## HISTORICAL SKETCH-LAKE SUPERIOR REGION. 115

conglomerates, so well described by Lawson, grade more or less rapidly on the one hand into the schists, and on the other into the solid gneissoid granite. The complete change may occur within a short distance, or it may take a mile or more.

The Basement Complex is then composed of intricately interlocking areas of granitoid rocks and schistose rocks. Moreover, all of these rocks are completely crystalline. None of them show any unuistakable evidence of having been derived from sedimentaries, but many can be traced with gradations into massive rocks, and therefore the greater proportion of them are igneous, if a completely massive granular structure be proof of such an origin.

The Basement Complex is the most widespread of any of the Lake Superior systems, and it doubtless runs under all later formations to a greater or lesser distance. That it is continuous under all such formations can not be asserted, for while it was once so, it is possible, perhaps even probable, that in places, as a consequence of sedimentation and folding, the Basement Complex has been so deeply buried, that fusion has locally resulted. It is even possible that such fused material is a partial source of the later volcanic eruptions.

Before the earliest sedimentary rocks were deposited, the Basement Complex was subjected to enormous orographic forces, which folded and sheared the rocks in a most intricate manner. Accompanying the great orographic movements, which undoubtedly occupied a vast period of time, were intrusions of various deep seated igneous rocks, and also doubtless their volcanic equivalents were extruded. Subsequent to, and during the orographic movements, atmospheric forces were at work. Erosion continued long after the mountain-making folding had ceased, and, for much of the Lake Superior region, reduced the Basement Complex nearly to a plain or base level. As evidence of this may be cited the fact that, at the end of the erosion interval, the Basement Complex, consisting of differing lithological materials, and therefore having a variable resisting power, did not vary in altic the more than a few hundred feet for long dis-