tion, is 1.636. The specific gravity is 3.12. These values are close to those indicated by the graphs of Schaller (1942). There is a good cleavage parallel to the fibers. Indexed *x*-ray powder data for sussexite are given by Takéuchi (1957).

REFERENCES

POITEVIN, E. AND H. V. ELLSWORTH (1924) New optical data for analyzed sussexite. *Am. Mineral.* **9**, 188–190.

SCHALLER, W. (1942) Some relations of the magnesium borate minerals. *Am. Mineral.* **27**, 467–486.

TAKÉUCHI, Y. (1957) The interpretation of x-ray power diffraction patterns of the szaibelyite-susexite series. *Mineral. Jour. Japan,* **2**, 78–89.

THE AMERICAN MINERALOGIST, VOL. 50, MARCH–APRIL, 1965

CRYSTAL PARTICULARITIES IN DOLOMITE SYNTHESIS

R. VAN TASSEL, *Institut royal des Sciences naturelles de Belgique, Brussels, Belgium.*

During hydrothermal preparation of rhombohedral carbonates, by Dr. Jangg, Vienna, some particularities were noted on the obtained samples.

It was tried to synthetize dolomite along the same lines as the Walter-Lévy's method for calcite preparation. An equimolar solution of 50 ml 0.08 mol $KHCO_3$, 25 ml 0.04 mol $MgCl_2$ and 25 ml 0.04 mol $CaCl_2$, corresponding to 0.01 mol $CaMg(CO_3)_2$, was heated overnight, at 150° C., in an autoclave partially filled with water in order to compensate the inner pressure on the glass tube. The resulting powder did not show dolomite, but heterogeneous crystals, measuring 25–40 μ (Fig. 1), which gave with *x*-ray diffraction the reflections of calcite and magnesite. The large core (calcite) is surrounded with a rim, grown by epitaxis, of same optical orientation but of higher refraction (ω 1.693, magnesite).

On the other hand dolomite crystals of different habits were obtained according to the method of Medlin (1959) who adopted for dolomite the method of Jantzsch and Zemek (1949) worked out for magnesite. Two syntheses both in the presence of urea were made at $200 \pm 10°$ C. One run provided perfect rhombohedral crystals of 35–50 μ, with ω between 1.672 and 1.682, containing plenty of minute inclusions which prevented more precise index determination by immersion method. Another run yielded starshaped crystals of 70–140 μ, ω 1.679, of three dimensional development (Fig. 2). The branching aggregate is due to excessive growth along the rhombohedral edges. Extinction occurs simultaneously for the whole starshaped crystal and the optic axis points along the microscope axis when the crystal orientation clearly displays the starshape. The mineralogical nature of the synthetized dolomites is confirmed by *x*-ray dif-

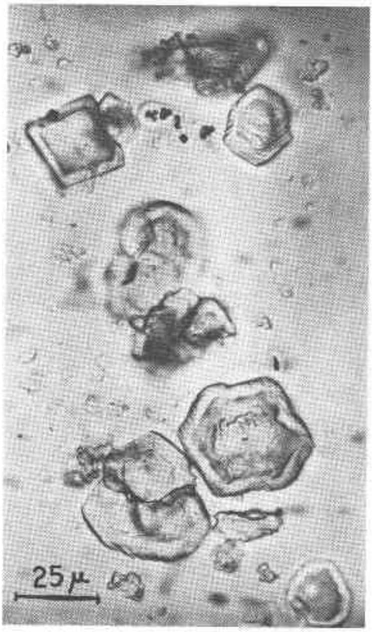

FIG. 1. Calcite with epitaxis of magnesite.

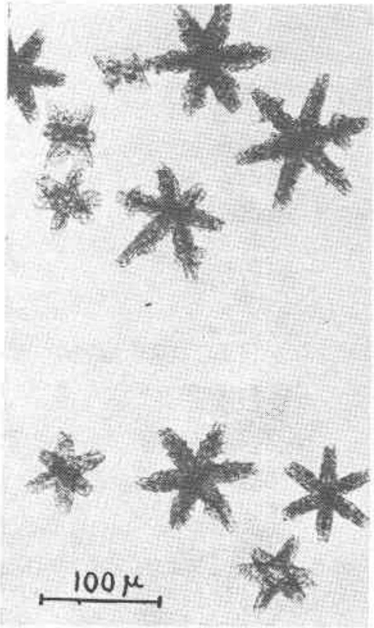

FIG. 2. Starshaped crystals of dolomite.

fraction patterns and by chemical analyses. These gave for the rhombohedral crystals: MgO 21.3%, CaO 29.8, organic residue insoluble in HCl 2n 2.2, loss on ignition 46.2, and for the starshaped crystals: MgO 22.4, CaO 31.2, residue 0.2, loss on ignition 46.4.

REFERENCES

JANTZSCH, G. AND F. ZEMEK (1949) Preparation of synthetic crystalline magnesite. *Radex-Rundschau*, **3**, 110–111.

MEDLIN, W. L. (1959) The preparation of synthetic dolomite. *Am. Mineral.* **44,** 979–986.

WALTER-LÉVY, L. (1937) Carbonates basiques de magnésium. *Ann. Chim.* 11, ser. **7,** 169–171.

THE AMERICAN MINERALOGIST, VOL. 50, MARCH–APRIL, 1965

THE UNIT CELL OF KRAUSITE[1]

EDWARD J. GRAEBER, *Sandia Corporation, Albuquerque* AND
ABRAHAM ROSENZWEIG, *University of New Mexico, Albuquerque*

The mineral krausite, an anisodesmic oxysalt of potassium and iron, was discovered in association with alunite and coquimbite at Borate in

---

[1] This work was supported by the United States Atomic Energy Commission.