dryers and brick-making machinery. The clay ranged in thickness from 3 to 35 feet although clay exceeding 10 feet was seldom found. Pinnacles of limestone that rise nearly to the surface were serious obstacles in the use of steam shovels, but nevertheless such shovels were successfully operated. The product was sand-faced red brick. This plant ceased operations in 1928 and was dismantled the following year.

The largest and most recently operated brick plant in the county was about 1 1/2 miles south of Allentown (pl. 33). It belonged to the Lehigh Brick Co. and was worked for several years. It was closed in 1937 and has been dismantled. The materials used were the residual and glacial clays that cover all the limestones of that section except along the streams. The clay, which varies in thickness from 6 to 20 feet, was removed from a considerable area. In places it was too sandy to use. Residual limestone masses and angular and rounded pebbles and glacial boulders up to 5 feet in diameter are abundant in places. The largest rocks were left in the pit, those several inches in diameter were loaded into the cars by the steam shovel and picked out by hand on the grizzlies, whereas the smaller pebbles were eliminated or crushed by the conical rolls.

The plant was well-equipped with a large stock house, belt conveyors, rotary dryer, centrifugal crusher, 8 round kilns with a capacity of 75,000 bricks each, and 2 long continuous kilns with 22 openings each.

The combined annual output of the brickyards in and near Allentown was large but variable. The bricks were used locally and shipped to places along the lines of the Lehigh Valley R. R. and Central Railroad of New Jersey, especially to Newark, N. J., and to Scranton and Wilkes-Barre, Pa.

The Emaus Brick Co. built a plant at the foot of South Mountain east of Emmaus in 1927 and operated it for several years. The clay used was the residual limestone clay of the region but with considerable glacial clay, sand boulders, and talus from the mountain nearby. The material, on the whole, was unfavorable and the plant has been abandoned.

Clays associated with the limonite iron ores

The descriptions of the limonite iron mines on preceding pages show the presence of abundant yellow, red, white, and black clays associated with the ores. These clays were washed away and carried to artificial settling basins. These deposits are commonly called "mud-dam deposits." At different times the suggestion was made to utilize this material for the manufacture of brick. The most extensive use of this material in the region was in a plant near Bingen, just across the county line in Northampton County. The clay was highly ferruginous and the brick made from this material were quite porous.

Prime says that at Kerschner's mine (107) "there is a good deal of yellow clay on the top, containing no ore, from which bricks are made." (Report D, p. 19)