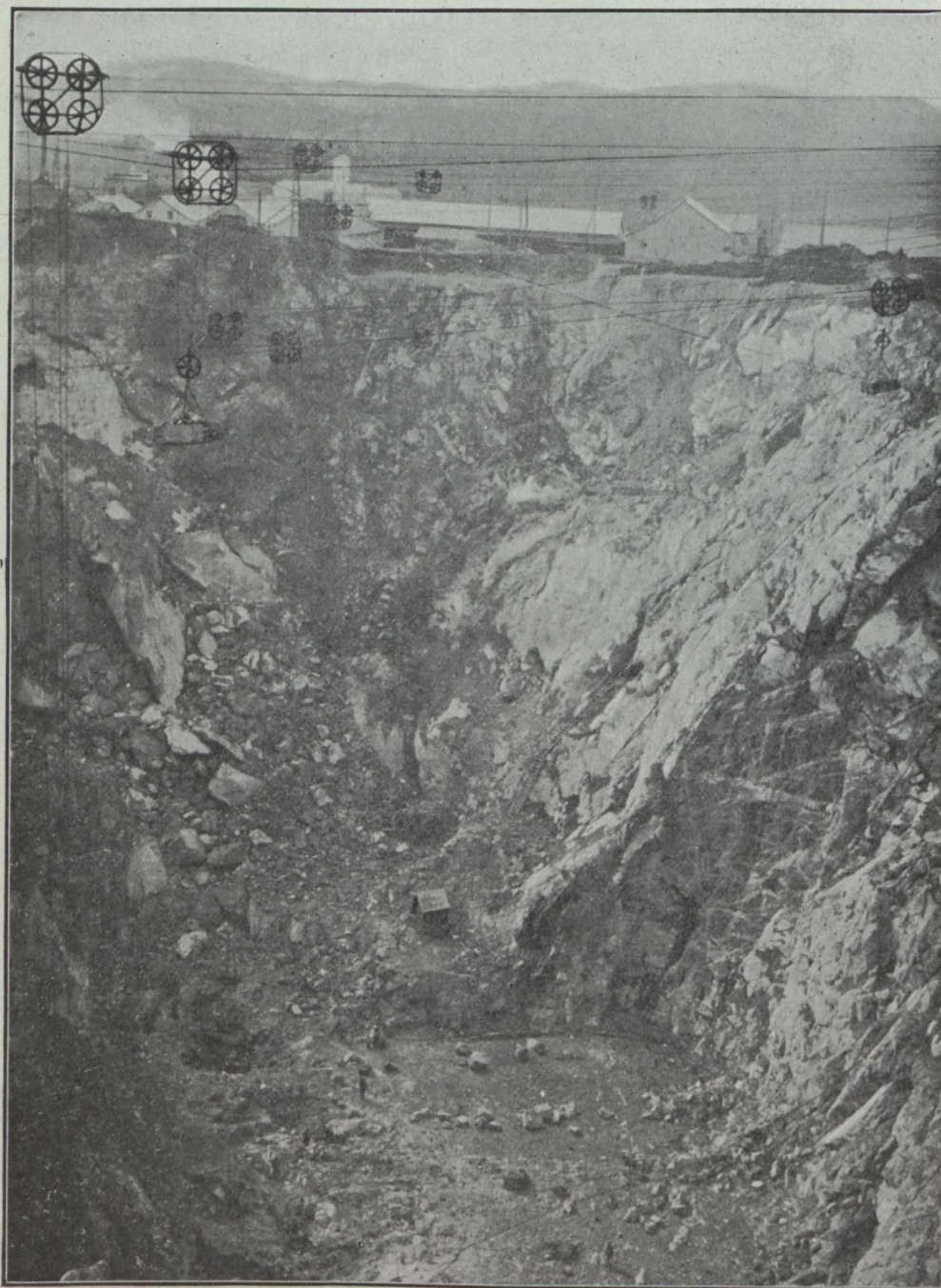


pletely serpentinized rock whose thickness is proportional to the width of the vein. Microscopic and chemical evidences, as well as the distribution of the veins, point conclusively to the origin of the asbestos by alteration and recrystallization of the country rock *in situ*. Microscopically it is evident that the asbestos fibers have grown outward on each side from the seam of iron ore mentioned above; chemically there is no distinction between the asbestos and serpentine, while an essential difference between serpentine and peridotite

of iron ore within or at the sides of the veins, and the correspondence of the position of the principal veins to that of joint and other fractures, the iron seams are believed to mark the original channels by which circulating waters have been introduced which produced the hydration of the peridotite and its alteration to serpentine, a certain portion of which has crystallized as asbestos.

The source of the water has given rise to considerable discussion. The fact that much excellent asbestos



Mining Asbestos in Quebec

is that the former contains 12 to 14 per cent. of water. The position of the veins and the deep-seated character of the rock make it impossible that such open fissures ever existed where the veins are now found. While much remains to be explained both as to the processes and their causes, the facts are self-evident that zones of the country rock have been altered to serpentine and proportionate parts of these have taken the form of asbestos veins. From the persistence of the seams

has been found near granite dikes has given rise to the opinion that magmatic waters accompanying the intrusion of these has been the cause. Locally there is much to support this view, but viewed broadly the small amount of granite as well as its variable distribution make it improbable that it has been the chief cause. Magmatic waters accompanying the peridotite itself are a more likely cause. Yet, this rock was solidified and was afterward fractured both by con-