INTRODUCTION
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Lehigh County is in the eastern part of Pennsylvania. It is bordered on the north and east by Northampton County, on the southeast by Bucks County, on the southwest by Berks and Montgomery counties, and on the north and west by Schuylkill and Carbon counties. It lies between parallels 40°25' and 40°47' north latitude and meridians 75°20' and 75°53' west longitude, is irregular in shape, and has an area of 344 square miles. It includes portions of the following 15 quadrangles of the U. S. Geological Survey: Allentown, Allentown West, Mauch Chunk, Hamburg, Boyertown and Quakertown.

The county possesses much of historical, industrial, and geological interest. Geologically its record goes back more than a billion years; in terms of human history it embodies probably a thousand years. In neither case can the time be given in exact figures. The geological record includes so many great earth changes that many of the phases or periods must be interpreted from imperfect data. Similarly, the story of the earliest human inhabitants in the region is vague, owing to the fact that the Indians preserved no written records. Even the activities of the earliest white inhabitants, who entered the region a little more than 200 years ago, are poorly known. Both human and geological records become increasingly more fragmentary and more difficult to decipher the farther back we go. Nevertheless, enough data remain for the specially trained individuals to unravel much of the ancient records.

OUTLINE OF GEOLOGICAL HISTORY

It is an interesting speculation to consider the happenings of the past billion years as designed to prepare the region for Man. Whether such an egotistical point of view is accepted or not, it is nevertheless true that the present human inhabitants are utilizing, and, in some cases, wasting the products of Nature that have been in process of formation for many millions of years, long before the appearance of Man on the earth.

The oldest rocks occur on South Mountain and the other irregular hills that constitute such prominent topographic features in the southern part of the county. They tell of a time when hot molten rocks forced their way to or near the surface from deep-seated reservoirs of magmas with prevailing temperatures above the melting points of ordinary rocks. These molten masses cooled and solidified as they proceeded upward, forming granites and other types of igneous rocks. Later, and perhaps several times, these first crystalline rocks were themselves invaded by other ascending masses of molten rock. These successive invasions and subsequent earth compressive and uplifting movements have modified the ancient rocks of the region until they are so complex as to make the deciphering of their history extremely difficult. Progress has been made but many problems are unsolved.