The Keweenawan is the thickest of the series about Lake Superior, its maximum being estimated by Irving at the Montreal river to be fifty thousand feet. From this thickness it varies to nothing. This vast quantity of material does not, however, of necessity mark a period longer or perhaps even as long as the Lower Huronian or Upper Huronian, for the greater part of it is of igneous origin. The lava flows in their extent and thickness are to be compared with the great volcanic plateaux of the far West, rather than with local volcanoes such as Vesuvius, or the local volcanoes of the Upper Huronian and Lower Huronian. Associated with the lavas no volcanic fragmental material has been as yet discovered.

The source of the lavas of the Keweenawan is beyond the scope of this paper. It was, however, suggested that the fusion of a portion of the Basement Complex, and even Lower Huronian, may have in part produced the deep-seated magmas, the extrusion of which produced the Keweenawan lavas.

In large measure the sandstones and conglomerates derived their materials from the volcanics of the series, but a lesser quantity came from earlier series. This latter is particularly true of the great detrital formation constituting the topmost member of the Keweenawan. Partly because fragments derived from the felsites and porphyries are more resistant than those from the basic rocks, acid pebbles are relatively abundant in the conglomerates.

The fact that erosion was contemporaneous with eruption for much of Keweenawan time is to be noted. Certainly, when the period was well inaugurated, most of the Lake Superior basin was normally below the sea or near tide water. Many of the eruptions may have been sub-aqueous. Here and there volcanic masses of such magnitude were built up as to rise above the water, and upon such areas, the sea at the base, and the air and rain above, immediately began their course of destruction. The acid and more viscous lavas may have formed the more prominent elevations, and thus the attack was here more vigorous. This may partly explain the predominance of the acid pebbles in the conglomerates.