

Serpentine.²⁰⁷—Under this name are included rocks which, whatever may have been their original character and composition, now consist mainly or wholly of serpentine. As already stated, olivine readily passes into the condition of serpentine, while the other minerals may remain nearly unaffected, as is admirably seen in some pikrites. Most serpentine-rocks originally consisted principally of olivine (see Fig. 33). Diorite, gabbro, and other rocks, consisting largely of magnesian silicates, likewise pass into serpentine. If varieties due to different phases of alteration were judged worthy of separate designation, each member of the peridotites might of course have a conceivable or actual representative among the serpentines. But without attempt-



Fig. 33.—Stages in the alteration of Olivine. A, the nearly fresh crystal; B, the alteration half completed; C, the crystal wholly serpentinized.

ing this minuteness of classification, we may with advantage treat by itself, as deserving special notice, the massive form of the mineral serpentine from whatsoever rock it may have originated.

Massive serpentine is a compact or finely granular, faintly glimmering, or dull rock, easily cut or scratched, having a prevailing dirty-green color, sometimes variously streaked or flecked with brown, yellow, or red. It frequently contains other minerals besides serpentine. One of its commonest accompaniments is chrysotile or fibrous serpentine, which in veinings of a silky lustre often ramifies through the rock in all directions. Other common inclosures are

²⁰⁷ See Tschermak, Sitz. Akad. Wien, lvi. July, 1867; it was this author who first showed the derivation of serpentine from original olivine rocks; Bonney, Q. J. Geol. Soc. xxxiii. p. 884, xxxiv. p. 769; Geol. Mag. (2) vi. p. 362; (3) i. p. 406; Michel-Lévy, Bull. Soc. Géol. France, vi. 3d ser. p. 156; Sterry Hunt, Trans. Roy. Soc. Canada, i. (1883); Dathe, Neues Jahrb. 1876, pp. 236, 337, where Garnet-serpentine and Bronzite-serpentine are described from the Saxon granulite region. J. S. Diller, Bull. U. S. Geol. Surv. No. 38 (1887); M. E. Wadsworth, "Lithological Studies" (1884), p. 118.