side. In such places sericite, biotite, chlorite, or some other secondary product with its cleavage planes ranged in one common direction, shows the line of movement and the reality of the chemical recombinations. In the body of a mass of rock, also, subject to great strain, relief has been obtained by crushing along certain planes, with a consequent greater development of the secondary minerals along these planes, and the production of a banded or schistose structure in a rock that may have been originally quite homogeneous.[45]

The recognition of the powerful part taken by mechanical deformation in producing the characteristic structures of many schistose rocks has not unnaturally led to some exaggeration on the part of geologists, who were thus provided with what appeared to be a solution of difficulties which at one time seemed insuperable. There can hardly be any doubt that the theory of mechanical deformation has been too freely used and has been applied to structures to which it cannot properly be assigned. Among the coarser gneisses, for example, the segregation of the component minerals in more or less parallel lenticular bands is a structure that seems to find its nearest analogy rather among the segregation-veins of eruptive bosses and sheets than among sheared, cleaved, and foliated rocks, such as undoubtedly have been the originals of many schists. There is nothing to show that this parallel banding is not an arrangement of the materials of an igneous magma before final consolidation.

But while this tendency to a too liberal use of dynamical causes in explication of all the structures of the crystalline schists must be admitted, we are now furnished with ample evidence of the efficacy of mechanical movements in the

[45] G. H. Williams, Bull. U. S. Geol. Surv. No. 62, 1890, pp. 202–207.