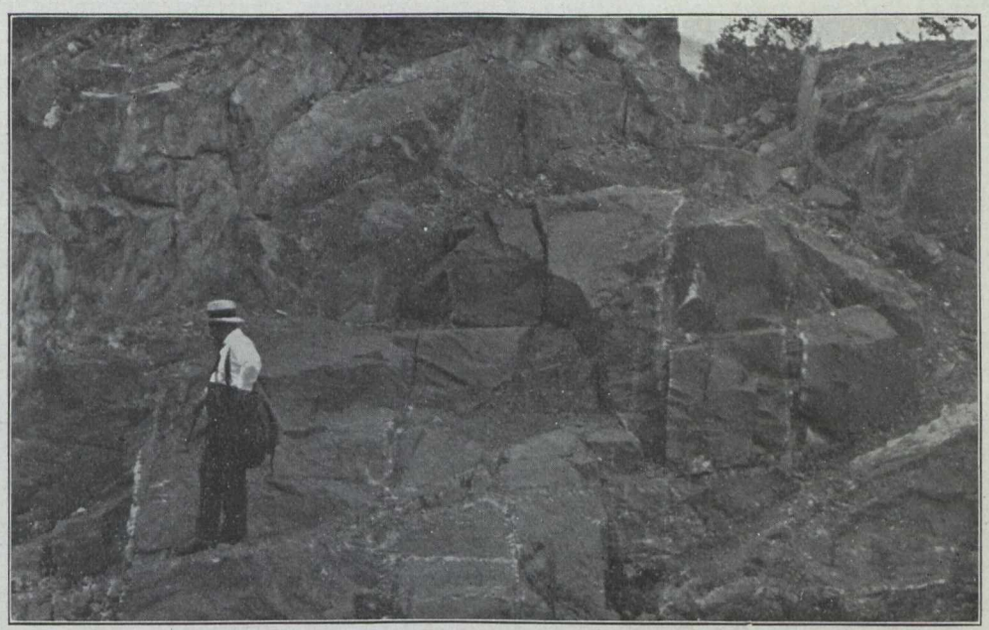
The principal types of igneous rocks are peridotite, pyroxenite, gabbro, and diabase. They are products of differentiation from a single magma, and are characteristically arranged in the order given above from the base upward in sills, and from the center outward in stocks. This order, it will be noted, is that of decreasing basicity and density. A relatively small amount of hornblende granite which is also present has generally been intruded a little later than the basic rocks.



Asbestos Veins in Peridotite, Black Lake, Quebec

Peridotite is altered in important amount to serpentine, and pyroxenite generally to soapstone, but in places probably also to serpentine.

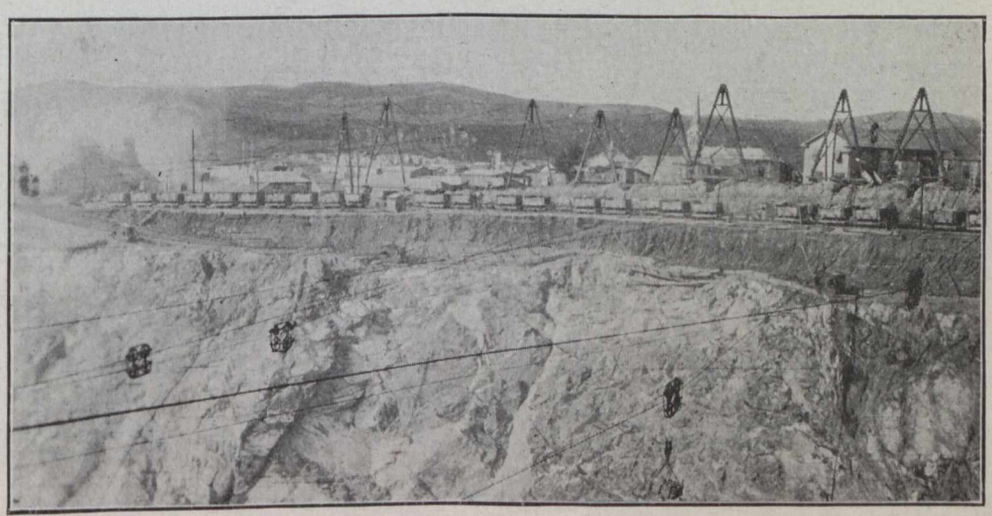
Character and Mode of Occurrence of Asbestos.

The asbestos is entirely of the chrysotile variety, and has essentially the same chemical composition as serpentine, in which rock only it occurs. There are two types of asbestos in this district: namely, "cross-fiber" asbestos, and "slip," "parallel," or "mass fiber," asbestos, the three terms being used almost interchangeably.

Cross-fiber Deposits.—This variety furnishes the major production, both in quantity and value. It occurs in veins up to 2½ in., or rarely 3 in. wide; the greater number are ½ in. or less in width. The fibers, as the name implies, lie crosswise the vein.

The veins rarely reach a length of 200 ft., but are usually very much shorter, the greater number being only a few feet in length. They run in all directions through the rock, in places cutting one another abruptly, but more frequently uniting at meeting. A careful examination shows that many of the larger and more persistent veins show an approach to a rectangular arrangement, and probably represent joints in the primary rock. Others have a roughly parallel order and denote fractures due to regional compression, while many smaller veins truncate the corners of rectangular joint blocks in shell-like form.

Vein Structure and Origin.—The veins are usually divided into two parts by a thin seam of iron ore, generally magnetite, which is parallel to the sides and near the center of the vein. Bordering the veins on each side there is invariably a band of serpentine about three times the width of the vein. The country rock near the veins is peridotite of the most basic phase (dunite) that occurs in the district. There is incipient serpentinization in all parts of the peridotite, but commercial asbestos is found only between walls of com-



An Asbestos Mine in Quebec