

It is now generally agreed that gneisses and many forms of schist have been formed by dynamical action from deep-seated masses of igneous rocks, both acid and basic. The banding of these rocks, which was formerly regarded as evidence of aqueous deposition, is no doubt generally due to an original segregation of the component minerals of still unconsolidated igneous rocks, like the segregation-veins described on p. 963, though it may to some extent have resulted from the rearrangement and recrystallization of the materials of such rocks under intense mechanical strain. The occurrence of lenticular bands or bosses of amphibolite in gneiss may point to dikes of some hornblendic rock by which the original granite was traversed before the development of the foliated structure. A similar connection can be traced between masses of diorite, gabbro, etc., and hornblende-schists, gabbro-schists, etc. The granitoid character of these rocks, under the great stresses they have suffered during periods of terrestrial disturbance, has here and there entirely disappeared. First the minerals (especially the feldspars) are seen to have ranged themselves with their long axis in one general direction. Then they separate into layers or folia in the same direction, and acquire a more or less distinctly foliated structure. Thus, a massive diorite, gabbro, or diabase has been converted into amphibolite-schist, sometimes with bands of massive labradorite.⁹⁸

⁹⁸ The idea suggested many years ago by Jukes ("Student's Manual of Geology"), that the hornblendic bands of the crystalline schists might have been originally eruptive rocks, has been confirmed by more recent work. See Lehmann's "Entstehung der altkrystallinen Schiefergesteine"; Allport, Q. J. Geol. Soc. xxxii. 1876, p. 425; the diorites of the north of Scotland, ante, p. 1040, and paper by G. H. Williams, cited on p. 1024.

Besides the works already cited on Metamorphism the student may consult the following: Delesse, *Mem. Savans Étrangers*, xvii. Paris, 1862, pp. 127-222; *Ann. des Mines*. xii. 1857; xiii. 1858; "Études sur le Métamorphisme des Roches," Paris, 1869; Durocher, "Études sur le Métamorphisme des Roches,"