If it were its deposition would have disturbed the stratification of the underlying gravels and sands, and there would not be the great proportion of angular fragments in the burden, nor, further, would we in hundreds of cases find the till shading gradually and conformably into the overlying clay.

Inasmuch as the presence and level of "Lake Packer" was made dependent on drainage over a pass in the limestone lowland outside the Illinoian ice border on the divide between the Lehigh and Schuylkill Rivers, and not on a slightly lower pass at Leithsville, between the Lehigh and the Delaware, the present writer gave considerable attention to the features at each pass. The lowest place on the Lehigh-Schuylkill divide is north of Topton at an altitude between 480 and 500 feet. ** The pass at Leithsville, between Sancoon Valley and Durham Valley, is at 415 to 430 feet, ** or fully thirty feet lower than that near Topton. Williams suggested that the Leithsville pass had a higher altitude than that near Topton at the time the ice sheet was present and had later been cut down to its present level. He attributed the lowering to a concentration of drainage from bordering uplands, causing rapid cutting, whereas there was no such concentration of drainage from bordering uplands on the Lehigh-Schuylkill divide. The writer was unable to find evidence of a post-Illinoian lowering of the pass at Leithsville. At this pass the limestone floor has a thin deposit of cobbly clayey material indicating drainage across it of rather weak character. The pass is close to the Illinoian border and the deposit is probably an outwash from the ice sheet that occupied the Sancoon Valley. The sluggish drainage is perhaps due to the partial blocking of the lower end of Durham Valley by the ice sheet in the Delaware Valley. It is probable also that water discharging across this pass was merely that coming from the small ice lobe that occupied the north end of the Sancoon Valley. Its level may thus have had no relation to that of the drainage across the Lehigh-Schuylkill divide.

As to the disposal of water from the melting of the Illinoian ice lobe, two dissimilar modes of discharge have been considered. One is the escape of the water along the south edge of the ice sheet at the base of South Mountain between Bethlehem and the Delaware Valley. This may have been to a considerable degree submarginal rather than outside the ice edge, and similar escape may have been found along the Delaware from Easton to Riegelsville. The other mode of escape is by underground drainage through the limestone of the outlying district west of the moraine. Much of the present drainage goes through underground channels. Water from a moderate rate of melting of the ice may have been thus disposed of without causing ponding outside the ice border.

Some additional notes are offered to supplement Leverett's descriptions.

As one drives across the limestone valley of Northampton County he observes quantities of boulders collected from the fields and piled along the fences. In places these piles are very conspicuous but along the fences in other places there are very few. At one time the writer and his students attempted to differentiate between those places thickly covered with glacial debris and the sections where the glacial deposits are apparently practically absent. This plan was abandoned when it was found that careful search revealed their presence on all the uplands. On the slopes there is seldom any evidence of glacial material. In the slate area where the hillsides are steep and the divides narrow there are many areas where the deposits seem to have been completely removed by post-glacial erosion.

The thickest deposits, such as the one now being worked for clay by