examination of the lines discloses that they are slightly inclined to each other. These observations suggest a mosaic growth of stratigraphical sheets.

Synthetic baryte crystals were obtained by slowly cooling a fused mixture of barium chloride and sodium sulphate (or potassium sulphate) in a gradient furnace at a temperature of 1060° C and extracting the fused crystalline mass with water. Almost all crystals examined so far exhibited domes, with *d* (102) more prominent than *O* (011) faces; *c* (001) was of rare occurrence. This indicates that the rate of growth of *c* is faster than that of *O* and *d* for the crystals grown by the fusion process. A typical photomicrograph (fig. 3, ×120) of a (102) face of a synthetic baryte crystal shows loops having flat surfaces, indicating a platy growth. Etching of this crystal in conc. H_2SO_4 (fig. 4, ×270) gives rise to conical depressions, with triangular and trapezium outlines on the surface as opposed to rectangular etch pits on (001) faces (fig. 2); there are a number of different types of linear arrays of etchpits, which are not concentrated on the edges of the growth layers and have the same orientation on the different growth sheets. These points suggest the etchpits to be the seat of some specific defects, a selective action of etchant, and the flatness of the growth sheets, which are parallel to each other to the extent that etching failed to reveal any inclination. Further work is in progress and will be published shortly.

Acknowledgements. The authors are grateful to Professor N. S. Pandya for his keen interest in the work and one of us (C.L.S.) expresses his thanks to U.G.C. for the award of a research scholarship.

Department of Physics,
Faculty of Science,
Maharajah Sayajirao University,
Baroda—2 (India).

J. R. PANDYA
C. L. SARAF

Reference

TOLANSKY (S.), Zeits. Electrochem. 1952, vol. 56, p. 263.

[*Manuscript received 12 June 1967*]

A klementite from chlorite–sericite schist, Wajula, Distr. Almora, U.P., India

DURING investigations on the Chandpur rocks (Auden, 1937) of Wajula (29° 56′ N.; 79° 38′ 30″ E.) the authors came across a dark olive-green variety of chlorite occurring in the quartz veins associated with the magnetite-bearing chlorite–sericite schist, which occurs interbanded with various types of migmatites. This chlorite has been identified as klementite, a variety of thuringite. The only other description of this particular species is by Engelhardt (1942) from Schmiedefeld, Thuringia; there too the mineral is associated with magnetite and quartz. In thin flakes the mineral is light green but deeper coloured in aggregates. The specific gravity is 3·32. The pleochroism is distinct with α pale green, γ green. Uniaxial negative to biaxial, $2V_{\alpha}$ rarely exceeds 3°. The refractive indices, determined by immersion method, are: β 1·664, γ 1·671.

An X-ray investigation of the mineral by Dr. S. Z. Ali yielded five orders of diffractions from (001), with intensities *m*, *s*, *m*, *m*, *w* and d_{001} 14·20 Å.

According to Ali the mineral closely resembles ripidolite on the relevant ASTM card; nevertheless, she has agreed to the possibility of its being klementite. Chemical analysis by J. C. Trehan gave SiO_2 22·70, Al_2O_3 22·95, MgO 21·10, total iron as Fe_2O_3 23·10, loss on ignition 10·25 %. Alkalis, CaO, TiO_2, and MnO are absent. This suggests klementite, as no ripidolite lacking in all these components has been described so far in the literature and the present specimen resembles not only in chemical composition but also in colour and specific gravity the mineral described as thuringite by Engelhardt (1942). According to Hey's classification (1954) the mineral falls within the region of klementite (a variety of thuringite) as its Fe total/(Fe+Mg) is 0·36, Si = 2·3, and there appears to be a substantial amount of ferric iron. The composition approximates to $Mg_{3\cdot3}Fe_{1\cdot8}Al_{2\cdot8}Si_{2\cdot3}(O,OH)_{18}$.

The X-ray study of the mineral was carried out by Dr. (Mrs.) S. Z. Ali, National Physical Laboratory, New Delhi, and her comments are gratefully acknowledged.

Centre of Advanced Study in Geology,
Panjab University,
Chandigarh—14,
India.

I. C. Pande
P. K. Verma

References

Auden (J. B.), 1937. Rec. Geol. Surv. Ind., vol. 71, p. 407.

Engelhardt (W. von), 1942. [Zeits. Krist., vol. 104, p. 142], quoted in Deer (W. A.), Howie (R. A.), and Zussman (J.), 1962. Rock forming minerals, Part 2, Longmans, London.

Hey (M. H.), 1954. Min. Mag., vol. 30, p. 280.

[*Manuscript received 31 January 1967*]