

sea.²⁰⁹ Among the limestone and crystalline schists of Banffshire (p. 316), serpentine occurs in thick lenticular beds which possess a schistose crumpled structure and agree in dip with the surrounding rocks. They may have been deposits of contemporaneous origin with the limestones and schists among which they occur, and in association with which they have undergone the characteristic schistose puckering and crumpling. Sometimes they suggest a source from the alteration of highly basic volcanic tuffs. In other cases they may have been erupted peridotites which have acquired a schistose character from the same process of mechanical deformation that has played so large a part in producing the foliation of the crystalline schists.

III. SCHISTOSE (METAMORPHIC)

In this section is comprised a series of rocks which present a remarkable system of divisional planes that are not original but have been superinduced upon them. At the one end stand rocks which are unmistakably of sedimentary origin, for their original bedding can often be distinctly seen, and they also contain organic remains similar to those found in ordinary unaltered sedimentary strata. At the other end come coarsely crystalline masses, which in many respects resemble granite, and the original character of which is not obvious. An apparently unbroken gradation can be traced between these extremes, and the whole series has been termed "metamorphic" from the changed form in which its members are believed now to appear. In the earlier stages the change has taken the form of cleavage as in ordinary slate. Even in slate, however, as already remarked (p. 236), a beginning may be detected in the development of crystalline particles, and the crystalline re-arrangement may be traced in constantly advancing

²⁰⁹ According to Berthier, one of the glauconitic deposits in a Tertiary limestone is a true serpentine. See Sterry Hunt, "Chem. Essays," p. 303.