

ABSTRACTS

CELESTITE AND STRONTIANITE FROM THE PERMIAN DEPOSITS OF THE DISTRICT OF SVIAZHSK, GOVT. KAZAN. P. DRAVERT. *Ann. Géol. Min. Russie*, 17, 75-7 (1916); thru *Mineral. Abstr.*, 2, 137.

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: SrSO₄ 97.98, BaSO₄ 1.41, CaSO₄ 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 Pechishchi. E. F. H.

OPTICAL CONSTANTS OF SOME BOHEMIAN MINERALS. BOHUSLAV JEŽEK. *Rozpravy České Akad.*, cl. 2, 30, no. 35, 5 pp. (1921); thru *Mineral. Abstr.*, 2, 139.

Pyrope had the following indices:

	<i>n_{Li}</i>	<i>n_{Na}</i>	<i>n_{Tl}</i>	<i>n_{Blue}</i>
Měrunice	1.73885	1.74436	1.74763	1.75968
Podsedice	1.73806	1.74301	1.74696	1.75748
Dlažkovice	1.73882	1.74507	1.75048	1.75800
Třibivlice	1.73721	1.74385	1.75150	1.76004
Železnice	1.73960	1.74563	1.75080	1.76012
Lhota Bradlecka	1.73914	1.74606	1.75258	1.76134

Beryl from Pisek: (Na) ω 1.5744-1.5751, ϵ 1.5692-1.5701. Nephelite from Podhorn: (Na) ω 1.54886-1.54912, ϵ 1.54327-1.54382. E. F. H.

CRYSTAL STRUCTURE OF TITANIUM, ZIRCONIUM, CERIUM, THORIUM AND OSMIUM. A. W. HULL. *Phys. Rev.* 18, 88-9, (1921).

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. Th 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.

PHOSPHORESCENCE AND MELTING OF THE SULPHIDES OF THE SECOND GROUP, PARTICULARLY ZINC SULPHIDE. ERICH TIEDE AND ARTHUR SCHLEEDE. *Centr. Min.*, 1921, 154-158.

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. E. F. H.

ELECTRIC CONDUCTIVITY OF SOME CRYSTALS AND THE INFLUENCE OF RADIATION. II. W. C. RÖNTGEN. *Ann. Physik*, 64, 1-195, (1921); thru *Chem. Absts.*, 15, 2250-1.

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.

E. F. H.

THE PROPERTIES OF PLASTIC CRYSTALS OF AMMONIUM NITRATE. W. N. BOND. *Phil. Mag.*, 41, 1-21, (1921).

NH_4NO_3 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.

E. F. H.

NINTH LIST OF NEW MINERAL NAMES. L. J. SPENCER. *Mineralog. Mag.*, 19(98), 334-354 (1922).

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.

W. F. H.

THE HOT WATER SUPPLY OF THE HOT SPRINGS, ARKANSAS. KIRK BRYAN. *J. Geology*, 30,(6), 425-49 (1922).

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. SiO_2 varies from 32.5-52.3; Ca 26-50; HCO_3 94-172; SO_4 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, altho the intensity of radioactivity varies from 0.5-265.8. The temp. measurements range from 95.4-147°F.

W. F. H.

ON GLAUCONITE FROM THE GREEN SAND NEAR LEWES, SUSSEX; THE CONSTITUTION OF GLAUCONITE. A. F. HALLMOND. WITH A CHEMICAL ANALYSIS BY E. G. RADLEY. *Mineralog. Mag.*, 19(98), 330-3(1922).

The grains, separated by sieving, had a mean refractive index of 1.62 and sp.gr. 2.70. Analysis gave: SiO_2 48.12; Al_2O_3 9.16; Fe_2O_3 19.10; FeO 3.47 CaO 0.76; MgO 2.36; K_2O 7.08; Na_2O 0.22; $\text{H}_2\text{O}(105^\circ)$ 4.78; $\text{H}_2\text{O}>105^\circ$ 5.28. In order to determine the constitution of the mineral many analyses were recalculated in mol. proportions. The proportion of alkalis was found to be quite constant and no evidence of the substitution of these by H_2O or by the magnesia group was detected. There is considerable replacement of the K_2O by Na_2O . In the groups R_2O_3 and RO the mol. proportions are not constant and indicate no relationship to the silica and alkalis. If the $(\text{Fe},\text{Mg})\text{O}$ and $(\text{Fe},\text{Al})_2\text{O}_3$ are considered as mutually replaceable, the ratios obtained lead to the formula, $\text{R}_2\text{O} \cdot 4(\text{R}_2\text{O}_3, \text{RO}) \cdot 10 \text{SiO}_2 \cdot n \text{H}_2\text{O}$, the ratio of bases to silica being 1:2.

W. F. H.