

posed is wholly satisfactory, one which shall do least violence, at once to geological and mineralogical relationships, is to be preferred. The arrangement which has met with the most general acceptance is threefold. 1st, *Sedimentary Rocks*, including first the rocks which have resulted from the accumulation of detritus, either inorganic or organic, under water or on land, and secondly those which have been deposited from aqueous solution. The former are mechanical, the latter chemical accumulations; but they have often been deposited together. Certain rocks of mechanical origin, such as detrital limestones, may by subsequent alteration be converted into materials that cannot be distinguished from others of true chemical origin. Hence the whole series is intimately linked together. 2d, *Massive, Eruptive, or Intrusive Rocks*, embracing all those which have solidified from fusion within the earth's crust, or have been erupted as lava to the surface. 3d, *Schistose Rocks*, and their accompaniments, including the so-called *Metamorphic rocks* which have reached their present condition as a consequence of the alteration sometimes of sedimentary, sometimes of igneous rocks. This group graduates into the two others, but it contains some distinctive masses, the origin of which is still involved in doubt.

It must be kept in view that in this proposed system of classification, and in the following detailed description of rocks, many questions regarding the origin and decomposition of these mineral masses must necessarily be alluded to. The student, however, will find these questions discussed in later pages, and will probably recognize a distinct advantage in this unavoidable preliminary reference to them in connection with the rocks by which they are suggested.