OCCURRENCE: An alteration product of tennantite in the presence of lime; found with other secondary copper ores and the sulfides from which they were derived in an old copper mine at Miedzianka, 19 km. west of Kielce, Poland, reopened in 1917.

DISCUSSION: A member of the erinite group, sufficiently distinct in the presence of a large amount of calcium to be classed as a separate species or sub-species. The analysis was apparently made on material of somewhat doubtful purity, and there is a lack of optical data, but may be provisionally accepted as a valid species.

E. T. W.

NEW MINERALS: DOUBTFUL SPECIES

CLASS: OXIDES, ETC. DIVISION: $R'' : R''' : H_2O = 2 : 1 : 2$ (?)

"Lubeckite"

J. MOROZEWICZ: Lubeckite, a cobaltiferous mineral from Miedzianka. *Bull. Int. Acad. Sci. Cracovie, Class A, Sci.-Math.*, **1918**, 185-190; through *Min. Abstr.*, **2**, 52; (original not seen).

NAME: Presumably personal.

CHEMICAL PROPERTIES: A formula is assigned by the author, but it is rather complex, and as the material is colloidal and of doubtful homogeneity its validity is questionable. The general formula is $x\mathrm{CuO}.y(\mathrm{Mn,Co})_2\mathrm{O}_3.z\mathrm{H}_2\mathrm{O}$; theory for $x=2$, $y=1$, $z=2$, and all the $R'''=\mathrm{Mn}$: CuO 45.1, Mn_2O_3 44.7, H_2O 10.2, sum 100.0%. Analysis gave, after deducting over 59% malachite, CuO 50.1, Mn_2O_3 24.2, Co_2O_3 14.8, H_2O 10.9, sum 100.0%. Dissolves in HCl with evolution of Cl.

PHYSICAL PROPERTIES: Color black; streak dark gray-brown; opaque. Structure, spherules or botryoidal aggregates, concentric-shelly within; evidently colloidal. H. = 2−3, d. = 4.8.

OCCURRENCE: In malachite with native silver among the secondary minerals at Miedzianka, as described under staszicite, above.

DISCUSSION: One of the group of colloidal mixtures of R'' and R''' oxides, known collectively as wad. If it is admitted that individual members should receive names, then they may be arranged as follows:

Name	**R''**	**R'''**
Ouatite	Mn	Mn
Asbolite	Mn	Mn+Co
Rabdionite	Cu	Fe+Mn
Lampadite	Cu	Mn
Lubeckite	Cu	Mn+Co
Heterogenite	Cu	Co
Heubachite	Ni	Co

In all cases the ratios are widely variable, and definite formulas mean nothing whatever. The abstractor would prefer to call them varieties of one "colloid-species," wad.

E. T. W.

ABSTRACTS

CHEMICAL INVESTIGATION OF JAPANESE MINERALS CONTAINING RARER ELEMENTS. YUKI SHIBATA AND KENJIRO KIMURA. I. ANALYSES OF NAEGITE, FERGUSONITE, AND MONAZITE FROM NAEGI, MINO PROVINCE. *J. Chem. Soc. Japan*, **42**, 1-16, 1921; through *Chem. Abstr.* **15**, 2049. II. ANALYSES OF COLUMBITE AND MONAZITE OF ISHIKAWA, IWAKI PROVINCE. *ibid.* 959-64; through *Chem. Abstr.* **16**, 1722.

Detailed descriptions of the minerals and analytical methods are given. Besides the quantitative analyses, spectroscopic determinations of the rare elements are included.

E. F. H.

THE CHEMICAL CONSTITUTION OF THE SILICATES. B. GOSSNER *Centr. Mineral.*, **1921,** 513-25.

G. advances the idea that the complex silicate minerals are built up of a small number of simple molecules such as Na_2SiO_3, $MgSiO_3$, Al_2O_3, $Al_2O_3.SiO_2$, $Al(OH)_3$; and that complex molecular individuals are not present. To support this he cites a number of cases of paragenesis of chemically related minerals, in which the associated minerals might be assumed to have been built up of the same simple molecules.

E. F. H.

CHEMICAL COMPOSITION OF ALKALI FELDSPARS. K. SETO. *J. Geol. Soc.*, (Tokyo) **27,** 403-16, 1920; *J. Japan. Ceram. Assoc.* **343,** 237-40; **344,** 269-71, 1921; through *Chem. Abstr.*, **16,** 3610.

The feldspars examined include albite from Alp Rishuna, orthoclase from Madagascar, moonstone from Ceylon, adularia from St. Gothard, and from Riedertobel, and a native perthite. E. F. H.

ANALYSES AND OPTICAL PROPERTIES OF AMESITE AND CORUNDOPHILITE FROM CHESTER, MASS., AND OF CHROMIUM-BEARING CHLORITES FROM CALIFORNIA AND WYOMING. EARL V. SHANNON. *Proc. U. S. Nat. Museum*, **58,** 371-9, (1921).

Analysis of corundophilite: SiO_2 23.20, Al_2O_3 24.42, Fe_2O_3 3.48, CaO 1.04, MgO 22.76, FeO 13.40, H_2O 12.00, total 100.30; α 1.600, β 1.603, γ 1.610, marked pleochroism in green. Lavender Cr-chlorite from Newcastle, Calif.: SiO_2 29.36, Al_2O_3 18.81, Cr_2O_3 1.53, MgO 35.67, CaO 2.20, FeO 1.65, H_2O 11.34, sum 100.56; α 1.582, β 1.582, γ 1.593. Deep purplish-red Cr-chlorite from Deer Park, Wyo.; chromite 2.04, SiO_2 32.12, CaO 1.24, FeO 1.98, MgO 35.36, Al_2O_3 9.50, Cr_2O_3 7.88, H_2O 10.25, sum 100.37; α 1.587, β 1.590, γ 1.590, pleochroism in red-purple.

E. F. H.

NOTES ON ANGLESITE, ANTHOPHYLLITE, CALCITE, DATOLITE, SILLIMANITE, STILPNOMELANE, TETRAHEDRITE, AND TRIPLITE. EARL V. SHANNON. *Proc. U. S. Nat. Museum*, **58,** 437-53, (1921).

Here are described: Angelsite xls., Gunnison Co., Colo.; Tintic dist., Utah [$\varphi(012)$ and $N(310)$ new for the locality, $O_1(023)$ doubtful, for the species], Hercules Mine, Coeur d' Alene, Ida. [new F_1 (1.0.14)]. Calcite xls. from the Overlook Mine, Pine Creek dist., Ida. Triplite, Chatham, Conn.: MnO 52.40, FeO 4.95, sp. gr. 3.584, α 1.665, β 1.673, γ 1.682, distinct pleochroism. Crystallized tetrahedrite from the Hypotheek Mine, Pine Creek dist., Ida. Datolite crystals, Meriden, Conn. Anthophyllite, var. gedrite, Chesterfield, Mass., +elong., ext. $\parallel$, α 1.644, γ 1.660, analysis. Bucholzite sillimanite in pegmatite from Blandford, Mass. α 1.629, γ 1.635. Stilpnomelane, chalcodite var., Lambertville, N. J., n 1.63. E. F. H.

DIABANTITE, STILPNOMELANE, AND CHALCODITE OF THE TRAP QUARRIES OF WESTFIELD, MASS. EARL V. SHANNON. *Proc. U. S. Nat. Museum*, **57,** 397-403, (1921).

Analyses of diabantite and stilpnomelane are given. Diabantite (aver. of 4) SiO_2 28.15, Al_2O_3 15.17, Fe_2O_3 3.85, FeO 25.23, MgO 14.56, CaO 0.59, MnO 0.21, H_2O- 0.57, H_2O+ 11.25, sum 99.58; sp. gr. 2.77, n 1.62. Stilpnomelane (aver. of 2): SiO_2 44.08, Al_2O_3 4.74, Fe_2O_3 5.27, FeO 23.31, MgO 8.36, CaO trace, MnO 0.87, H_2O- 2.21, H_2O+ 10.28, sum 99.12, α 1.560, γ 1.575. Chalcodite, the golden oxidation product of stilpnomelane: SiO_2 44.64-48.16, Al_2O_3 6.75, Fe_2O_3 23.59, MgO 9.86–4.43, H_2O- 6.21-3.97, H_2O+ 7.14–7.10, n 1.64. E. F. H.

SMOKY QUARTZ. C. V. Raman. *Nature*, **108**, 81, (1921).

As Strutt (*Proc. Roy. Soc*, **95**A, 476-9, 1919) has shown, smoky and yellow quartz are optically turbid media, scattering light very strongly. These varieties are as transparent in the infra-red as colorless quartz. This is because the scattering is effective in inverse proportion to λ^4.

E. F. H.

COLOR OF COLORED FLUORITES. Tokutaro Sakao and Mitsuie Hirose. *Mem. Coll. Sci., Kyoto Imp. Univ.*, **4**, 349-50, (1921); *Chem. News*, **125**, 213, (1922); thru *Chem. Abstr.* **16**, 4160.

An ultramiscroscopic examination of several colored fluorites was made with the purpose of determining whether the color was due to organic matter. There were only a few bright ultramicroscopic particles observed, and their distribution bore no relation to the coloring.

E. F. H.

EPIDOTORTHITE AS THE CAUSE OF COLOR IN FLUORITE, Per Geijer. *Geol. För. Förh*, **43**, 386-8, (1921); through *Chem. Abstr.* **16**, 1376.

A specimen of Swedish fluorite is in part colorless, but violet in layers 0.01 mm. thick next to the rare earth mineral epidotorthite.

E. F. H.

THE PRODUCTION OF ROSE RED COLORING IN FLUORITE. C. Doelter. *Centr. Mineral.*, 479-80, (**1921**).

Almost colorless fluorite from Weardale became rose red in color on treatment with a quartz lamp for 6 hrs. A much longer (14 days) treatment with ½ gr. radium chloride had no effect on the original color.

E. F. H.

THE COLORS OF MINERALS AND INORGANIC SUBSTANCES AT LOW TEMPERATURES. M. Bamberger and R. Grengg. *Centr. Min.*, 65-74, (**1921**).

Small fragments of minerals and inorganic compounds were suspended in liquid air in a Dewar flask. The liquid air evaporated completely producing a temperature of −190° C. The substance was at once compared with one at room temperature and the color change noted. A large number of substances were examined and the results tabulated. Most substances showed color changes although some showed none.

Otto von Schlichten.

THE ARTIFICIAL COLORATION OF CRYSTALS OBTAINED BY SOLIDIFICATION OF A MELTED COMPOUND AND CRYSTALLINE DIFFUSION. Paul Gaubert. *Compt. Rend.*, **172**, 1299-1301, (1921).

A study of the coloration of organic crystals by organic colored compounds. The crystals contained inclusions, usually crystalline, of the pigmenting material.

E. F. H.

THE EFFECT OF THE RAYS FROM RADIUM, X-RAYS, AND ULTRA-VIOLET RAYS ON GLASS. J. R. Clarke. *J. Soc. Glass Technology*, **5**, 155-65, (1921).

The writer studied the effect of rays on Na glasses, pure, and with varying amounts of Co and Se. Fluorescence is not invariably accompanied by coloration, and vice versa. The α-rays were most effective in producing fluorescence, the β-rays gave the Co and Se glasses a brown coloration, which was unstable at 100°.

E. F. H.

PRELIMINARY NOTE ON MONTICELLITE ALNOITE FROM ISLE CADIEUX, QUEBEC. N. L. BOWEN. *J. Wash. Acad. Sci.*, **11**, 278-81, (1921).

Monticellite is for the first time noted as an igneous rock constituent, from both Isle Cadieux and Alnö. E. F. H.

QUARTZ AS A GEOLOGIC THERMOMETER AND THE SIGNIFICANCE OF THE COMPOSITION PLANES OF ITS TWINS. O. MÜGGE. *Centr. Mineral.*, 609-15, 641-8, (**1921**).

A summary of criteria for the det'n of the formation temp. of rock crystal (above or below 575°) from its crystal forms. E. F. H.

THE DEVELOPMENT OF ORTHOCLASE PHENOCRYSTS IN THE MAGMA. A. JOHNSEN. *Z. Krist.*, **56**, 423-4, (1921).

In magmas as in artificial melts the first crystals to form are twinned. With orthoclase the original habit seems to have been that of adularia, but as the magma cooled and the rate of deposition on different faces changed, the normal habit gradually developed. Untwinned phenocrysts are always smaller, and may represent growth about fragments broken from the twins. E. T. W.

ORTHOCLASE FROM PENTICTON, B. C. T. L. WALKER. *Univ. Toronto Studies, Geol. Ser.*, **12**, 46-50, (1921).

In Carlsbad twins from Penticton, right-handed types form a larger proportion of the small xls. than of the large xls., suggesting that the later more acid magma might have given rise to more right-handed xls. than did the earlier magma. Two analyses are included. A. S. WILKERSON.

INCLUSIONS IN DIAMOND FROM SOUTH AFRICA. J. R. SUTTON. *Mineralog. Mag.*, **19**, 208-210 (1921).

The chief foreign minerals upon which the diamond has crystallized include garnet, ilmenite, olivine and pyrite. Also zircon and mica may be added while the cognate inclusions are graphite and bort. Inclusions set up fracture or strain in the enclosing diamond and when the fracture reaches the surface without breaking the diamond apart an intrusion of later crystallization, such as calcite, apophyllite or pectolite, may result. W. F. H.

DATA ON PLEOCHROIC HALOES. B. GUDDEN. *Diss. Göttingen* **1919**; *Z. Krist.* **56**, 422-3, (1921).

Pleochroic haloes around radioactive inclusions may be used to throw light upon the temperature relations of the enclosing rocks, as well as upon the age of the minerals in which they occur. The haloes gradually disappear on warming.

E. T. W.

NOTES ON THE METEORITE OF ESTHERVILLE, IOWA, WITH ESPECIAL REFERENCE TO ITS INCLUDED "PECKHAMITE" AND PROBABLE METAMORPHIC NATURE. GEO. P. MERRILL. *Proc. U. S. Nat. Museum*, **58**, 363-70, (1921).

The so-called peckhamite is probably a mixture of bronzite and olivine. A new analysis is published. E. F. H.

SWEDISH MINERALOGICAL RESEARCH. G. AMINOFF. *Geol. För. Förh.*, **43**, 188-201, (1921); through *Chem. Abstr.*, **15**, 3958.

Swedish mineralogical research has been largely descriptive. A list (by G. Flink) is given of 87 unnamed minerals from Långban which need investigation. A monograph on the Långban mines is being prepared. E. F. H.

FUNDAMENTAL PRINCIPLES ESTABLISHED BY RECENT SOIL INVESTIGATIONS. MILTON WHITNEY. *Science*, **54**, 348-51 (1921).

There is given a list of 31 minerals which have been identified in soils or obtained by quiet evaporation of their dilute extracts. E. F. H.

THE DEHYDRATION OF SPENCERITE. T. L. WALKER AND A. L. PARSONS. *Univ. Toronto Studies, Geol. Ser.*, **12**, 58-62, (1921).

Three of the four mols. of water in spencerite, $Zn_3(PO_4)_2.Zn(OH)_2$, are less firmly held than the fourth. Upon dehydration the mineral is converted directly to a substance of the composition of tarbuttite. With complete dehydration the end product had definite chemical and physical properties which are different from those of spencerite. A. S. WILKERSON.

AN EXAMINATION OF LILLIANITE AND GALENOBISMUTITE. T. L. WALKER AND E. THOMSON. *Univ. Toronto Studies, Geol. Ser.*, **12**, 11-5, (1921).

Supposed galenobismutite proved on chemical and mineralographic investigations to be essentially cosalite with some sphalerite and bismuth. Lillianite is confirmed as a distinct species. (See also *Amer. Mineral.*, **8**, 36).

A. S. WILKERSON.

WHAT CONCLUSIONS MAY BE DRAWN FROM THE OCCURRENCE OF LIQUID INCLUSIONS IN MINERALS. R. NACKEN. *Cent. Min. etc.*, 12-19 & 35-43, (**1921**).

N. shows from phase rule considerations that the behavior of liquid inclusions on warming gives no information of the temperature and pressure prevailing when the mineral was formed. For CO_2 a certain minimum temperature may be established. For H_2O the fact that the bubble disappears at a temperature below the critical enables us to establish the temperature of formation within narrow limits but pressure remains uncertain. A thorough study of homogeneous and heterogeneous equilibria is necessary before tentative conclusions can be drawn which in turn demands a physico-chemical investigation of the chemical system involved.

OTTO VON SCHLICHTEN.

THE ORIGIN OF GRAPHITE. THOMAS E. CLARK. *Econ. Geol.*, **16**, 167-83, (1921). HAROLD L. ALLING. *ibid.*, 334-7, A. N. WINCHELL. *ibid.*, 492-500.

C. treats chiefly of the vein and veinlike deposits of graphite occurring largely with limestone. The limestone may furnish CaO to the metamorphic lime silicates usually found with these deposits, liberating CO_2 which might furnish material for graphite. The gas can migrate, and for this reason graphite is usually found beyond the lime silicate zone. A. is of the opinion that the contact type of graphite, in the Adirondacks, was derived from organic matter in the lime muds now converted to limestone. W. believes that CO in magmas is an adequate source of graphite.

A. S. WILKERSON.

THE NATURAL IRON OXIDE HYDRATES. Karl Willmann. *Centr. Mineral.*, 673-8, **(1921)**.

The writer would distinguish the following as minerals: amorphous "*brauneisen*," varying in H_2O content; dimorphous xlln. forms of Fe_2O_3. H_2O, "*rubinglimmer*" and "*nadeleisenerz*" or "*samtblende*," the first in red transparent tabular xls., the second yellow orange and fibrous; and xlln. $2Fe_2O_3.3H_2O$, all being optically distinct.

E. F. H.

THE PRODUCTION OF FLUORITE AT ROOM TEMPERATURE. W. Wetzel. *Centr. Mineral.*, 444-7, **(1921)**.

Small octahedrons of fluorite were obtained by treating, for several days, Ca-bearing siliceous rocks with dilute HF. Amorphous CaF_2 was also produced.

E. F. H.

IDENTITY OF TRECHMANN'S 'β TIN' WITH STANNOUS SULPHIDE· L. J. Spencer. *Mineralog. Mag.*, **19**, 113-123 (1921).

Re-examination of the original crystals from Cornish tin furnaces establishes the identity of Trechmann's β tin with SnS. The original error was due to failure of performing a chem. analysis on the same crystals that were studied crystallographically. In the smelting of pyrites-bearing tin ores of Bolivia, some of the S combines with Sn forming platy crystals of SnS, while the Fe unites with Sn forming accicular crystals of $FeSn_3$. The crystals of SnS are orthorhombic and measure 2×3 cm across but only 1/20 mm thick. They are opaque, iron black in color and mark paper. H=2. The forms 010), (110), (120), (111), and repeated twinning on (101) were noted. The iron stannide $FeSn_3$ is tetragonal and forms aggregates of matted, accicular crystals. They are tin white with metallic luster, often with iridescent tarnish, and sometimes black. W. F. H.

DETERMINATION AND STUDY OF MINERALS. A NEW METHOD FOR COLLECTING AND DISTINGUISHING THE COATS PRODUCED BY THE BLOWPIPE. A. Braly. *Bull. soc. franc. min.*, **44**, 8-56, (1921).

A method for obtaining a fractional production of the coats of the volatile metals and for simple tests of the coats, first as oxides, then converted to the sulfides and finally to the iodides of the metals. The tests for the various metals are described in detail, and an excellent table summarizes the reactions. This method is said to do away with coats containing a mixture of the oxides of several metals. E. F. H.

A NEW METHOD OF USING THE PHYSICAL CHARACTERISTICS OF MINERALS FOR THEIR IDENTIFICATION. O. J. Gray. *Trans. Geol. Soc. S. Africa*, **23**, 114-7, (1921); thru *Chem. Abstr.* **16**, 2650.

A series of perforated sheets are used, each of which, placed upon an index sheet, cuts out those minerals which do not have the particular physical properties with regard to which the sheet was perforated. E. F. H.

WATER CONTENT OF HEULANDITE. K. H. Scheumann. *Ber. Verhandl. Sachs. Akad. Wiss. Leipzig*, **73**, 3-113, (1921); thru *Chem. Abstr.*, **15**, 3804.

An elaborate study, summarized in 18 analyses, 15 charts of curves, and hundreds of water determinations, made under different conditions. The hydration process is conceived as a crystallotropic lattice reaction, and not as an absorption process. E. F. H.