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Some American Dolomites

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SOME AMERICAN DOLOMITES

BURLEIGH B. REED AND NICHOLAS KNIGHT

These rocks are among the important building materials of the country and have a wide distribution. We secured a few typical specimens from different sections, in order to make a comparison of their chemical composition. The specimens analyzed are all used as building stones in their respective localities.

1. This is a specimen from Mount Vernon, Iowa, and represents the Niagara formation, the oldest member of the Silurian age. It is of a yellowish gray color, due to the presence of iron. The substances which compose the rock are as follows:

	Per Cent
SiO ₂	1.29
Fe ₂ O ₃ and Al ₂ O ₃	0.57
CaCO ₃	55.17
MgCO ₃	43.04
Total	100.07

2. This is a specimen of dolomite from West Chester county, New York, not far from New York City. It is a white crystalline rock, resembling marble. The formation is a part of the Cambro-Silurian and is believed to be equivalent to the Stockbridge limestones of the Housatonic Valley in Massachusetts. It is quite a typical dolomite in composition, not materially different from the Iowa rock. The analysis is as follows:

	Per Cent
SiO ₂	2.71
Fe ₂ O ₃ and Al ₂ O ₃	1.05
CaCO ₃	53.43
MgCO ₃	42.93
Total	100.12

3. A specimen was obtained from Lockport, New York, also belonging to the Niagara Limestone. There was upon the dark-gray limestone an incrustation of milk-white crystals, and the composition of these also was determined. The analysis of the gray body of the rock resulted as follows:

	Per Cent
SiO ₂	2.76
Fe ₂ O ₃ and Al ₂ O ₃	1.42
CaCO ₃	51.85
MgCO ₃	43.94
Total	99.97

This contains a sufficiently high percentage of magnesium carbonate to class the rock as a fairly typical dolomite.

4. The white crystals encrusting the foregoing specimen:

	Per Cent
SiO ₂	0.18
Fe ₂ O ₃ and Al ₂ O ₃	1.21
CaCO ₃	81.62
MgCO ₃	17.15
Total	100.16

This varies quite widely from a true dolomite, as the calcium has quite largely replaced the magnesium. The amount of silica is unusually small which might possibly be expected from the crystalline structure of the material.

5. A specimen from Bertram, Iowa. The formation lies between Mount Vernon and Cedar Rapids. The rock is gray in color, with numerous light-colored crystals disseminated through the massive rock. Some analytical data had been found which seemed to indicate that the magnesian content of the rock was in excess of the calcium. Our analysis was made with a view to determine whether this were really the case. Two concordant results obtained are as follows:

	Per Cent
SiO ₂	0.90
Fe ₂ O ₃ and Al ₂ O ₃	0.90
CaCO ₃	55.61
MgCO ₃	42.58
Total	99.99

The figures indicate a rather typical dolomite, as one would naturally expect from similar formations in the neighborhood.

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