evolved, a dense vapour exhales, and at length flames break forth, and the stack is consumed. When the process is interrupted, and combustion prevented, the hay is found to have acquired a dark-brown colour, a glazed or oily surface, and a bituminous odour. Were vegetable substances, under the circumstances here described, placed beneath great pressure, so as to confine the gaseous principles, bitumen, lignite, or coal, might be produced, according to the various modifications of the process. Mr. Parkinson thus traces vegetable matter through every stage of the saccharine, vinous, acetous, and bituminous fermentations; producing alcohol, ether, naphtha, petroleum, bitumen, amber, and even the diamond; and explains that by the process of bitumination, stems and branches have been converted into brown coal, lignite, jet, coal, and anthracite.

22. MINERAL OIL, NAPHTHA, AND PETROLEUM.—I proceed to examine some of those substances which result from changes effected in vegetable matter during its mineralization, and will first notice those bituminous fluids which are commonly known by the name of mineral oil. Springs or wells of this inflammable substance occur in England and many other countries, as Persia, Calabria, Sicily, America, &c., and generally in rocks associated with coal. *Naphtha* is nearly colourless, and transparent, burns with a blue flame, emits a powerful odour, and leaves no residuum. Genoa is lighted with