

Que., are referred to the last-named type. The replacement was effected by magnesia-bearing waters given off by a granite magma during its final stages of consolidation.

Molybdenite.—The molybdenite deposits of Canada were worked to some considerable extent during the war and in 1924 there was a slight revival of interest. A number of deposits are found in the Ottawa valley. Many of these have been examined by M. E. Wilson¹ and are classed as follows:—(a) aggregations of molybdenite, pyrite, pyrrhotite, fluorite, quartz in quartz syenite; (b) veins of molybdenite, pyrite, pyrrhotite and quartz in granite gneiss; (c) pegmatite dykes and feldspathic quartz veins; (d) contact metamorphic deposits. The deposit from which the greater part of the ore has been obtained is of the first class.

Nickel.—The question of the origin of the Sudbury nickel deposits continues to be a subject of investigation and controversy. Alfred Wandke and Robert Hoffman⁷, after summing up observed facts regarding these deposits, write as follows:—“To us it seems that these facts all indicate a deep-seated source for the ore solutions; perhaps the same magmatic reservoir which furnished the magma eruptive also furnished the ore. The peculiar gangue minerals indicate a high temperature type of deposit. We are forced, therefore, to conclude that the ores were derived from a deep-seated source and represent a high temperature type of ore deposit, associated with basic rather than with the usual acidic type of intrusive. The Sudbury ore deposits are then to be classed among the pneumatolytic deposits.” J. E. Spurr⁷ claims that the ores have originated through magmation, not directly from the norite or granite or any other rocks exposed, but from a deeper source, the same general source whence the norite, granite and other emanations were derived.

Petroleum.—Considerable geological field work has been done in recent years in Mackenzie River basin, with a view to determining conditions that may exist favourable to the occurrence and accumulation of petroleum. Reports by G. S. Hume¹, M. Y. Williams¹ and E. J. Whittaker¹ have been published. The oil possibilities of the Fraser River delta, B.C., were reported on by W. A. Johnston.¹ The conclusion is that there is little or no definite evidence that the rocks are oil-bearing, except possibly to some slight extent in the lower marine parts of the series, and that, although the general structure of the Tertiary rocks may not be unfavourable to the accumulation of oil, the internal structure is such that important reservoirs of oil or gas are not likely to occur. A summary of our knowledge of the oil-shales of Canada is given by S. C. Ells², who also describes the results of investigations of certain shales of Manitoba and Saskatchewan and their possibilities as a source of crude petroleum. A report by Ells² on the economic possibilities of the bituminous sand of northern Alberta has also been published.

Silver.—A valuable report by C. W. Knight³ on the Cobalt and South Lorrain silver mining districts appeared during 1924. It is supplementary to an earlier work by W. G. Miller, and contains a wealth of detail regarding the numerous mines of the districts, ready access to the mines and all available facilities for extensive investigation having been given by the operating companies. A description of the South Lorrain deposits is given in the Transactions of the American Institute of Mining and Metallurgical Engineers by J. Mackintosh Bell, who also describes in another paper⁷ a case of oxidation at depth and secondary enrichment in the Keeley mine, a very unusual phenomenon in a region that has been so intensely glaciated. J. E. Spurr⁶, as a result of a brief visit to Cobalt, during which he examined typical rich veins, states that these veins have all the characteristics of true intrusive vein-dykes.