the Zehnder Brick Co. in South Easton, the Nazareth Face Brick Co. near Georgetown, and the Saucon Valley Brick Co. near Bingen, seem to have accumulated in depressions in the preglacial surface. Descriptions of these deposits are given in the chapter on Economic Geology.

The size of the boulders varies greatly. In the Saucon Valley northwest of Hellertown there are numerous sub-angular Shawaigunk and Devonian boulders six to eight feet in diameter. Boulders with typical Oriskany fossils, especially Spirifer arenosus, are fairly common. The larger boulders generally bear abundant glacial strie and the cobbles and pebbles rarely do. The abundance of well-rounded stream-worn cobbles suggests that the ice sheet as it crossed the Delaware River valley must have picked up enormous quantities of alluvial material which it spread over Northampton County. Much black flint is present in the local Illinoian glacial deposits. This probably was derived from the Tomstown, Allentown and Beekmantown formations and was present in the surface limestone residual clay before the advent of the ice.

One of the interesting occurrences of the Illinoian is in the flat-bottomed valley at the head of the East Branch of Saucon Creek where the small settlement of Lower Saucon is located. It seems that the ice of Saucon Valley pushed eastward up the narrow portion of the valley to this more open part, carrying with it an abundance of cobbles of Silurian and Devonian age. One may wonder, however, whether these cobbles and pebbles have any connection with the high-lying gravels on the tops of the high hills south and east of Lower Saucon, described under Jerseyan glaciation. Also boulders of gneiss are conspicuous in the glacial deposits of Saucon Valley.

The region east of Seidersville presents the best example of Illinoian morainal topography in the county. Hills and sags (knobs and kettles) are well exhibited here. A few wells have shown glacial deposits about 40 feet deep. Of course, there may be places where they are thicker. It must be recognized that these enclosed depressions may possibly be limestone sinks, since the water is not held in them but sinks quickly into underground limestone caverns.

Barrell and Williams believed that the ice of this period as it encountered the end of South Mountain south of Bethlehem pushed up to the crest of the mountain approximately 900 feet above sea level. Barrell (1893. See Bibliography) reports finding "a Medina or Clinton boulder about one foot diameter" almost at the crest of the mountain southeast of Lehigh University campus. Another explanation is that the boulder was brought here by the earlier ice invasion.

The writer has never found any of the glacial till of the region that contains sufficient calcareous matter to produce visible effervescence