Stratigraphic relations.—As stated above, the Allentown formation overlies the Tomstown and with apparent conformity, even though formations are missing which appear between these two in the south-central portion of the State. If there is an appreciable time gap here, it is hoped that evidence of the events of that time will eventually be obtained.

The Allentown strata pass beneath the Beekmantown and again there seems to be perfect conformity. This contact is nowhere well shown in Lehigh County. Along the Lehigh River there are several exposures near but not at the exact contact.

Although in general all the Paleozoic formations of the county appear as outcropping bands in order of decreasing age, there are several places where folds or faults have brought certain formations to the surface in other than the regular arrangement. The general dip of all the strata is to the northwest at varying angles but complex structures have resulted in varying dips and strikes. Overturning of folds in the Fullerton region has resulted in a preponderance of southeasterly dips.

LOCAL DETAILS

There are so many and such excellent natural and new exposures of the Allentown strata along the streams and railroads of the county and in quarries and road cuts that it is difficult to select certain ones for special mention. Seldom can all the characteristics described above be noted in a single locality and in a few places there may be no one of them present. In such cases there may be differences of opinion as to the formation mapping.

Hanover Township.—The best exposures of the Allentown formation in Hanover Township are along Monocacy Creek in West Bethlehem. The beds are well exposed in an old quarry between the Broad Street and Union Boulevard bridges. Several kinds of well-preserved Cryptozoa are present. Near the top of the quarry some Cryptozoa heads are 1 to 2 feet in diameter and near the floor some are 3 to 4 feet with the upper surface covered with pustule-like prominences (pl. 19-A).

The Allentown formation is exposed also on the east side of Lehigh River from Adam Island northward in East Allentown.

City of Allentown.—There are scores of exposures within the limits of the city of Allentown, particularly along the Jordan and Little Lehigh Creeks. With the exception of a small area of Tomstown near the sharp bend of the Lehigh River south of Jeter Island all the outcropping limestones in Allentown belong to the Allentown formation.

The best place to see these limestones is in the large Ziegenfuss quarry in the southwestern part of Allentown. This quarry has long been operated. At one time most of the stone was burned for lime but in recent years the product is crushed for concrete and highway use. The stone is hard and dense dolomite. There is great variation in the thickness of the beds but little distinctly shaly material. The rock has been considerably shattered in places by earth movements. Minor folds and faults are present and much calcite and quartz in veins. A rather extensive cavern was encountered at one time. The