memories which bound them to him. He then recalled old Freiberg days, how teaching was carried on there, and how he himself used that method as a model. Heidelberg and Freiberg are places of related traditions, where one could gather and hold a circle of friends, such as he now saw around him.

On Sunday morning, February 11th, the Portheim Stiftung, under the leadership of Professor Pfeiffer, held a jubilee meeting in the splendidly decorated hall of the Weimar House. It was the first time that this organization had sent out invitations to a wide circle of guests, and the hall was well filled. After a musical prelude, Professor Pfeiffer greeted the assemblage, and especially Professor Goldschmidt. The latter then spoke at length of the history, purposes and aims of the foundation. It possesses a number of buildings, mostly in Heidelberg, where scientific institutes are to be established. Several, including Professor Goldschmidt's own Crystallographic-Mineralogic Institute, are already in operation. He was particularly fond of the Institute for Investigation of Musical Theory, and gave an account of its progress, with musical illustrations, which interested the assembly greatly. A group of seven young girls dressed to represent the fundamental colors then appeared, and after discussing their respective values, finally grouped themselves so as to produce the maximum harmony; this idea had been originated, and the words composed, by Frau Goldschmidt. As a birthday gift the Portheim Stiftung presented a handsome leather bound volume containing an account of its history and a series of works from its new Institutes. Likewise the Winter publishing house made Professor Goldschmidt happy by the issue of a new volume of the Beiträge zur Krystallographie und Mineralogie, announcing, in addition, that the Atlas der Krystallformen is nearly completed.

That afternoon a supplemental celebration was held at Professor Goldschmidt's house; and eight days later many guests came there again, in honor of the birthday of Frau Goldschmidt.

ABSTRACTS: MINERALOGY

NOTE ON THE RIEBECKITE OF EVISA, CORSICA, AND ON THE COMPOSITION OF SIMILAR SODIC AMPHIBOLES FROM OTHER LOCALITIES. J. Orcel. *Bull. soc. franc. min.*, **43**, 232-243, 1920.

Analysis of riebeckite from pegmatite in a riebeckite granite from near Evisa shows approx. $8SiO_2.3FeO.Fe_2O_3.2Na_2O.H_2O$. Sp. gr. 3.40. E. F. H.

NOTE ON BRANNERITE. Roger C. Wells. *J. Franklin Inst.*, **189**, 779-80, 1920.

Helium was spectroscopically identified in the gas evolved by fusing brannerite with Na bisulfate. (See *Am. Min.*, **5**, 105.) E. F. H.

SILICEOUS SINTER FROM LUSTLEIGH, DEVON. A. B. Edge. *Mineral. Mag.*, **19**, [88] 10-13, 1920.

The material is hard and compact, either white or banded in various shades of red depending upon the amount of hematite included. In some instances the layers are folded and the material appears to have been deposited as a siliceous jelly which has hardened by loss of water. An analysis showed about 70% SiO_2 and 21% of H_2O. W. F. H.

THE FRENCH ECLOGITES, THEIR MINERALOGIC AND CHEMICAL COMPOSITION, AND ORIGIN. Y. BRIÈRE. *Bull. soc. franc. min.*, **43**, 72-222, 1920.

Contains a description of the pyroxene omphacite, an essential constituent of eclogites. It is green, colorless in thin sections, sometimes slightly pleochroic, plane of optic axes parallel to (010), $Z_{\wedge}c = 36°$, sign +, $2E = 140°$, sp. gr. 3.31. Analysis shows it to be high in alumina and soda, hence it may be called a jadeitic augite. E. F. H.

A NEW APERTOMETER. E. A. WÜLFING. *Sitzungsber. Heidelberger Akad. Wiss., Math.-naturw. Kl.*, **1917**, Abt. A, Abh. 2, 13 pp; thru *Mineralog. Abstr.*, **1**, 363.

The optic axial angle of an unknown substance or the numerical aperture of a microscope may be determined by using thin cleavage plates of mica, of such good quality that their interference figure in monochromatic convergent light is constant over the entire plate. The method of preparing such plates is given. E. F. H.

NUMERICAL APERTURE AND THE ANGLE OF THE OPTIC AXES. E. A. WÜLFING. *Sitzungsber. Heidelberger Akad. Wiss., Math.-naturw. Kl.* **1919**, Abt. A, Abh. 5, 18pp; thru *Mineralog. Abstr.*, **1**, 363.

The values of β, V, and of the numerical aperture $\beta \sin V$ of biaxial rock forming minerals are tabulated. A diagram is given for the graphical solution of the equation $U = \beta \sin V$ when two of the quantities U, V, β are given. E. F. H.

INVESTIGATION OF HALITE FOR PYROELECTRICITY. V. POSEJPAL. *Beitr. Kryst. Min.*, **1**, 257-60, 1918; thru *Mineralog. Abstr.*, **1**, 423.

Careful tests for pyroelectricity on halite, made with a delicate electrometer, gave negative results. E. F. H.

ON THE BASALTS OF THE "BLAUE KUPPE BEI ESCHWEGE" AND ADJACENT OCCURRENCES, AND THEIR CRISTOBALITE. PAUL RAMDOHR. *Centr. Min.*, **1920**, 33-36.

The basalt is fine grained and composed of olivine, augite, plag. feldsp., ores, apatite, a little biotite and hornblende. At the contact with the sandstone the blocks of the latter that have become engulfed in the basalt have been altered with the formation of new minerals, as cordierite, orth. and monocl. pyroxene, ores and feldspar. Pneumatolytic minerals are magnetite, specular hematite, cristobalite, tridymite, chalcedony, apatite, hypersthene, augite, feldspar, mica and titanite. Crystals of cristobalite are generally smaller than 1 mm., milky white, and occur in three habits. All become isotropic at 235-250°C. D. = 2.290-2.320; $n = 1.485$; birefringence = .0018. Interpenetration twins also occur and are shown to be due to distortion of different octahedral faces of two octahedrons in parallel position. OTTO VON SCHLICHTEN.

MINERALS AND ORES FROM SOUTH WEST AFRICA, ESPECIALLY FROM TSUMEB. O. PUFAHL. *Centr. Mineral.*, **1920**, 289-96.

See *Amer. Mineral.*, **6**, 140-1 (duftite). The following are described: Zn-rich tennantite, Zn 9.24-9.27%; mimetite (analysis); mottramite, two analyses, corrected mean: PbO 54.31, CuO 19.24, ZnO 0.18, MnO trace, V_2O_5 20.23, As_2O_5

2.16, H_2O 3.88, sp. gr. 5.9; cuprodescloizite, PbO 54.90, CuO 16.27, ZnO 3.51, Fe_2O_3 and MnO trace, V_2O_5 21.69, As_2O_5 1.36, H_2O 2.33, SiO_2 0.07, sum 100.13, sp. gr. 6.19. E. F. H.

SOME EXAMPLES OF "UNUSUAL" FELDSPAR TWINNING LAWS IN ALBITES OF THE GERMAN KERATOPHYRES. K. SCHLOSSMACHER. *Centr. Mineral.*, **1920**, 193-203.

Manebach, l'Esterel, and la Roc Tourne law twins were found in these rocks, as well as the more common types. E. F. H.

SOME USES AND EXTENSIONS OF THE IMBEDDING METHOD. K. SPANGENBERG. *Centr. Mineral.*, **1920**, 352-62, 406-14.

The following are discussed: (1) Quantitative det'ns by measurements on two boundaries of anisotropic grains. (2) Det'n of plagioclase by means of refractive index and the Becke method, using feldspar-quartz, f.-nephelite, and f.-balsam boundaries. (3) Det'n of the position of the plagioclase sections from the twinning lamellae. (4) Det'n of the indices of spherulites. (5) Absolute det'n of refraction by measurements on several boundaries. E. F. H.

THE OCCURRENCE OF ZINC BLENDE IN BASALT FROM BÜHL NEAR CASSEL. W. EITEL. *Centr. Mineral.*, **1920**, 273-85.

Inclusions of sphalerite were identified in this basalt. With it are quartz, pyrrhotite and some pyrite. The pyrite was disassociated to pyrrhotite, and some FeS went into solid soln. with ZnS Two analyses of the ferriferous sphalerite are given: FeS: ZnS=1:4 to 1:3. E. F. H.

THE MINERAL FACIES OF ROCKS. PENTTI ESKOLA. *Norsk Geologiske Tidsskrift*, **6**, 143-194, 1920.

An attempt to develop a natural classification of rocks, based on equilibrium relations of the minerals present. These minerals are termed critical when they are stable only in a given facies, and typical when they occur also in others. Rocks may contain unstable minerals, as relics of earlier stages in the crystallization of the magma, or as posterior (often inappropriately termed secondary). A rock of a given chemical composition may appear in any one of 5 facies, the critical minerals for each are respectively (starting with the surface conditions and ending with the most deeply seated ones): sanidine feldspar+clinoenstatite-diopside; hypersthene-diopside; chlorite-muscovite+epidote-albite; amphibole; and almandite-pyrope+jadeite-pyroxene. E. T. W.

INTERGROWTHS OF TOPAZ-GARNET AND RUTILE-HEMATITE. LAZARD CAHN. *Beitr. Kryst. Min.*, **2**, 7-9, 1919; thru *Mineralog. Absts.*, **1**, 343.

On garnet from Dugway, Utah a network of topaz needles in three sets were noted on each face of the tetragonal trisoctahedron. This regular grouping is very similar to that shown by rutile on hematite. E. F. H.

TOPAZ AND GARNET. V. GOLDSCHMIDT AND R. SCHRÖDER. *Beitr. Kryst. Min.*, **2**, 11-16, 1919; thru *Mineralog. Absts.*, **1**, 343.

(See preceding abstract.) The face *b* of topaz is parallel to *n* of the garnet;

on each *n*-face the topaz crystals of one of the three sets have their prism-zone parallel to the garnet zone *o n c*. Those of the other two sets are in twinned position with twin-planes *d*. E. F. H.

ITALITE, A NEW LEUCITE ROCK. HENRY S. WASHINGTON. *Am. J. Sci.*, **50**, 33-47, 1920.

Melanite garnet from this rock (locality Rocca Monfina, near Naples, Italy) contained 8.7% TiO_2, $n=1.94$. Other new detns. are: melanite, Beaver Creek, Colo., TiO_2 5.08, n 1.95; schorlomite, Magnet Cove, Ark., $TiO_2=16.90$, $n=1.94$; ivaarite, Kuusamo, Finland, $TiO_2=18.98$, $n=2.01$; melanite, East Rock, Conn., TiO_2 none, $n=1.86$-1.88. E. F. H.

THE BINARY SYSTEM ÅKERMANNITE-GEHLENITE. J. B. FERGUSON AND A. F. BUDDINGTON. *Am. J. Sci.*, **50**, 131-40, 1920.

The binary system $2CaO.MgO.2SiO_2$ (åkermannite) and $2CaO.Al_2O_3.SiO_2$ (gehlenite) was studied by the quenching method, and found to form a complete series of solid solns. with a minimum melting point. The opt. properties are continuous functions of the composition. Pure gehlenite, $\omega=1.669$, $\epsilon=1.658$,—, elong. γ; åkermannite, $\omega=1.632+$, $\epsilon=1.639+$, +, elong. α. There is an intermediate isotropic compound. The densities also vary directly with the composition: gehlenite, xls. 3.038, glass 2.884; åkermannite, xls. 2.944, glass 2.955. E. F. H.

RUTILE FROM TRAVERSELLA. F. P. MÜLLER. *Beitr. Kryst. Min.*, **1**, 159-65, 1919; thru *Mineralog. Absts.*, **1**, 344.

Rutile is abundant in glaucophane schists at Traversella, Piedmont. In quartz lenses are nests of large crystals (up to 8cm.). The faces are much striated, by secondary lamellar twinning on *e*(101). E. F. H.

REALGAR FROM JOACHIMSTAL (BOHEMIA). Fr. BÜCHLER and V. GOLDSCHMIDT. *Beitr. Kryst. Min.*, **1**, 181, 1918; thru *Mineralog. Absts.*, **1**, 344.

One crystal showing ten forms is described. Realgar is not common here. E. F. H.

MINERALS NEW TO ONTARIO. *Ann. Rpt. Ont. Bur. Mines*, **28**, 90-5, 1919.

ELATERITE. (C. W. KNIGHT)—This mineral is found associated with barite, calcite and fluorite at Madoc. The origin is obscure.

KALGOORLITE; COLORADOITE. (A. G. BURROWS)—Rich gold ores from the Tough-Oakes mine, Kirkland Lake, contained gold, calaverite, altaite, and (new for Canada) kalgoorlite and coloradoite. Other tellurides which have been recognized in Ontario are tetradymite, petzite, and hessite.

A NEW DISCOVERY OF PITCHBLENDE. (C. W. KNIGHT)—Pitchblende with $U_3O_8=74.98\%$ has been found in Butt township, east of Georgian Bay. It occurs in a pegmatite with feldspar, quartz, mica, tourmaline, and other minerals unidentified. E. F. H.