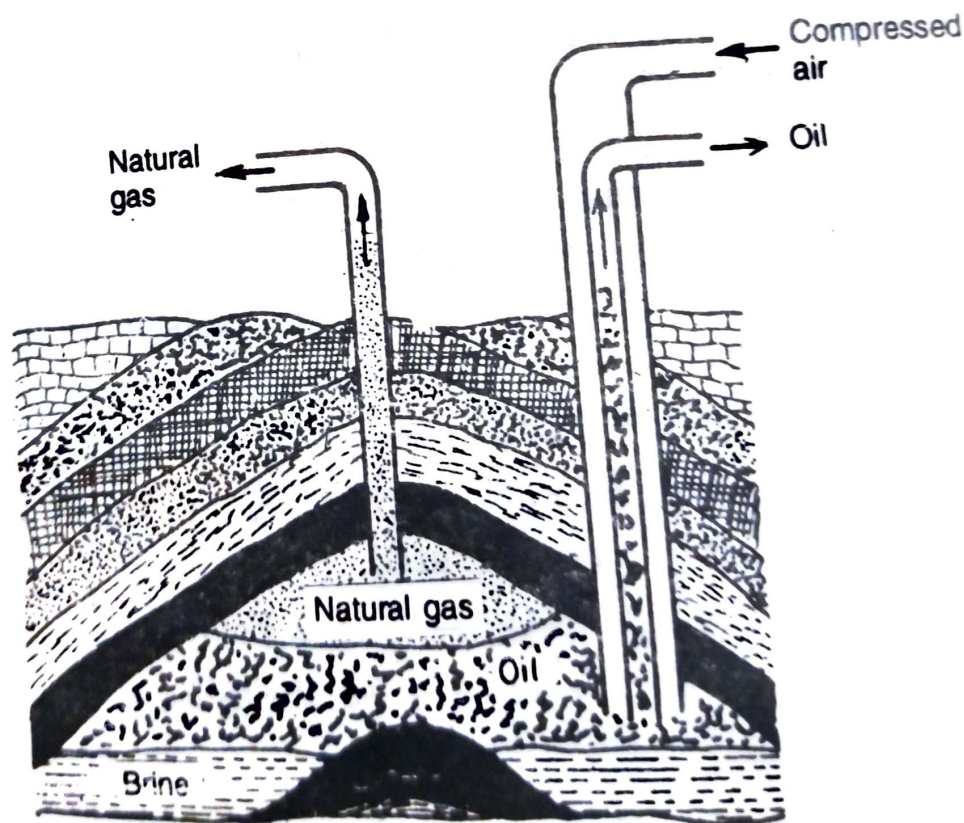


Fig. 6. Mining of crude oil and use of air-lift pump.

lowered into the base of oil bed. *Compressed air* is forced through the outer pipe whereby oil comes out through the inner pipe (see Fig. 6). The oil is conveyed to refinery by a system of pipelines.