what limited when this character is confined, as it is in the case of chrysotile veins, with a strict parallelism of the fibers; and it may should be still more limited when it is found that the attitude of these fibers is always transverse to their bounding walls.

Both the parallelism of the fibers and their transverse attitude are structural features which are indicative of an expansive, rather than a compressive, strain. At first sight it might seem that the existence of such a strain would be impossible or unlikely, in view of the fact that serpentinization is attended by an increase in the volume of the rock affected, which might be expected to result in compression. According to the views advanced here, however, the peridotite batholith was a cooling mass at the time it was undergoing alteration to serpentine, and it seems not impossible that the total amount of contraction due to cooling may have been so great, or perhaps its rate may have been so rapid, that, in spite of the expansion involved in the local serpentinization, there was a tendency for the joint planes and other fissures to open, and as a consequence the material adjacent to them was subjected to an expansive strain, normal to the walls.

The full force of such a strain would necessarily be exerted at the fractures, because they were planes of weakness; and it would affect only the completely serpentinized film, or layer, of rock parallel to these fractures, since, as indicated by its structure, the rock beyond remained essentially a solid mass until its complete metamorphism was effected.

Stated briefly, the writer's conclusions regarding the mode of origin of the chrysotile veins are as follows:

Siliceous magmatic waters, rising along fissures in the cooling and contracting peridotite, have soaked into the rock on either side and brought about its serpentinization. Complete alteration under these conditions was first reached in the layer of rock immediately bordering the fissure, while beyond this the degree of serpentinization decreased more or less gradually outward to the unaffected peridotite. Owing to the tendency for the fissures to open, this bordering layer of serpentine was not subjected to a uniform pressure from all directions, and the growing crystals were able to develop only in the direction of least pressure, nor-