near the bottom of the coal measures and the clay bed ranges from 8 to 20 feet in thickness. It is divided into two varieties, designated as the hard and soft clay. The hard clay is of a gray color, shading almost to black; it is non-plastic, unless ground into an impalpable powder, and disintegrates but little upon exposure to the weather. The soft clay is very plastic, much lighter in color and crumbles rapidly under atmospheric influences. The impurities in this clay are fewer and smaller in amount than in most other fire clays. The two most valuable characteristics of this clay are its freedom from potash and the large proportion of silica to alumina.

The clay industry has grown rapidly in importance during recent years, and the value of the output during 1896 was $1,753,003.

THE SANDS.

The sand deposits of the state are widely extended both in the eastern and western sections, but have been but little developed hitherto. The sandy sediment which has been deposited upon the bottom of the Potomac river has been dredged in recent years and used extensively for building purposes in Washington.

The most important sand deposits in the eastern portion of the state are found in the Raritan formation in Anne Arundel county, and extensive openings have been made near the head of the Severn river, where a very pure grade of glass sand is taken out. The output of these diggings is transported on small schooners which are able at high tide to reach the head of the river.

The Tuscarora (Medina) and the Monterey (Oriskany) formations of the western portion of the state also afford very pure deposits of quartz which have been ground up and employed to some extent in glass-making.

The sandstones both in the eastern and western sections of the state are capable of much further development. The output from these formations during the year 1896 had a value of only $1,752.

THE PORCELAIN MATERIALS.

The state of Maryland is well provided with porcelain materials. The three principal requisites in the manufacture of porcelain are flint (vein quartz), feldspar, and china clay (kaolin).