field stones were used and no quarries opened. The stone has been
dressed for rubble construction.

There is little doubt but that high-grade building stone might be
got in various places in the gneiss hills of Lehigh County if the de-
mand and market prices should warrant the expenditure of the rather
large sum necessary for development and equipment.

At Seisholtzville, Berks County, less than two miles from the
Lehigh County line, a granite quarry has been operated for twenty
years. Some fine churches and office buildings in Allentown and
Bethlehem and other cities are built of this stone.

Glacial boulders.—A very limited use has been made of glacial and
river cobbles such as are common in the deposits of the Lehigh River
and in the glacial moraines and kames of the county. Ordinarily
these cobbles have been utilized only for lining gutters.

CLAY AND SHALE

Four different kinds of argillaceous materials have been used in
Lehigh County for the manufacture of brick and tile. These are the
residual limestone clays, the clays associated with the limonite iron
ores, white clays in the Hardyston formation, and the Martinsburg
shales.

Pottery and firebrick have been made but apparently mainly, if
not entirely, from clays brought from New Jersey or elsewhere. At
the present time no brick is being manufactured in Lehigh County.

Residual limestone clay

Throughout the limestone regions of Lehigh County there is a sur-
face cover of residual clay composed of insoluble material derived
from a great thickness of limestone which has been removed by solu-
tion. In portions of the area several thousand feet of limestone has
been carried away. The amount of insoluble matter in these cal-
careous sediments varies but an average of 10 percent may be assumed
as a fair figure. If all the residue still remained, we should have a
surficial clay deposit about 300 feet deep. However, this is not the
case. Seldom is the residual clay more than 20 feet deep, although
in places it exceeds 100 feet; probably there is an average depth of
only 5 to 10 feet. This means that most of the insoluble matter has
been carried to the streams by surface erosion and transported beyond
the confines of the county. Along the steeper valley slopes the lime-
estones generally are exposed and the clay cover is present only over
the flat divides.

The Illinoian Ice Sheet coming from the northeast extended through
the limestone valley to a point midway between Wescosville and Trex-
lertown, and there is some evidence that a still earlier ice invasion
may have gone still farther west. The ice removed much of the sur-
face clay, and mixed clays, sands, cobbles and boulders from the
regions to the northeast with that which remained. Therefore, the
surficial clays of the county are in part residual clays formed in situ