

and gold are found in some of the copper-zinc deposits, as well as in vein deposits of the ordinary type; gold deposits are known both in the Keewatin and Timiskaming formations. Both gold and copper-zinc deposits appear to have been localized by structural factors. Molybdenite deposits are found only in two small areas in the eastern part of the region. They are formed apparently with the silicious end-product of the differentiation of biotite granite.

The sedimentary deposits of New Brunswick and Nova Scotia are described by W. J. Wright<sup>6</sup> and E. B. Papenfus.<sup>7</sup> Pyrite and chalcocite and their oxidation products occur as nodules and concretions or replacements of the cementing material of sandstone and conglomerates of Carboniferous age. The minerals are also found associated with and sometimes replacing plant remains that have turned to coal.

**Gold.**—Ira B. Joralemon, in the *Engineering and Mining World*, described the geology and recent developments at the Pioneer mine, Bridge River district, British Columbia. Augite diorite is intrusive at the contact of the Pennsylvania Bridge River series and upper Triassic Cadwallader series. Narrow but persistent gold quartz veins are found in the diorite and albitite. The development of the mine during the past few years has been very encouraging.

The gold, copper-nickel, and tin deposits of southeast Manitoba<sup>1</sup> are reported upon by J. F. Wright. In the Beresford-Rice Lake area, Precambrian sediments, volcanics, gabbro, diorite, granodiorite, granite, granite gneiss, pegmatite and diabase are found. Gold-bearing quartz veins, lenses and stringers occur along shear zones, irregularly scattered throughout the schistose and jointed volcanics. The Maskwa and Oiseau copper-nickel deposits lie in shear zones in vertical dipping andesite, pillow lava, and associated quartzose tuffs, close to the contacts of bodies of peridotite-gabbro and granite. The country rocks in the vicinity of Shatford and Bernic lakes, Oiseau area, consist of volcanics, peridotite, gabbro, granite, granodiorite and pegmatite. The known tin deposits are in the pegmatites characterized by abundant albite feldspar. Cassiterite occurs in small grains and crystals. No cassiterite-quartz veins have yet been located. Lithium-bearing pegmatites also occur in the area.

The geology of the San Antonio gold mine, Rice Lake area, Manitoba,<sup>7</sup> is outlined by J. A. Reid. Consequent on the granite intrusion, stresses fractured the greenstone, and schistified other rocks. The fracturing was accompanied or followed by mineralization solutions, emanating from the granite, which deposited quartz, gold, pyrite, rarely chalcopyrite and other minerals in the fissures.

The results of studies of a few areas in the vicinity of lake of the Woods and immediately north are presented by D. R. Derry<sup>3</sup>, G. G. Suffel,<sup>3</sup> L. Greer,<sup>3</sup> J. G. Cross,<sup>4</sup> and E. M. Burwash.<sup>3</sup>

Derry describes the geology of the area from Minaki to Sydney lake as composed of Precambrian volcanics, sediments, and intrusions of granite and associated rocks. Veins of the replacement type consisting of pyrrhotite with a small amount of pyrite and molybdenite occur in the sedimentary gneiss along the granite contact; veins of the replacement type consisting of pyrite with chalcopyrite occur in the volcanic and quartzite sediments. The latter type is thought to be more favourable for the occurrence of economic deposits.

Precambrian volcanics, schists and intrusive rocks of various types including granite and diabase are described by G. G. Suffel as occurring in the Bigstone Bay area, Lake of the Woods. Narrow, lenticular quartz veins lie at or near the contact