

fragments should be of fairly uniform size. It is graded into a number of sizes, ranging from a quarter of an inch to an inch and a half in diameter.

**Sand-lime brick making.** Sand-lime brick is manufactured by pressing a mixture of sand and lime into shape under great force and then subjecting the brick to the action of steam under pressure for several hours. Both high calcium and magnesian limes are used, but the better results are obtained from the former. Argillaceous matter is inert under the conditions of this process, and its presence simply reduces the quantity of available calcium, or magnesium oxide, per ton of lime. Free silica acts as the silica of the sand to which the lime is added; thus it is of no advantage and reduces the percentage of the active agents in the lime. In general, the purer the lime the better it is.

**Button manufacturing.** Whiting is used as a polishing material for pearl buttons. It should be free from grit and very fine.

**Cement manufacturing.** In the manufacturing of cement large quantities of limestone are used. The cement companies usually supply themselves from their own quarries. The limestone should not contain over five per cent of magnesium carbonate. Ferric oxide should not be so high as to analyze over four per cent in the cement. Free silica is objectionable. In "Portland Cement",<sup>1</sup> by Richard K. Meade, M. S., he says: "In determining the suitability of a limestone to be used in the manufacture of cement, it is necessary to take into consideration the shale or clay which is to be used with it, as in every case it is the mixture of the two, made in proper proportions, which must have the right composition.....".

In the manufacture of slag cement slaked lime is mixed and ground with blast furnace slag. A high calcium lime is required.

**Calcium carbide manufacturing.** (Quantities of lime used included in table XI). On heating lime to a high temperature, in an electric furnace, in the presence of a definite quantity of coke, a chemical union takes place between the calcium of the

<sup>1</sup> Published by Williams and Norgate, London. See page 46.