

increase in its porosity, and these latter features in turn promote the serpentinization. Thus, in the final stages, where the rock has been completely serpentinized, its porosity must be at a maximum, or, in other words, it must be completely saturated with the solutions which effect the serpentinization, and its original structure is lost.

This result is naturally first attained in the zone or film bordering the fissure, which is then composed entirely of fibers, possibly still microscopic in length, of serpentine. The chrysotile of the zone is believed to be the result of the parallel position and transverse attitude assumed, at the very outset, by these very minute fibers, and of their subsequent growth in one direction only, *i. e.*, outward from the fissure, as successive new zones of rock become completely serpentinized; and the ultimate length of the fibers was limited only by the width attained by this completely serpentinized zone.

In the present state of our knowledge concerning the causes which determine or influence the habit of crystals, it may, perhaps, seem idle to discuss possible reasons for the extremely acicular character of the crystals or fibers. It might be said that this is the common habit of "crystals" of serpentine, just as, for instance, it is the common habit of crystals of mesolite; and it is certain that such a habit may be determined by one or more of several factors, such as the temperature and concentration of the crystallizing liquid or solution, and also by pressure. A crystal growing under ideal conditions, *i. e.*, surrounded on all sides by solution of equal concentration and under the same pressure from all directions, may (except in the case of cubic substances) develop a prismatic habit, more or less pronounced, which is entirely the result of the intermolecular forces set up during crystallization; on the other hand, a growing crystal which is not so surrounded, will have its habit controlled in very large measure by external causes. Generally speaking, it may be said that the crystal will grow only in those directions in which it is in contact with a supply of supersaturated solution, and if only the extremity, or both extremities, of the crystal, are so supplied, there will result an acicular or asbestiform habit.