

On the nature of "lublinite" from Hollanta (Turkey)

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Abstract

SEM-photos reveal that the needles and fibers of calcite known as "lublinite" consist of short individual calcite crystals, with their *c* axes parallel, but stacked slightly *en echelon*. The resultant needles, because of this *en echelon* stacking, display the unusual extinction angles previously found puzzling in "lublinite."

"Lublinite," once considered to be a distinct mineral, with type locality in Lublin, Poland (Iwanoff, 1906; Tschirwinsky, 1906) but later shown to be a special variety of calcite (Tschirwinsky, 1910; Lang, 1915; Morozewics, 1907, all cited by Thugutt, 1929), consists of colorless needles and fibers displaying an extinction angle of 40–50° (Iwanoff, 1906) or 30–40° (Mügge, 1914). These can be length-fast or length-slow (Tschirwinsky, 1906; Mügge, 1914). SEM study of some "lublinite" from a cauliflower-like carbonate deposit covering a cave roof in Hollanta (Central Anatolia) revealed the needles to consist of more-or-less equidimensional calcite crystals, of indeterminate morphology, stacked so that their *c* axes remained parallel, but off-set so as to be *en echelon* (Fig. 1). The sample studied, whose needles were mostly length-fast, ranged in cross-section from 30 to less than 2 μ , and showed maximum extinction angles from 32–39°, conforms optically to earlier descriptions of "lublinite" whereas X-ray diffraction unambiguously demonstrated the sample to be wholly calcite. This "lublinite" hence represents an unusual habit of calcite. The *en echelon* stacking of crystals with their *c* axes mutually parallel explains the character of the elongation and the ability of all parts of curved needles of "lublinite" to become simultaneously extinct.

References

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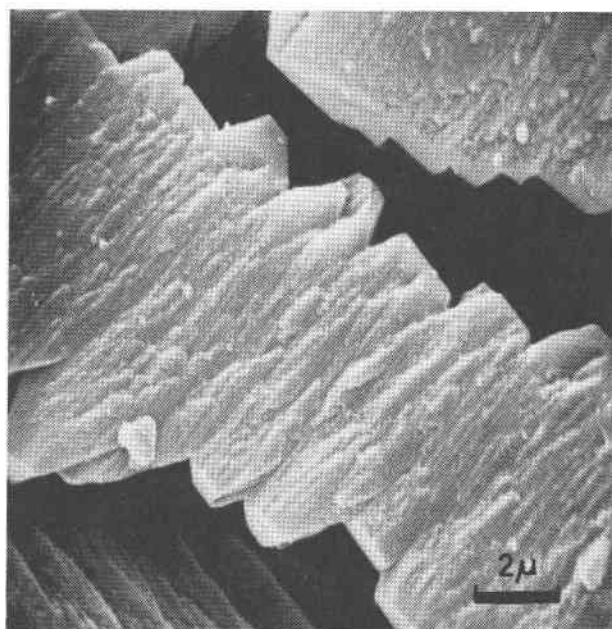


FIG. 1. SEM micrograph of lublinite from Hollanta. Note the *en echelon* stacking of the crystals to form a needle.

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