Lehern and Freemansburg, Northampton County, during the scholastic year 1931-1932, he discovered some microscopic spherical siliceous forms of apparent organisms. Specimens were submitted to three of the outstanding specialists in the group of the foraminifera, all of whom agreed that the forms were organic but questioned whether they were foraminifera. Buie planned to continue his studies and eventually publish his discovery but his transfer to Harvard University interfered.

Later J. M. Hills in his more extensive microscopic investigations found many specimens of these same organisms in the Allentown limestone, sufficient to determine definitely their zoologic classification. He says:

These foraminifera are all of arenaceous types and are very simple in form. The majority have ovoid tests with simple apertures. Some, however, have tests which are nearly spherical, and many have necked apertures. A very few have as many as three or four chambers and a complex curved neck. The foraminifera occur most abundantly in the lower division of the Allentown but some are found at lower horizons. These fossils present a most interesting opportunity for further study in the residues, as they are probably the oldest representatives of their order yet found in this country.

Thickness.—As with the other Paleozoic formations of Lehigh County, the thickness of the Allentown formation is undetermined. No exposure of the entire thickness is known in the region and the absence of any key bed or any group of beds that can be identified in different exposures, as well as the complicated structures, explain the lack. Thicknesses of 800 to 1,000 feet have been measured in several localities where the entire formation was not exposed. Along a ravine near Hope, Northampton County, 1,300 feet of Allentown beds was measured and neither upper nor lower contacts present. The best estimate that can be made at the present time is that the maximum total thickness is 1,500 to 1,600 feet and perhaps a few hundred feet more. As is usual in shallow water deposits the thickness varies greatly in a short distance although concealed faults may be the explanation for these marked changes.

Name and correlation.—The Allentown limestone has been so named because of its extensive and typical development in and about Allentown, Pennsylvania. The name was suggested by Wherry in 1909. It seems to be the equivalent of the Conococheague formation in the Chambersburg region, although there are some essential lithologic differences. Although the author has used the name Conococheague in other places, he is now inclined to return to the local name until careful geologic investigations have been made in the intervening area.

E. O. Ulrich regards the Allentown as the base of his Ozarkian period and the Pennsylvania Geological Survey places it at the base of the Canadian period. The U. S. Geological Survey regards it as Upper Cambrian, which meets with the approval of the author.

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