Lime	56 per cent.
Carbonic acid	44 do.
	100

1. Although we have no limestones *absolutely* pure, yet I have known some of the alum limestone to contain but one-half per cent. of foreign matters. It may be, however, that a large quantity could not be obtained quite so pure, and it will be safer to assume 2 per cent. of impurities, leaving 98 per cent. of carbonate of lime. In burning into lime 44 per cent. of carbonic acid is driven off, leaving as the product of 100 pounds of limestone—

	54.88 pounds of pure lime,
and of impurities	2.00 do.
	56.88 do. of im pure lime.

100 pounds of such lime will, therefore, contain 3.2 or 3½ pounds of impurities.

2. A specimen from Pipe creek, Carroll county, differing much in appearance from the last, was analyzed by Dr. Piggot, my assistant in the laboratory, and contained—

Lime	53.40
Magnesia	1.13
Carbonic acid	43.17
Oxide of iron and soluble silica	1.90
Insoluble silica	.40

By deducting the carbonic acid driven off in the kiln, there will remain 53.40 pounds of lime and 3.43 pounds of impurities. 100 pounds of such lime will contain 6.05 pounds of foreign matters.

3. A specimen from Long Green, Baltimore county, analyzed by Professor Mayer for me, contained—

Lime	36.73
Magnesia	6.25
Iron pyrites and alumina	3.30
Insoluble residue, quartz, and talc	17.75
Carbonic acid	35.97

Deducting the carbonic acid as before, the product of lim will apparently be 64.03 pounds, but the impurities amount to 27.30 pounds, or very nearly 43 per cent!

4. Limestone from Howard county, near the Patuxent river—

Lime	35.27
Magnesia	1.76
Insoluble residue, (quartz and mica,)	25.17
Oxide and (sulphuret of iron or iron pyrites) alumina and soluble silica	8.39
Carbonic acid	29.41