
Pale blue celestite crystals are found in cavities in dolomite at Pechischi. The color becomes paler on a short exposure to daylight (10 days). Heating to 180° for a few minutes causes complete decolorization. An analysis gave: SrSO$_4$ 97.98, BaSO$_4$ 1.41, CaSO$_4$ 0.52, Fe trace, sum 99.91; sp. gr. 3.94. Celestite also occurs in the interior of brachiopod shells at Morkvashi. Strontianite sometimes forms a coating on the celestite crystals near Pechischi.

E. F. H.


Pyrope had the following indices:

<table>
<thead>
<tr>
<th>Location</th>
<th>$n_Li$</th>
<th>$n_{Na}$</th>
<th>$n_{Ti}$</th>
<th>$n_{Blue}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Měrunice</td>
<td>1.73885</td>
<td>1.74436</td>
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<td>1.75968</td>
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<tr>
<td>Podesděčí</td>
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<td>1.74696</td>
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<td>Dlázkovice</td>
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<td>1.75048</td>
<td>1.75800</td>
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<tr>
<td>Trbivíčí</td>
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<td>1.74385</td>
<td>1.75150</td>
<td>1.76004</td>
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<tr>
<td>Železnice</td>
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<td>1.74563</td>
<td>1.75080</td>
<td>1.76012</td>
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<tr>
<td>Lhota Bradlecka</td>
<td>1.73914</td>
<td>1.74606</td>
<td>1.75258</td>
<td>1.76134</td>
</tr>
</tbody>
</table>

Beryl from Pisek: (Na) $\omega$ 1.5744-1.5751, $\epsilon$ 1.5692-1.5701. Nepheline from Podhorn: (Na) $\omega$ 1.54866-1.54912, $\epsilon$ 1.54327-1 54382.


Structures were determined from X-ray powder diffraction patterns. Ti, Zr, Ce, and Os are hexagonal close packed, the axial ratios, and side and height of the unit triangular prisms being respectively: Ti, 1.59, 2.97 Å, 4.72 Å. Zr, 1.59, 3.23, 5.14. Ce, 1.62, 3.65, 5.96. Os, 1.59, 2.71, 4.32. This is face-centered cubic, with a side for the unit cube of 5.04 Å. Ce has a face-centered cubic form, side 5.12 Å, as well as its hexagonal form. But the apparent dimorphism may be due to impurities.

E. F. H.


Pure preparations of ZnS, CdS, HgS, MgS, CaS, SrS, and BaS, were fused in a steel bomb in an atmosphere of nitrogen at 150 atm. pressure, temp. ranging from 1450-2000°C. All fusions except CdS and HgS showed phosphorescence.

Otto von Schlichten.

OPTICAL AND LIGHT-ELECTRICAL INVESTIGATIONS ON CINNABAR. H. Rose. _Z. Krist._, 56, 427-8, (1921).

Cinnabar has a high $n$, strong dispersion and double refraction, as well as considerable light-electrical conductivity. It is therefore well suited for a study (here presented) of the relation between that conductivity and absorption in doubly refracting crystals.

NaCl xls. at ordinary temperature show a small electric conductivity. Experiments did not prove whether or not this was due to secondary influences. If exposed to X-rays or γ rays, NaCl xls. have a much greater conductivity, in light, after the treatment. Naturally colored NaCl xls., in light, show the same phenomenon. Only the absorbed light is of influence on the conductivity. Sylvite and fluorite behave similarly.


NH₄NO₃ crystallizes from aqueous solution at room temperature in long acicular crystals. These can be bent or twisted and are slightly elastic. The bending is probably plastic in nature, and a local rotational atomic adjustment occurs when the crystal is bent. The structure is but little changed in the process.


A list of 147 mineral names arranged alphabetically which have appeared in the recent literature. Many represent new mineral species. The name is followed by a brief description of the mineral and a reference to the original publication.


The mineral content of 46 springs varies from 170-310 parts per million. In only a few instances is it below 270 or above 290. SiO₂ varies from 32.5-52.3; Ca 26-50; HCO₃ 94-172; SO₄ 6-28; Cl 2.36-3.33; also small amts of Mg, K, and Na were found and traces of B, I, and Br. No evidence of radium salts was detected, although the intensity of radioactivity varies from 0.5-265.8. The temp. measurements range from 95.4-147°F.


The grains, separated by sieving, had a mean refractive index of 1.62 and sp.gr. 2.70. Analysis gave: SiO₂ 48.12; Al₂O₃ 9.16; Fe₂O₃ 19.10; FeO 3.47 CaO 0.76; MgO 2.36; K₂O 7.06; Na₂O 0.22; H₂O(105°) 4.78; H₂O > 105° 5.28. In order to determine the constitution of the mineral many analyses were recalculated in mol. proportions. The proportion of alkalies was found to be quite constant and no evidence of the substitution of these by H₂O or by the magnesia group was detected. There is considerable replacement of the K₂O by Na₂O. In the groups R₂O₃ and RO the mol. proportions are not constant and indicate no relationship to the silica and alkalies. If the (Fe,Mg)O and (Fe,Al)₂O₃ are considered as mutually replaceable, the ratios obtained lead to the formula, R₂O. 4(R₂O₃,RO). 10 SiO₂, n H₂O, the ratio of bases to silica being 1:2.