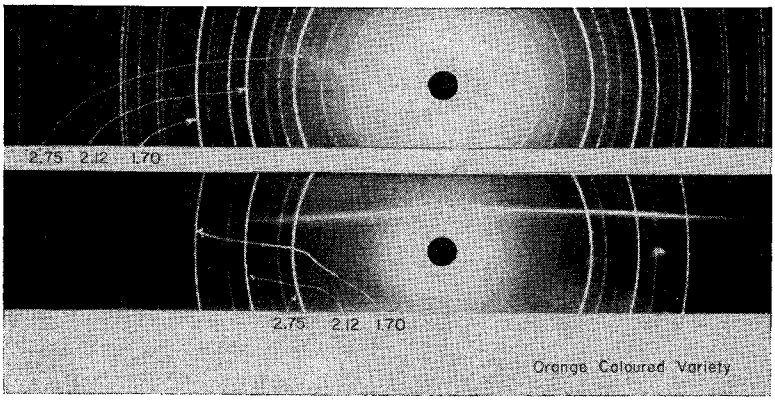

FIG. 2. Magnesite, x-ray powder photographs, half original size. Top—colourless variety, lower—orange coloured variety.

Crystallography

A selection of all varieties of the crystals was sent to Dr. R. B. Ferguson who kindly undertook a morphological study. His report accompanies this paper.

Acknowledgments

W. K. Coughlan and R. B. Hutt originally noticed and picked the mineral from the drill cuttings. The x-ray identifications were made by Dr. R. A. Rowland, Shell Development Company, Houston, Texas.

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THE MORPHOLOGY OF THE MAGNESITE CRYSTALS

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With the help of two graduate students, J. C. Davies and J. M. Patterson, the writer has carried out a morphological examination of the magnesite crystals submitted to us by Miss Rapson.

The two varieties, white and pink, are identical under the binocular microscope except for a red iron stain, which is presumably hematite, on and in the pink variety. Many crystals are partly stained and partly clear and colourless. The largest crystals are about 2 mm. long, and the average length of all the crystals is perhaps 1 mm. All the crystals have much the same habit, a simple one consisting of a hexagonal prism and basal pinacoid {0001}, although in shape the crystals vary from equidimensional to elongated (along [0001]) with a length-to-width ratio of up to about 6 to 1. On a few crystals we were able to detect tiny rhombohedral faces, but we were not able to measure these on the reflecting goniometer in order to determine their Miller indices. Such a measurement would also be necessary to determine the indices of the hexagonal prism, unless one carried out a single-crystal x-ray study which we did not do. From the description of magnesite in Volume 2 of the Seventh Edition of Dana's System of Mineralogy (1951) we presume the hexagonal prism is $\{11\bar{2}0\}$ and the rhombohedron $\{10\bar{1}1\}$. According to Dana's System, the combination of hexagonal prism and basal pinacoid is a rare habit for magnesite.

Many of the crystals are separate individuals, but many occur as parallel growths, complex clusters and perhaps twinned combinations. A typical single crystal is shown in Figure 1, and a sketch of a cluster of crystals in Figure 2.

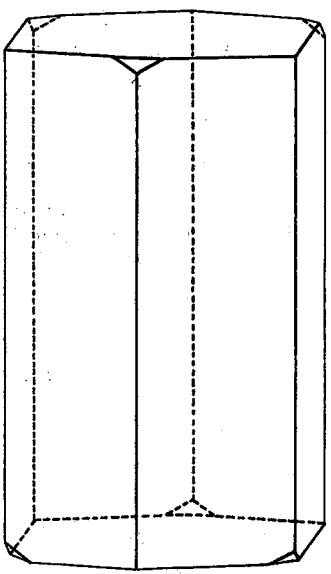

FIG. 1.
Magnesite, typical single crystal.

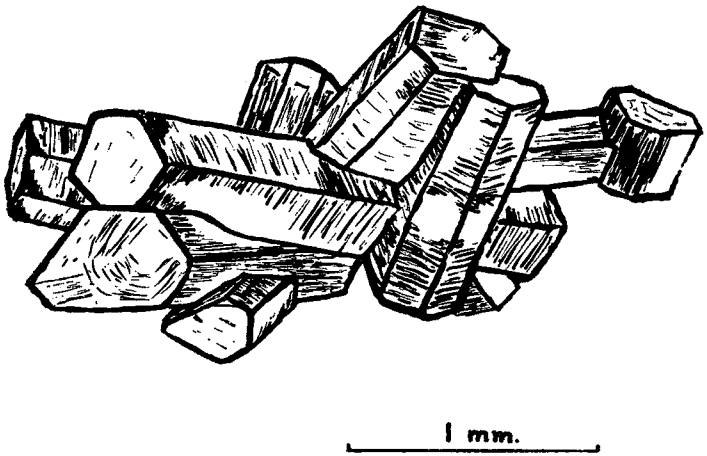

FIG. 2. Magnesite, crystal group.

OCCURRENCES OF EUCOLITE IN NORTHERN HUDSPETH COUNTY, TEXAS

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Eucolite, a rare sodium-zirconium silicate, was found in Miller Mountain and Pump Station Hills, about 12 miles apart, both in northern Hudspeth County, Texas. The areas are accessible from several dirt roads and both are on the west central edge of the U.S. Geological Survey Preliminary Oil and Gas Map 90, Hudspeth and Culberson Counties, Texas (King, 1949). This mineral is reported for the first time in Texas.

Miller Mountain Occurrence. The eucolite occurs in the Miller Mountain in irregular dikes along sheer zones associated with a laccolith, a conical mass of nepheline-syenite porphyry about 2.5 miles in diameter. The laccolith is one of a group of Tertiary alkalic intrusives that make up the Cornudas Mountains of Texas and New Mexico located at the eastern margin of the Sierra Diablo Plateau about fifty-two miles east of El Paso, Texas.

The eucolite-bearing dikes are peripheral apophyses which penetrate short distances into mildly contact-metamorphosed limestones and shales of Permian and Pennsylvanian (?) age. Most of the eucolite occurs in small subhedral to euhedral crystals about 0.5 to 3.5 mm. in diameter; it