GENERAL DESCRIPTION OF THE PALEOZOIC, MESOZOIC
AND CENOZOIC ROCKS

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The Paleozoic and later rocks of Lehigh County are readily separable from the Proterozoic or pre-Cambrian strata. With the exception of some intrusive basic rocks in the area of Triassic sediments, all are of sedimentary origin and have undergone relatively slight changes, other than cementation and solidification, since their deposition. Metamorphism has taken place to the extent that some of the shales have been converted into slates, some sandstones to quartzites, and some limestones to low-grade marbles, but these are all low-grade metamorphic rocks in comparison with the gneisses and schists of South Mountain and are generally regarded as non-metamorphic or non-crystalline rocks. Lithological features constitute the principal means for differentiating the formations, but structural relations and, in some cases, fossils can also be employed. Microscopic investigations are useful but of less significance than in the pre-Cambrian rocks.

Paleozoic Era

The Paleozoic rocks constitute the major part of the exposed strata of Lehigh County, extending almost uninterruptedly from South Mountain to the northern limits of the county. They are also present as the basement rocks in some of the intermontane valleys situated between ridges of the crystalline rocks in the southern part of the county. During the formation of the Paleozoic rocks an extensive shallow inland sea covered the entire region and extended northeast, northwest, and southwest for hundreds of miles. The land mass which furnished the sediments that now constitute the Cambrian strata lay to the southeast. At times the shore line apparently was not many miles away, but at other times the land mass, which has been called "Appalachia," probably was depressed so that the shore was distant perhaps 50 or more miles.

In age, the Paleozoic strata present in Lehigh County extend from the Lower Cambrian to the basal Silurian. Within this period of time there were some interruptions in deposition, but these were short in comparison with the time when water covered the area and deposition was taking place. The gaps in the sedimentary record were caused by uplifts, lack of deposition, and removal by erosion of certain portions of the previously formed deposits. It is not possible to determine in some cases whether the absence of some beds that are present in other parts of the Appalachian belt is the result of non-deposition or of deposition and subsequent removal before the next strata were deposited. Alternately the region has existed as land and as sea, or at certain periods as areas of construction and at other times of destruction. An enormous amount of erosion has taken place since Silurian time; many thousands of feet of rocks have been carried from southeastern Pennsylvania. It is therefore possible that a large part, or all, of the Silurian, Devonian, Mississippian, and Pennsylvanian formations now present in the regions beyond Kittatinny (Blue)