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EXPERIMENTAL DEFORMATION OF EPIDOTES

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Single crystals of epidot were deformed by uniaxial piston-cylinder pressure cell at temperatures from 25°–450°C and under pressures of 2–12 kb in order to study the mechanical reaction. New cleavage-planes, translation-planes, kink bands, twin-planes and bending-gliding in form of optical undulation could be expected. In fact, numerous new *cleavage-planes*, parallel to (110) (111) (101) $\bar{1}01$), appeared during these experiments.

The positions of these new planes were strictly connected with the *amount* of pressure and of the *direction* of the axial pressure applied to the single crystal. In particular, translation planes were observed parallel to (110) (100) (010), for $T =$ translation plane (100), $t =$ direction of translation [010]. These were found between different pressures from 2–12 kb, and at increasing temperatures between 300° to 400°C.

New twin-planes did not appear under these experimental conditions. At the same time, real kink-bands were not produced; on the other hand, zigzag-bands as pseudo-kink-bands were observed in single crystals and twins formed by intersections of segments parallel to (101) and ($\bar{1}01$), between 2–9 kb and 300°–450°C.

Optical undulation of 6°–20° was observed at 25°C and 3–6 kb, in the second time at 400°C and 2 kb. [010] and [100] can be described as experimental bending axes, as also known in natural deformed epidot[1]. It is worth noting that with increasing temperature the angle of the optical axis decreases from 82°–72°, depending on both chemical composition and thermal history[2]. These experiments were carried out to higher temperatures until the transition of epidot to anorthite appeared, in agreement with Liou[3].

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