

of unconformity as that represented by a basal conglomerate. Deposition was continuous throughout Lévis time, as shown by the fossils, but the conditions governing the character of the sediments deposited were varied.

CLIFF BRECCIAS.

It is possible that certain intraformational glomerates whose phenoclasts are angular and not rounded are largely made up of cliff breccias. Certain of the unevenly graded glomerates as mentioned above may have had their larger and angular material derived from ridges or domes raised above sea level, as postulated by Walcott.

TECTIBRECCIAS.

For a full discussion of intraformational folds and breccias of tectonic origin the reader is referred to W. J. Miller's paper: "Notes on the Intraformational Contorted Strata at Trenton Falls." The writer's visit to this interesting locality convinced him of two important facts. Firstly, that the "contortions" and breccias had taken place most characteristically in zones where deposition of sediments had been varied and alternating. Secondly, breaking down of the folds was, locally, very pronounced; extreme overthrusts of the hardened or purer limestone layers resulting in the formation of edgewise breccias contained in a greatly crushed and squeezed but structureless mass of shale. It seemed obvious from a personal examination of this phenomenon, that the thin limestone bands must have been well indurated before they were brecciated, and that the interbedded, shaly limestones, because of their composition, took up the thrust in such a way as to show little or no contortions or folds, such as is shown in the stringers of brittle limestone contained within them. The general overthrust phenomena exhibited in the more massive beds of the Trenton formation and their association with the nearby Prospect fault, seem to point conclusively to the tectonic origin of the contortions and breccias. Intraformational breccias of this type are not to be confounded with Fault breccias or Crush conglomerates. They are to be expected in those portions of a formation which have undergone varied conditions of deposition and subsequent exogenic deformation. As intraformations they are interstratified with the formation in which they occur, and are never found in cross-cutting position. It is also interesting to note that the phenoclasts of such glomerates should be of a different composition and texture from the matrix.

ICE-FORMED GLOMERATES.

It is possible that icebergs and glaciers may have featured in the formation of intraformational glomerates. The shoving