SIMPLE FORMS OF SYNGENITE (KALUSZITE) CRYSTALS

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Syngenite crystallography has been sufficiently studied by J. Rumpf in 1872, V. Zepharovich in 1872, 1873, K. Ubra in 1873, A. Laskiewicz in 1927, 1934, 1936 (KOROBTSOVA, 1955) and L. Gorogotskaya in 1966. Our investigations of many syngenite crystals from Dombrove occurrence (Kalush area, Precarpathians) give evidence that their habit is often determined by {100} pinacoid (Fig. 1).

{$\overline{7}$04}, {504}, {650} and {10.3.0} are very rare. This list is based on the crystallographic data published by GOLDSCHMIDT (1922), PALACHE et al. (1951), LAZARENKO et al. (1962) and GOROGOTSKAYA (1966). Theoretical d_{hkl} have been calculated by us according to X-ray data (JCPDS 28-739, $a_0 = 9.777(2)$, $b_0 = 7.147(2)$, $c_0 = 6.250(2)$, $\beta = 104°01'(2)$). It is clear that the forms with big values of d_{hkl}

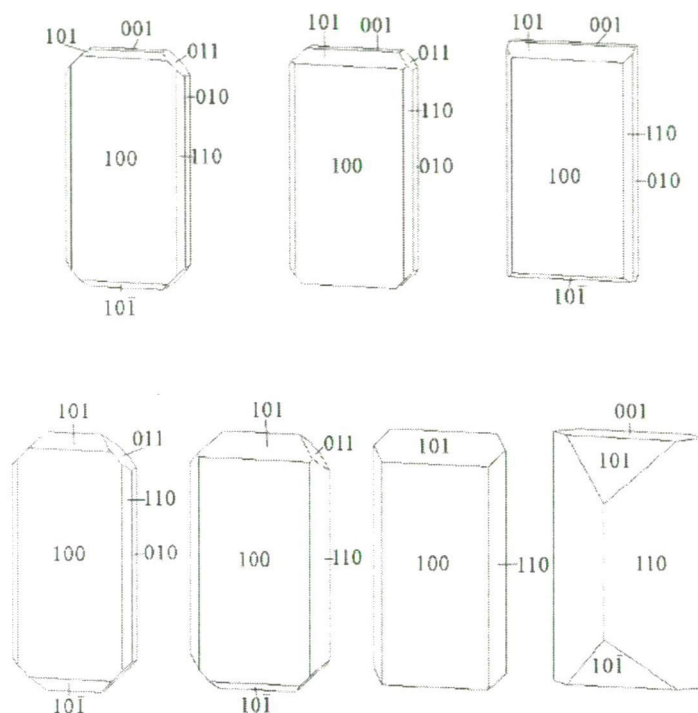Fig.1: Main morphological types of syngenite crystals from Dombrove quarry.

Syngenite crystals of {100} + {110} pinacoidal-prismatic habit and {110} prismatic habit are rare. Owing to peculiarities of syngenite structure (GOROGOTSKAYA, 1966) crystals are often prolonged along [001]. Well-developed and widespread forms on investigated crystals are represented by {100}, {010}, {001}, {101}, {$\overline{1}$01}, {110} and {011}.

List of all known simple forms of syngenite crystals, their distribution and development according to their interplanar distances is next: {100} - d_{hkl}, 9.486 (9.490) (theoretical data and in brackets X-ray data, JCPDS 28-739); {010} – 7.147; {001} – 6.064; {$\overline{1}$01} – 5.784; {110} – 5.708 (5.710); {101} – 4.626; {011} – 4.624 (4.624); {$\overline{1}$11} – 4.496 (4.496); {$\overline{2}$01} - 4.271; {210} - 3.952 (3.954); {111} – 3.883 (3.887); {$\overline{2}$11} – 3.667; {120} – 3.344 (3.347); {211} – 3.042; {310} – 2.892 (2.891); {$\overline{1}$12} – 2.856 (2.855); {$\overline{2}$21} – 2.741 (2.741); {221} – 2.448 (2.447); {410} – 2.251 (2.250). The other forms {411}, {510}, {203}, {430}, {520}, {610}, {$\overline{3}$04}, {124}, {710}, {720}, {304}, {810},

are most frequently occurring and well-developed faces on syngenite crystals.

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