

INDEX TO VOLUME 49

Only leading articles are set in
bold face type.

Abernathyite, the crystal structure of, torbernite minerals, studies of the, (I): and the structurally related compounds $\text{NH}_4(\text{UO}_2\text{AsO}_4) \cdot 3\text{H}_2\text{O}$ and $\text{K}(\text{H}_3\text{O})(\text{UO}_2\text{AsO}_4)_2 \cdot 6\text{H}_2\text{O}$	1578
Absorption correction for the displacement of lines in a powder photograph, a modified graphical method of (Viswanathan).....	1474
Accessory minerals in some granitic rocks in California and Nevada as a function of calcium content (Lee, Dodge) ..	1660
Adams, J. W., Staatz, M. H. and Havens, R. G. Cenosite from Porthill, Idaho.....	1736
Addison, W. E. (Book review)...	1503
Adler, H. H. Infrared spectra of phosphate minerals: Symmetry and substitutional effects in the pyromorphite series	1002
Adler, I. with Evans, H. T. Jr., Milton, C., Chao, E. C. T., Mead, C., Ingram, B. and Berner, R. A.....	1497
Advances in structure research by diffraction methods; Fortschritte der Strukturfor- schung mit Beugungsmetho- den (Book review).....	1779
Albee, A. L. with Zen, E-an, Coex- istent muscovite and parago- nite in pelitic schists	904
Albite and oligoclase, coexisting, in some schists from New Zealand (Evans).....	173
Alkali feldspars of the Tatoosh pluton in Mount Rainier Na- tional Park (Wright)	715
Allanite, variation of some rare earths in (Frondel)	1159
Allanite in the Tan-y-Grisiau microgranite, Merionetshire, North Wales (Bromley)....	1747
Allevardite (Brown, Weir)....	446
Allgemeine Mineralogie (Brauns, Chudoba) (Book review)....	450
Alumoferroascharite (Shabynin, Mityushina).....	1501
Alunogen from New South Wales, some properties of (Bayliss).	1763
Ames, L. L. Jr. Some zeolite equi- libria with alkali metal ca- tions	127
——— Some zeolite equilibria with alkaline earth metal ca- tions.....	1099
Aminoffite, x-ray powder data for (Mandarino).....	212
Ammonium in alkali feldspars (Barker)	851
Amphiboles, mineralogy and para- genesis of, from Gibson Peak pluton, northern California (Lipman)	1321
Amstutz, G. C. with Straumanis, M. E. and Chan, S. Lattice parameters and expansion co- efficients of FeS_2 (natural and synthetic), and of CoS_2 .	206
Analytical chemistry of niobium and tantalum (Moshier) (Book review).....	1504
Anatase, pseudomorphs of, after sphene from Roanoke County, Virginia (Mitchell)	1136
Ancylyte (Saabo).....	1154
Andersen, C. A. with Fredriksson, K. Electron probe analyses of copper in meneghinite...	1467
——— with Nagy, B. Electron probe microanalysis of some carbonate, sulfate, and phos- phate minerals in the Orgueil meteorite.....	1730
Angino, E. E. Some effects of pressure on the thermolumi- nescence of amblygonite, pectolite, orthoclase, scapo- lite and wollastonite	387
Ankinovich, E. A.....	1774
———, Gekht, I. I. and Zaitseva, R. I.....	441
Anorthite, optical extinction of, at	

- high temperatures (Bloss) 1125
- Aoki, K.** Clinopyroxenes from alkaline rocks of Japan 1199
- Apatite, manganiferous 1778
- Apatites, alkali carbonate, the nature of (Simpson)** 363
- Appleman, D. E.** with Ross, M. and Evans, H. T., Jr. Studies of the torbernite minerals (II): the crystal structure of meta-torbernite 1603
- Aridity and Man (Hodge, Duisberg) (Book review) 826
- Arseniopleite (Henriques) 447
- Asbestos, on the occurrence of, in Chamoli, U.P., India (Prakash, Dalela) 424
- Atherton, M. P.** Garnet isograd in pelitic rocks and its relation to metamorphic facies 1331
- Augite, use of the Angle A_1/c in optical determination of the composition of (Ruegg)** 599
- Azurite and malachite, thermal stability of (Simpson, Fisher, Libsch) 1111
- Bagchi, S. N. with Hosemann, R. (Book review) 215
- Bahezre, C. with Nowacki, W. 446
- Baird, A. K.** with Welday, E. E., McIntyre, D. B. and Madlem, K. W. Silicate sample preparation for light-element analyses by x-ray spectrography 889
- Baker, W. E.** Mineral equilibrium studies of the pseudomorphism of pyromorphite by hinsdalite 607
- Bandy, Mark Chance, memorial of (Switzer) 464
- Bariand, P. and Herpin, P. 447
- Barker, D. S.** Ammonium in alkali feldspars 851
- Barker, F.** Sapphirine-bearing rock, Val Codera, Italy 146
- Barns, R. L. with Rubinstein, C. B. Crystallographic data for rare earth-aluminum garnets 1489
- Barsanovite (Dorfman, Ilkhin, Burora) 1153
- Barysilite, new data on (Glasser) 1485
- Bastnaesite (Saebo) 1154
- Baur, G. S. with Montoya, J. W. and Wilson, S. R. 1497
- Baur, W. H.** On the cation and water positions in faujasite 697
- Bayerite (Gross, Heller) 819
- Bayliss, P. Some properties of alunogen from New South Wales 1763
- Bearth, P. with Zen, E-an, and Ross, M. Paragonite from Täsch Valley near Zermatt, Switzerland 183
- Beke, B. and Tamás F. (Book review) 217
- Belov, N. V. (Book review) 1505
- Bementite (Kato) 446
- Berezovite 1501
- Berner, R. A. with Evans, H. T. Jr., Milton, C., Chao, E. C. T., Adler, I., Mead, C., and Ingram, B. 1497
- Best, M. G. and Weiss, L. E.** Mineralogical relations in some pelitic hornfelses from the southern Sierra Nevada, California 1240
- Bezsmertnaya, M. S. and Soboleva, L. N. 818
- Biotite mica effect in x-ray spectrographic analysis of pressed rock powders (Volborth)** 634
- Birle, J. D. with Ehlers, E. G. Electropolishing of pyrite 800
- Biscaye, P. E.** Distinction between kaolinite and chlorite in Recent sediments by x-ray diffraction 1281
- Bloss, F. D. Optical extinction of anorthite at high temperatures 1125
- and Gibbs, G. V. Reply to "Discussion of 'Cleavage in quartz'" 436
- Boesen, R. S.** Clinopyroxenes of a monzonitic complex at Mount Dromedary, New South

- Wales 1435
- Bonanza west, the story of western mining rushes, 1848-1900 (Greever, W. S.) (Book review) 218
- Borley, G. and Frost, M. T. 817
- Bornites, sulfur-rich (Brett, Yund)** 1084
- Bown, M. G. Recalculation of pyroxene analyses 190
- with Vincent, E. A. and Douglas, J. A. V. Note on the revised composition of two olivines from the Skaergaard intrusion, East Greenland 805
- Boyer, R. E. (Book review) 825
- Bradley, W. F. (Book review) 827, 1156
- Bradley, W. H. Lazurite, talc and chlorite in the Green River formation of Wyoming 778
- Braitsch, O. (Book review) 1155
- Braun, H. 822
- Brauns, R. and Chudoba, K. F. 450
- Brett, R. and Yund, R. A. Sulfur-rich bornites** 1084
- Briggs, L. I. (Book review) 451
- Brindley, G. W. and Ray, S. Complexes of Ca-montmorillonite with primary monohydric alcohols (Clay-organic studies-VIII)** 106
- with DeKimpe, C. and Gastuche, M. C. Low-temperature syntheses of kaolin minerals 1
- with de Souza Santos, P. and de Souza Santos, H. L. Mineralogical studies of kaolinite-halloysite clays: Part II. Some Brazilian kaolins 1543
- Britholite (Tarkhanova, Sidorenko, Kuznetsova) 1501
- Britholite-apatite series, a thorian intermediate member of the (Hughson, Sen Gupta)** 937
- Bromley, A. V. Allanite in the Tan-y-Grisiau microgranite, Merionethshire, North Wales 1747
- Brown, G. and Weir, A. H. 446
- Buddingtonite, an ammonium feldspar with zeolitic water (Erd, White, Fahey, Lee)** 831
- Buerger, M. J. (Book review) 215
- Burora, T. A. with Dorfman, M. D. and Ilokhin, V. V. 1153
- Buseck, P. R. Discussion of "Pyrrhotite measurement" by Groves and Ford, *Am. Mineral.* **48**, 911-913 1491
- Bykov, A. D. 1774
- Bykova, A. V. with Kalita, A. P. and Kukharchik, M. V. 440
- Calciborite (Malinko, Kuznetsova, Pensionerova, Rybakova) 820
- Calcurmolite 1152
- Carbonate-cyanotrichite (Ankinovich, Gekht, Zaitseva) 441
- Carpenter, R. H. and Desborough, G. A. Range in solid solution and structure of naturally occurring troilite and pyrrhotite** 1350
- Caryopilite (Kato) 446
- Catapleite, calcium (Portnov) 1153
- Čech, F., Paděra, K. and Povondra, P. 1499
- and Povondra, P. 1497, 1499
- , Povondra, P., and Slansky, E. 445
- Celadonite: synthesis, thermal stability and occurrence (Wise, Eugster)** 1031
- Celsian, BaAl₂Si₂O₈, phase relations between cymrite, BaAlSi₃O₈(OH), and (Seki, Kennedy)** 1407
- Cenosite from Porthill, Idaho (Adams, Staatz, Havens) 1736
- Chalcomenite, x-ray powder data for teineite and (Mandarino) 1481
- Chamosite, iron-rich serpentine and, from Ely, Minnesota (Ruotsala, Pfluger, Dow)** 993
- Chan, S. with Straumanis, M. E. and Amstutz, G. C. Lattice parameters and expansion coefficients of FeS₂ (natural and synthetic) and of CoS₂ 206
- Chang, L. L. Y. Synthesis of MBa(CO₃)₂ compounds 1142

- Changing science of mineralogy (Hurlbut, Wenden) (Book review)..... 1506
- Chao, E. C. T. with Evans, H. T., Jr., Milton, C., Adler, I., Mead, C., Ingram, B. and Berner, R. A..... 1497
- Chapmanite (Čech, Povondra).... 1499
- Chase, A. B. and Osmer, J. A. Synthesis of thorianite crystals from bismuth oxide-lead fluoride melts..... 1469
- Chernov, V. I. with Krol, O. F., Shipovalov, Yu. V. and Khan, G. A..... 1775
- Chlorite, determination of the heavy atom content in, by means of the x-ray diffractometer (Petruk)..... 61
- Chlorite-vermiculite, regularly interstratified, as a weathering product of chlorite in a soil, occurrence of (Johnson).... 556
- Christie, O. H. J..... 451
- Chromatite (Eckhardt, Heimbach)..... 439
- Chromite, zincian, from Outokumpu, Finland (Thayer, Milton, Dinnin, Rose)..... 1178
- Chromsteigerite (Ankinovich).... 1774
- Chrysoberyl, ordering of Fe and Cr in (Newham, Santoro, Pearson, Jansen)..... 427
- Chrysotile, x-ray study of (Irsanović, Pavlović)..... 1769
- Chrysotile asbestos, the concentration and study of the interstitial material in (Martinez, Comer)..... 153
- Chudoba, K. F. with Brauns, R. 450
- Clark, G. W. with Finch, C. B. and Harris, L. A. Thorite → huttonite phase transformation as determined by growth of synthetic thorite and huttonite single crystals..... 782
- Clark, J. R. The crystal structure of tunellite, $\text{SrB}_2\text{O}_9(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ 1549
- Classifying analyses with any number of terms, a method of (Mertie)..... 1306
- "Cleavage in quartz" by F. D. Bloss and G. V. Gibbs, discussion of (Hoffer)..... 435
- 'Cleavage in quartz,' "reply to "Discussion of (Bloss, Gibbs) 436
- Clinopyroxenes from alkaline rocks of Japan (Aoki)..... 1199
- from eclogites and basic granulites (White)..... 883
- of a monzonitic complex at Mount Dromedary, New South Wales (Boesen)..... 1435
- Coesite and stishovite, recovery of, from Coconino sandstone of Meteor Crater, Arizona (Fahey)..... 1643
- Comer, J. J. with Martinez, E. The concentration and study of the interstitial material in chrysotile asbestos..... 153
- Copper and iron oxides, anhydrous, stable mineral assemblages of (Yund, Kullerud).. 689
- Cosalite (Rieder)..... 1501
- Cossyrite..... 821
- Crowley, M. S. and Roy, R. Crystalline solubility in the muscovite and phlogopite groups 348
- Crystal chemistry of large-cation silicates (Belov) (Book review)..... 1505
- Cumingtonite-grunerite series: A chemical, optical and x-ray study (Klein)..... 963
- Cymrite, $\text{BaAlSi}_3\text{O}_8(\text{OH})$, and celsian, $\text{BaAl}_2\text{Si}_2\text{O}_8$, phase relations between (Seki, Kennedy)..... 1407
- Cymrite in a copper deposit, Brooks Range, Alaska (Runnells)..... 158
- Dalela, I. K. with Prakash, D. On the occurrence of asbestos in Chamoli, U. P., India..... 424
- Data for x-ray analysis charts for solution of Bragg's equation (Parrish and Mack) (Book

- review)..... 1780
- Datolite group, unnamed minerals of (Semenov, Dusmatov, Samsonova)..... 443
- Davidite (Zhabin, Voronkov, Khalezova, Kazakova)..... 447
- Daviesite..... 1501
- Deer, W. A., Howie, R. A. and Zussman, J..... 825
- Deffeyes, K. S. Azimuthally dispersed polarized light..... 165
- DeKimpe, C., Gastuche, M. C. and Brindley, G. W. Low-temperature syntheses of kaolin minerals..... 1
- Denning, R. M. Selected properties of neutron irradiated diamond..... 72
- and Poindexter, E. H. Crystallographic implications of EPR in neutron-irradiated diamond..... 277
- Dent Glasser, L. S. with Glasser, F. P. Additional notes on margarosanite..... 781
- de Souza Santos, H. L. with de Souza Santos, P., and Brindley, G. W. Mineralogical studies of kaolinite-halloysite clays: Part II. Some Brazilian kaolins..... 1543
- de Souza Santos, P., de Souza Santos, H. L. and Brindley, G. W. Mineralogical studies of kaolinite-halloysite clays: Part II. Some Brazilian kaolins..... 1543
- de V. de Kock with Pieterse, J. J. Mertie's analytic classification and quadriplanar charting of analyses with nine or more components..... 808
- Desborough, G. A. with Carpenter, R. H. Range in solid solution and structure of naturally occurring troilite and pyrrhotite..... 1350
- Diamond, neutron-irradiated, crystallographic implications of EPR in (Denning, Poindexter)..... 277
- , neutron irradiated, selected properties of (Denning) 72
- Differential thermal analysis in closed systems at high hydrostatic pressures (Harker).... 1741
- Dinnin, J. I. (Book review).... 1504
- with Thayer, T. P., Milton, C. and Rose, H., Jr. Zircian chromite from Outokumpu, Finland..... 1178
- Direct analysis of diffraction by matter (Hosemann, Bagchi) (Book review)..... 215
- Dodge, F. C. W. with Lee, D. E. Accessory minerals in some granitic rocks in California and Nevada as a function of calcium content..... 1660
- Dolerite, in the Deep River Basin, North Carolina, a quantitative petrographic study of (Hermes)..... 1718
- Donnay, G. (Book review). 1503, 1779
- Deriving the formula of a mineral from its chemical analysis..... 1490
- with Hardie, L. A., Munoz, J. L. and Donnay, J. D. H. Morphological analysis of hodgkinsonite..... 415
- Donnay, J. D. H. Presentation of the 1963 Mineralogical Society of America Award to Nobuo Morimoto..... 459
- with Hardie, L. A., Munoz, J. L. and Donnay, G. Morphological analysis of hodgkinsonite..... 415
- Dorfman, M. D., Ilkikhin, V. V. and Burora, T. A..... 1153
- Douglas, J. A. V. with Vincent, E. A. and Bown, M. G. Note on the revised composition of two olivines from the Skaergaard intrusion, East Greenland..... 805
- Dow, G. M. with Ruotsala, A. P. and Pfluger, C. E. Iron-rich serpentine and chamosite

- from Ely, Minnesota 993
- Drits, V. A. with Frank-Kamenetskii, V. A. and Logvinenko, N. V. 816
- and Kossovskaya, A. G. 444
- Duisberg, P. C. with Hodge, C. 826
- Duke, D. A. and Stephens, J. D.**
Infrared investigation of the olivine group minerals 1388
- Dusmatov, V. D. with Semenov, E. I. and Samsonova, N. S. 443
- Dutra, C. V. with Herz, N.** Geochemistry of some kyanites from Brazil 1290
- Dybek, J. (Book review) 216
- Dzhalindite (Genkin, Murav'eva) 439
- Eberly, P. E., Jr.** Adsorption properties of naturally occurring erionite and its cationic-exchanged forms 30
- Eckhardt, F. J. and Heimbach, W. 439
- Ectopite (Kato) 446
- Edgar, A. D.** Phase equilibrium relations in the system $\text{CaMgSi}_2\text{O}_6$ (diopside)- $\text{NaAlSi}_3\text{O}_8$ (nepheline)- $\text{NaAlSi}_3\text{O}_8$ (albite)- H_2O at 1,000 kg/cm² water vapor pressure 573
- A note on the lattice parameters of nepheline hydrate I 1139
- Ehlers, E. G. and Birle, J. D. Electropolishing of pyrite ... 800
- Ektropite (Kato) 446
- Eitel, W. (Book review) 217, 822, 823, 824
- Elementary course in a changing mineralogy (Hurlbut)** 227
- Elements of structural geology (Hills) (Book review) 824
- Emeralds, a distinction between natural and synthetic (Sunagawa) 785
- Emerson, D. O. Absence of optically positive potash feldspar in the Inyo Mountains, California-Nevada 194
- Modal variations within granitic outcrops 1224
- Empressite and stuetzite redefined (Honea)** 325
- Enargite in the zinc-lead deposits of the Upper Mississippi Valley district (Heyl) 1458
- Enigmatite 821
- Entstehung und Stoffbestand der Salzlagerstätten (Braitsch) (Book review) 1155
- Erd, R. C., White, D. E., Fahey, J. J. and Lee, D. E.** Buddingtonite, an ammonium feldspar with zeolitic water 831
- with Skinner, B. J. and Grimaldi, F. S. Greigite, the thio-spinel of iron; a new mineral 543
- Erionite, naturally occurring, and its cationic-exchanged forms, adsorption properties of (Eberly) 30
- Eschman, D. F. (Book review) ... 826
- Etch pits, anomalous, in minerals, on the origin of (Fleischer, Price, Symes) 794
- Eugster, H. P. (Book review) ... 1155
- with Wise, W. S. Celadonite: synthesis, thermal stability and occurrence 1031
- Evaluation of infrared spectrometry for compositional analysis of lunar and planetary soils (Lyon) (Book review) ... 823
- Evans, B. W. Coexisting albite and oligoclase in some schists from New Zealand 173
- Evans, H. T., Jr., Milton, C., Chao, E. C. T., Adler, I., Mead, C., Ingram, B. and Berner, R. A. 1497
- with Ross, M. Studies of the torbernite minerals (I): The crystal structure of abernathyite and the structurally related compounds $\text{NH}_4(\text{UO}_2\text{AsO}_4) \cdot 3\text{H}_2\text{O}$ and $\text{K}(\text{H}_3\text{O})(\text{UO}_2\text{AsO}_4)_2 \cdot 6\text{H}_2\text{O}$... 1578
- with Ross, M. and Appleman, D. E. Studies of the

- torbernite minerals (II): the crystal structure of meta-torbernite 1603
- Extinction and 2V: a simple stereographic solution of general application (Tocher) 1622
- Fahey, J. J. Recovery of coesite and stishovite from Coconino sandstone of Meteor Crater, Arizona 1643
- with Erd, R. C., White, D. E., and Lee, D. E. Buddingtonite, an ammonium feldspar with zeolitic water 831
- Faheyite, crystallography of, Sapucaia pegmatite mine, Minas Gerais, Brazil (Lindberg) 395
- Faujasite, on the cation and water positions in (Baur) 697
- Faust, G. T. (Book review) 825
- Femaghastingsite (Borley, Frost) 817
- Ferutite (Zhabin, Voronkov, Khalezova and Kazakova) 447
- Filice, A. with Speed, R. Quartz glass pressure vessels for hydrothermal studies 1114
- Finch, C. B., Harris, L. A. and Clark, G. W. Thorite→huttonite phase transformation as determined by growth of synthetic thorite and huttonite single crystals 782
- Fisher, D. J. Lithian hureaulite from the Black Hills 398
- Fisher, R. with Simpson, D. R. and Libsch, K. Thermal stability of azurite and malachite 1111
- Fleischer, M. New Mineral Names 439, 816, 1151, 1497, 1774
- Fleischer, R. L., Price, P. B. and Symes, E. M. On the origin of anomalous etch pits in minerals 794
- Flinter, B. H. Re-examination of "struverite"—a further note 792
- Fluorite from the Badu pegmatite, Llano County, Texas (Greenwood) 1766
- Ford, R. J. with Groves, D. I. Reply to "Discussion of 'Pyrrhotite Measurement' " 1496
- Formula of a mineral from its chemical analysis, deriving the (Donnay) 1490
- Fornacite (Bariand, Herpin) 447
- Forsterite crystals, growth of, in a reactive crucible (Jordan, Naughton) 806
- Frank-Kamenetskii, V. A., Logvinenko, N. V. and Drits, V. A. 816
- Frederiksson, K. and Andersen, C. A. Electron probe analyses of copper in meneghinite 1467
- Freed, R. L. An x-ray study of sursassite from New Brunswick 168
- Fron del, J. W. Variation of some rare earths in allanite 1159
- Frost, M. T. with Borley, G. 817
- Fuchang, with Liu, C., Liu, T., Li, C., Sun, M. and Lu, W. 1777
- Gabrielson, O. with Geijer, P. 1778
- Galena 1501
- Garnet isograd in pelitic rocks and its relation to metamorphic facies (Atherton) 1331**
- Garnets, rare earth-aluminum, crystallographic data for (Rubinstein, Barns) 1489
- Garske, D. with Peacor, D. R. Sarcopside from Deering and East Alstead, New Hampshire 1149
- Gastuche, M. C. with DeKimpe, C. and Brindley, G. W. Low-temperature syntheses of kaolin minerals 1**
- Gaufrey, C., Jouravsky, C. and Permingeat, F. 817
- Gaudette, H. E. Magnesium vermiculite from the Twin Sisters Mountains, Washington 1754
- Gaudin, A. M. (Book review) 450
- Gehlen, K. v. with Piller, H. On errors of reflectivity meas-**

- urements and of calculations
 of refractive index n and ab-
 sorption coefficient k 867
 Geijer, P. and Gabrielson, O. 1778
 Gekht, I. I. with Ankinovich,
 E. A. and Zaitseva, R. I. 441
 Genkin, A. D. and Murav'eva,
 I. V. 439
 Gersbyite (Geijer, Gabrielson) 1778
 Gibbs, G. V. with Bloss, F. D.
 Reply to "Discussion of
 'Cleavage in quartz'" 436
 Ginzburg, A. I. (Book review) 216
 Glasser, F. P. New data on barysi-
 lite 1485
 ——— and Dent Glasser, L. S.
 Additional notes on margaro-
 sanite 781
**Glaucanites: cation exchange cap-
 acities and infrared spectra
 (Manghnani, Hower)** 586
 ———: cation exchange capaci-
 ties and infrared spectra.
 Part II. Infrared absorption
 characteristics of glaucanites
 (Manghnani, Hower) 1631
 Glucine (Grigoriev) 1152
 Gnomonic projector (Hawes) 180
**Goldmanite, a vanadium garnet
 from Laguna, New Mexico
 (Moench, Meyrowitz)** 644
 Goongarite (Rieder) 1501
 Granger, H. G. 439
**Grantsite, a new hydrated sodium
 calcium vanadate from New
 Mexico, Colorado, and Utah
 (Weeks, Lindberg, Truesdell,
 and Meyrowitz)** 1511
 Granulometrische und morpho-
 metrische Messmethoden an
 Mineralkörnern, Steinen und
 sonstigen Stoffen (Köster)
 (Book review) 1504
 Green River formation of Wyom-
 ing, lazurite, talc and chlorite
 in the (Bradley) 778
 Greenwood, R. Fluorite from
 the Badu pegmatite, Llano
 County, Texas 1766
 Greever, W. S. (Book review) 218
**Greigite, the thio-spinel of iron; a
 new mineral (Skinner, Erd,
 Grimaldi)** 543
 Grigoriev, N. A. 1152, 1776
**Grimaldi, F. S. with Skinner,
 B. J. and Erd, R. C. Greigite,
 the thio-spinel of iron; a new
 mineral** 543
**Grisafe, D. A. and White, W. B.
 Phase relations in the system
 PbO-CO₂ and the decomposi-
 tion of cerussite** 1184
 Gross, S. and Heller, L. 819
 Groves, D. I. and Ford, R. J.
 Reply to "Discussion of 'Pyr-
 rhotite Measurement'" 1496
**Growth spirals on phlogopite crys-
 tals (Sunagawa)** 1427
 ——— on prism faces of cultured
 quartz (Joshi, Vagh) 1769
**Halloysite, surface tension and
 the morphology of (Hope,
 Kittrick)** 859
**Hamblin, W. K. and Salotti, C. A.
 Stereoscopic radiography in
 the study of ore textures** 17
 Handbook of subsurface geology
 (Moore) (Book review) 451
 Hardie, L. A., Munoz, J. L.,
 Donnay, G. and Donnay,
 J. D. H. Morphological anal-
 ysis of hodgkinsonite 415
 Harker, R. I. Differential thermal
 analysis in closed systems at
 high hydrostatic pressures 1741
 Harris, L. A. with Finch, C. B.
 and Clark, G. W. Thorite→
 huttonite phase transforma-
 tion as determined by growth
 of synthetic thorite and hut-
 tonite single crystals 782
 Hatch, F. H., Wells, A. K. and
 Wells, M. K. 449
 Hatchite (Nowacki, Bahezre) 446
 Havens, R. G. with Adams, J. W.
 and Staatz, M. H. Cenosite
 from Porthill, Idaho 1736
 Hawes, L. L. A gnomonic projec-

- tor 180
- Hawthorne, J. M. with McAtee, J. L., Jr. Heating-oscillating x-ray diffraction studies of some organo-montmorillonites 247
- Hay, R. L. Phillipsite of saline lakes and soils 1366
- Heavy media column separation: a new technique for petrographic analysis (Woo) 116
- Heimbach, W. with Eckhardt, F. J. 439
- Heinrich, E. Wm. Notes on western mineral occurrences 430
- (Book review) 216, 218, 219, 451
- Helfferich, F. A simple identification reaction for zeolites (molecular sieves) 1752
- Heller, L. with Gross, S. 819
- Henriques, A. 447
- Hermes, O. D. A quantitative petrographic study of dolerite in the Deep River Basin, North Carolina 1718
- Herpin, P. with Bariand, P. 447
- and Pierrot, R. 816
- Herz, N. and Dutra, C. V. Geochemistry of some kyanites from Brazil 1290
- Hey, M. H. 818, 1498, 1501
- Heyl, A. V. Enargite in the zinc-lead deposits of the Upper Mississippi Valley district ... 1458
- Hills, E. S. 824
- Hinsdalite, mineral equilibrium studies of the pseudomorphism of pyromorphite by (Baker) 607
- Hodge, C. and Duisberg, P. C. ... 826
- Hodgkinsonite, morphological analysis of (Hardie, Munoz, Donnay, Donnay) 415
- Hoffer, A. Discussion of "Cleavage in quartz" by F. D. Bloss and G. V. Gibbs 435
- Högbomite (McKie) 445
- Honea, R. M. Empressite and stuetzite redefined 325
- Hope, E. W. and Kittrick, J. A. Surface tension and the morphology of halloysite 859
- Hornblendes, relation of atomic constitution to lattice parameters in some, from the Black Hills, South Dakota (Raychaudhuri) 198
- Hornfels, mineralogical relations in some pelitic, from the southern Sierra Nevada, California (Best, Weiss) ... 1240
- Hosemann, R. and Bagchi, S. N. (Book review) 215
- Howard-White, F. B. (Book review) 219
- Hower, J. with Manghnani, M. H. Glauconites: cation exchange capacities and infrared spectra 586
- with Manghnani, M. H. Glauconites: cation exchange capacities and infrared spectra. Part II. Infrared absorption characteristics of glauconites 1631
- Howie, R. A. with Deer, W. A. and Zussman, J. 825
- Hsieh, H. with Tu-Chih, K., Li, H. and Yin, S. 1776, 1777
- Hughson, M. R. and Sen Gupta, J. G. A thorian intermediate member of the britholite-apatite series 937
- Huntite (Paděra, Povondra) 1502
- Hureaulite, lithian, from the Black Hills (Fisher) 398
- Hurlbut, C. S., Jr. The elementary course in a changing mineralogy 227
- and Wenden, H. E. (Book review) 1506
- Hydrocatapleite (Semenov, Tikhonenkov) 443
- Ikaite (Pauly) 439
- Illite, determination, rapid, quantitative, in polycomponent mixtures (Lapham, Jaron) ... 272
- Ilokhin, V. V. with Dorfman, M. D. and Burora, T. A. 1153

- Imgreite (Yushko-Zakharova) 1151
Immersion liquids of relatively strong dispersion in the low refractive index range (1.46 to 1.51) (Wilcox) 683
 Indite (Genkin, Murav'eva) 439
Infrared spectra-crystal structure correlations: II. Comparison of simple polymorphic minerals (White, Roy) 1670
 Ingram, B. with Evans, H. T., Jr., Milton, C., Chao, E. C. T., Adler, I., Mead, C. and Berner, R. A. 1497
 Introduction to clay colloid chemistry (van Olphen) (Book review) 1156
 Introduction to crystallography (Philips) (Book review) 1506
 Introduction to the theory of flotation (Klassen, Mokrovsov) (Book review) 450
 Iriginite from South Dakota (Stephenson) 408
 Irganović, I. and Pavlović, S. X-ray study of chrysotile 1769
Ixiolite and other polymorphic types of FeNbO_4 (Roth, Waring) 242

 Jackson, M. L. with Kiely, P. V. Selective dissolution of micas from potassium feldspars by sodium pyrosulfate fusion of soils and sediments 1648
 Jambor, J. L. and Traill, R. J. 820
 James, H. L. (Book review) 822
 Jansen, C. with Newnham, R., Pearson, J. and Santoro, R. Ordering of Fe and Cr in chrysoberyl 427
 Jaron, M. G. with Lapham, D. M. Rapid, quantitative illite determination in polycomponent mixtures 272
 Joel, N. and Muir, I. D. Extinction measurements for the determination of 2V with the universal stage 286
 Johnson, L. J. Occurrence of regularly interstratified chlorite-vermiculite as a weathering product of chlorite in a soil 556
 Jordan, W. and Naughton, J. J. Growth of forsterite crystals in a reactive crucible 806
 Joshi, M. A. and Vagh, A. S. Growth spirals on prism faces of cultured quartz 1771
 Jouravsky, C. with Gaudefroy, C. and Permingeat, F. 817

 Kalita, A. P. 440
 ——— Bykova, A. V. and Kukharchik, M. V. 440
Kaolin minerals, low-temperature syntheses of (DeKimpe, Gastuche, Brindley) 1
 ——— reduction of orientation effects in the quantitative x-ray diffraction analysis of (Niskanen) 705
Kaolinite-halloysite clays: mineralogical studies of, Part II some Brazilian kaolins (de Souza Santos, de Souza Santos, Brindley) 1543
Kaolinite and chlorite, distinction between, in Recent sediments by x-ray diffraction (Biscaye) 1281
 Kato, T. 446
 Kazakova, M. E. with Zhabin, A. G., Voronkov, A. A. and Khalezova, E. B. 447
 Kehoeite (McConnell) 1500
Kennedy, G. C. with Seki, Y. An experimental study on the leucite-pseudoleucite problem 1267
 ——— with Seki, Y. Phase relations between cymrite, $\text{BaAlSi}_3\text{O}_8(\text{OH})$, and celsian, $\text{BaAl}_2\text{Si}_2\text{O}_8$ 1407
 ——— with Seki, Y. The breakdown of potassium feldspar (KAlSi_3O_8) at high temperatures and high pressures 1688
 Khalezova, E. B. with Zhabin, A. G., Voronkov, A. A. and

- Kazakova, M. E. 447
- Khan, G. A. with Krol, O. F., Chernov, V. I. and Shipovalov, Yu. V. 1775
- Khomyakov, A. P., Stepanov, V. I., Moleva, V. A. and Pudovkina, Z. V. 1774
- Kiely, P. V. and Jackson, M. L. Selective dissolution of micas from potassium feldspars by sodium pyrosulfate fusion of soils and sediments. 1648
- Kirchheimer, F. (Book review) 216
- Kittrick, J. A. with Hope, E. W. Surface tension and the morphology of halloysite. 859
- Klassen, V. I. and Mokrovsov, V. A. 450
- Kleber, W. 822
- Klein, C., Jr. Cumingtonite-grunerite series: A chemical, optical and x-ray study. 963
- Knipovich, Yu. N., Komkov, A. I. and Nefedov, E. I. 442
- Komkov, A. I. with Knipovich, Yu. N. and Nefedov, E. I. 442
- Korzhinskite (Malinko) 441
- Kosovskaya, A. G. with Drits, V. A. 444
- Köster, E. (Book review) 1504
- Kraus, E. H. (Book review) 450
- Kristallchemie (Kleber) (Book review) 822
- Krol, O. F., Chernov, V. I., Shipovalov, Yu. V. and Khan, G. A. 1775
- Krstanović, I. X-ray investigation of zircon crystals containing OH groups. 1146
- Kukharchik, M. V. with Kalita, A. P. and Bykova, A. V. 440
- Kullerud, G. with Yund, R. A. Stable mineral assemblages of anhydrous copper and iron oxides. 689
- Kuznetsova, N. N. with Malinko, S. V., Pensionerova, V. M. and Rybakova, L. I. 820
- with Tarkhanova, G. A. and Sidorenko, G. A. 1501
- Kyanite (Geijer, Gabrielson) 1778
- Kyanites, geochemistry of some, from Brazil (Herz, Dutra) 1290
- Landesite, investigations of (Moore) 1122
- Langite, a new occurrence of (Williams) 1143
- Lapham, D. M. and Jaron, M. G. Rapid, quantitative illite determination in polycomponent mixtures. 272
- Lattice parameters and expansion coefficients of FeS₂ (natural and synthetic) and of CoS₂ (Straumanis, Amstutz, Chan) 206
- Lazulite (Geijer, Gabrielson) 1778
- Lee, D. E. and Dodge, F. C. W. Accessory minerals in some granitic rocks in California and Nevada as a function of calcium content. 1660
- with Erd, R. C., White, D. E. and Fahey, J. J. Buddingtonite, an ammonium feldspar with zeolitic water. 831
- Leucite-pseudoleucite problem, an experimental study on the (Seki, Kennedy) 1267
- Leucophosphite, a new occurrence in the Quádrilatero Ferrífero, Minas Gerais, Brazil (Simmons) 377
- Levinson, A. A. (Book review) 1506
- Li, C. with Liu, C., Liu, T., Fuchang, Sun, M. and Lu, W. 1777
- Li, H. with Tu-Chih, K., Hsieh, and Yin, S. 1776, 1777
- Libsch, K. with Simpson, D. R. and Fisher, R. Thermal stability of azurite and malachite. 1111
- Lieber, W. (Book review) 219
- Lindberg, M. L. Crystallography of faheyite, Sapucaia pegmatite mine, Minas Gerais, Brazil 395
- with Weeks, A., Truesdell, A. H. and Meyrowitz, R. Grantsite, a new hydrated

- sodium calcium vanadate from New Mexico, Colorado, and Utah..... 1511
- Lipman, P. W. Mineralogy and paragenesis of amphiboles from Gibson Peak pluton, northern California..... 1321
- Liu, C., Liu, T., Fuchang, Li, C., Sun, M. and Lu, W..... 1777
- Liu, T. with Liu, C., Fuchang, Li, C., Sun, M. and Lu, W..... 1777
- Lobanova, V. V..... 1151
- Logvinenko, N. V. with Frank-Kamenetskii, V. A. and Drits, V. A..... 816
- Lu, W. with Liu, C., Liu, T., Fuchang, Li, C. and Sun, M.... 1777
- Lyon, R. J. P..... 823, 824
- Mack, M. with Parrish, W. (Book review)..... 1780
- Mackinawite (Evans, Milton, Chao, Adler, Mead, Ingram, Berner)..... 1497
- Madlem, K. W. with Welday, E. E., Baird, A. K. and McIntyre, D. B. Silicate sample preparation for light-element analyses by x-ray spectrography..... 889
- Magnesite..... 1502
- Magnesium in silicate minerals, the direct spectrophotometric microdetermination of high-level. A Clayton yellow procedure (Meyrowitz)..... 769
- Malinko, S. V..... 441
- Kuznetsova, N. N., Pensionerova, V. M. and Rybakova, L. I..... 820
- Mandarino, J. A. X-ray powder data for aminoffite..... 212
- X-ray powder data for teinite and chalcomenite... 1481
- Williams, S. J. and Mitchell, R. S..... 444
- Manghnani, M. H. and Hower, J. Glauconites: cation exchange capacities and infrared spectra..... 586
- and Hower, J. Glauconites: cation exchange capacities and infrared spectra. Part II. Infrared absorption characteristics of glauconites 1631
- Margarosane, additional notes on (Glasser, Dent Glasser)... 781
- Marokite (Gaufrey, Jouravsky, Permingeat)..... 817
- Martinez, E. and Comer, J. J. The concentration and study of the interstitial material in chrysotile asbestos..... 153
- Mathematical theory of x-ray powder diffractometry (Wilson) (Book review)..... 1780
- McAdam, R. C. with Nickel, E. H..... 819
- McAtee, J. L., Jr. and Hackman, J. R. Exchange equilibria on montmorillonite involving organic cations..... 1569
- and Hawthorne, J. M. Heating-oscillating x-ray diffraction studies of some organo-montmorillonites..... 247
- McConnell, D..... 1500
- McIntyre, D. B. with Welday, E. E., Baird, A. K. and Madlem, K. W. Silicate sample preparation for light-element analysis by x-ray spectrography..... 889
- McKie, D..... 445
- Mead, C. with Evans, H. T., Jr., Milton, C., Chao, E. C. T., Adler, I., Ingram, B. and Berner, R. A..... 1497
- Medlin, W. L. Normalization of thermoluminescence data... 53
- Meerschaluminitite..... 1501
- Meneghinite, electron probe analyses of copper in (Fredriksson, Andersen)..... 1467
- Mertie, J. B. Jr. A method of classifying analyses with any number of terms..... 1306
- Transformation of trilinear and quadriplanar coordinates to and from cartesian coordinates..... 926
- Mertie's analytic classification

- and quadriplanar charting of analyses with nine or more components (Pieterse, de V. de Kock)..... 808
- Metakaolinite (Liu, Liu, Fuchang, Li, Sun, Lu)..... 1777
- Meta-torbernite, the crystal structure of, studies of the torbernite minerals (II) (Ross, Evans, Appleman)**..... 1603
- Meteorite, Orgueil, electron probe microanalysis of some carbonate, sulfate and phosphate minerals in the (Nagy, Andersen)..... 1730
- Meyrowitz, R. The direct spectrophotometric microdetermination of high-level magnesium in silicate minerals. A Clayton yellow procedure**..... 769
- with Moench, R. H. **Goldmanite, a vanadium garnet from Laguna, New Mexico**..... 644
- with Weeks, A., Lindberg, M. L. and Truesdell, A. H. **Grantsite, a new hydrated sodium calcium vanadate from New Mexico, Colorado, and Utah**..... 1511
- Mica, correlations between infrared spectrum and chemical composition of (Vedder).... 736
- Micas, selective dissolution of, from potassium feldspars by sodium pyrosulfate fusion of soils and sediments (Kiely, Jackson)**..... 1648
- Microprobe technique for the analysis of multiphase microcrystalline powders (White)..... 196
- Milton, C. with Evans, H. T. Jr., Chao, E. C. T., Adler, I., Mead, C., Ingram, B. and Berner, R. A..... 1497
- with Thayer, T. P., Dinnin, J. and Rose, H., Jr. **Zincian chromite from Outokumpu, Finland**..... 1178
- Mineraliensammler (Lieber) (Book review)..... 219
- Mineralogical Society of America, constitution and by-laws 487
- directory of fellows and members..... 490
- forty-fourth annual meeting, proceedings of, at New York, New York (Switzer)..... 469
- Mineralogical Society of America Award, acceptance of the 1963, (Morimoto)..... 461
- presentation of the 1963, to Nobuo Morimoto (Donnay)..... 459
- Mineralogical Society of America meeting, Bozeman, Montana —July 26-31. 1964 Joint meeting with the American Crystallographic Association, program..... 1507
- Mineraly, Spravochnik (Book review)..... 1781
- Minerals in the infrared. A critical bibliography (Lyon) (Book review)..... 824
- Minor components, on the distribution of, during the formation of minerals (Nassau)**... 321
- Mitchell, R. S. Pseudomorphs of anatase after sphene from Roanoke County, Virginia... 1136
- with Mandarinino, J. A. and Williams, S. J..... 444
- Mityushina, T. M. with Shabynin, L. I..... 1501
- Modal analysis, combined rock and thin section (Nesbitt).... 1131
- Modal variations within granitic outcrops (Emerson)**..... 1224
- Moench, R. H. and Meyrowitz, R. Goldmanite, a vanadium garnet from Laguna, New Mexico**..... 644
- Moiola, R. J. Authigenic mordenite in the Esmeralda "Formation," Nevada..... 1472
- Mokrovsov, V. A. with Klassen, V. I..... 450
- Moleva, V. A. with Khomyakov, A. P., Stepanov, V. I. and Pudovkina, Z. V..... 1774
- Molybdate (Čech, Povondra).... 1497
- Monohydrocalcite (Semenov).... 1151
- Monroe, E. A. Electron optical ob-**

- servations of fine-grained silica minerals 339
- Montmorillonite, Ca-, complexes of, with primary monohydric alcohols (Clay-organic studies-VIII) (Brindley, Ray) 106
- Montmorillonite, exchange equilibria on, involving organic cations (McAtee, Hackman) 1569
- Montmorillonites, organo-, heating-oscillating x-ray diffraction studies of some (McAtee, Hawthorne) 247
- Montoya, J. W., Baur, G. S. and Wilson, S. R. 1497
- Moore, C. A. 451
- Moore, P. B. Investigations of landesite 1122
- Notes on some Black Hills phosphates 1119
- Mordenite, authigenic, in the Esmeralda "Formation," Nevada (Moiola) 1472
- Morimoto, N. Acceptance of the Mineralogical Society of America Award for 1963 461
- Moshier, R. W. (Book review) 1504
- Muir, I. D. with Joel, N. Extinction measurements for the determination of 2V with the universal stage 286
- Munkforsite (Geijer, Gabrielson) 1778
- Munkrudite (Geijer, Gabrielson) 1778
- Munoz, J. L. with Hardie, L. A., Donnay, G. and Donnay, J. D. H. Morphological analysis of hodgkinsonite 415
- Munro, M. Reply to "Comment on 'Errors in the measurement of 2V with the universal stage'" 813
- Murav'eva, I. V. with Genkin, A. D. 439
- Muscovite and paragonite, co-existent, in pelitic schists (Zen, Albee) 904
- Muscovite and phlogopite groups, crystalline solubility in the (Crowley, Roy) 348
- Myrmekite (Shellev) 41
- Nagy, B. and Andersen, C. A. Electron probe microanalysis of some carbonate, sulfate, and phosphate minerals in the Orgueil meteorite 1730
- Nakamura plate, use of the, in universal stage orientations (Vogel) 406
- Nassau, K. On the distribution of minor components during the formation of minerals 321
- Naughton, J. J. with Jordan, W. Growth of forsterite crystals in a reactive crucible 806
- Nefedov, E. I. with Knipovich, Yu. N. and Komkov, A. I. 442
- Nepheline hydrate I, a note on the lattice parameters of (Edgar) 1139
- Nesbitt, R. W. Combined rock and thin section modal analysis 1131
- New data on rare element mineralogy (Ginzburg, A. I.) (Book review) 216
- New mineral names 439, 816, 1151, 1497, 1774
- Newberg, D. W. X-ray study of shattuckite 1234
- Newnham, R., Santoro, R., Pearson, J. and Jansen, C. Ordering of Fe and Cr in chrysoberyl 427
- Nickel, E. H. and McAdam, R. C. Nickel, an historical revue (Howard-White) (Book review) 219
- Niskanen, E. Reduction of orientation effects in the quantitative x-ray diffraction analysis of kaolin minerals 705
- Norsk Geologisk Tidsskrift 42 (2), Feldspar volume (Christie) (Book review) 451
- Norway North of 65 (Vorren) (Book review) 451
- Nowacki, W. and Bahezre, C. 446
- Olivine group minerals, infrared investigation of the (Duke, Stephens) 1388
- Omphacite, x-ray crystallography

of (Warner).....	1461	Petrology of the igneous rocks (Hatch, Wells, Wells) (Book review).....	449
Ondřejite (Paděra, Povondra)...	1502	Petruk, W. Determination of the heavy atom content in chlorite by means of the x-ray diffractometer.	61
Oppenheim, M. J. A stereographic net mounted on a phonograph.....	414	Pettijohn, F. J. (Book review)...	1504
Ortho-enstatite, x-ray identification of ordered and disordered (Pollack, Ruble)	983	Pflugger, C. E. with Ruotsala, A. P. and Dow, G. M. Iron-rich serpentine and chamosite from Ely, Minnesota	993
Osmer, J. A. with Chase, A. B. Synthesis of thorianite crystals from bismuth oxide-lead fluoride melts.....	1469	Phase equilibria in the system FeO-Fe₂O₃-TiO₂ at 1300° C. (Taylor)	1016
Osmium-iridium alloys (Hey).....	818	Phase equilibrium relations in the system CaMgSi₂O₆(diopside)-NaAlSi₃O₈(nepheline)-NaAlSi₃O₈(albite)-H₂O at 1,000 kg/cm² water vapor pressure (Edgar)	573
Paděra, K. and Povondra, P.....	1502	Phase relations between cymrite, BaAlSi₃O₈(OH), and celsian, BaAl₂Si₂O₈ (Seki, Kennedy)	1407
—— with Čech, F. and Povondra, P.....	1499	Phase relations in the system PbO-CO₂ and the decomposition of cerussite (Grisafe, White)	1184
Paragonite from Täsch Valley near Zermatt, Switzerland (Zen, Ross, Bearth).....	183	Philips, F. C. (Book review).....	1506
Parrish, W. and Mack, M. (Book review).....	1780	Phillipsite of saline lakes and soils (Hay)	1366
Pask, J. A. with Shannon, R. D. Topotaxy in the anatase-rutile transformation	1707	Phlogopite crystals, growth spirals on (Sunagawa)	1427
Pauly, H.	439	Phosphates, notes on some Black Hills (Moore).....	1119
Pavlović, S. with Orstanović, I. X-ray study of chrysotile... ..	1769	Pierrot, R. with Herpin, P.....	816
Peacor, D. R. (Book review).1505,	1780	Pieterse, J. J. and de V. de Kock Mertie's analytic classification and quadriplanar charting of analyses with nine or more components.....	808
—— and Garske, D. Sarcopside from Deering and East Alstead, New Hampshire.....	1149	Piller, H. and Gehlen, K. v. On errors of reflectivity measurements and of calculations of refractive index n and absorption coefficient k	867
—— with Prewitt, C. T. Crystal chemistry of the pyroxenes and pyroxenoids.....	1527	Plagioclase, optical-crystallographic scatter in (Vogel)	614
Pearson, J. with Newnham, R., Santoro, R. and Jansen, C. Ordering of Fe and Cr in chrysoberyl.....	427	Plagioclase twinning, the genesis of, in the Nonewaug granite	
Pennine, a chrome-nickel, from serpentinite, Jambur chromite mines, Mysore state, India (Varadarajan).....	420		
Pensionerova, V. M. with Malinko, S. V., Kuznetsova, N. N. and Rybakova, L. I....	820		
Permingeat, F. with Gaudfroy, C. and Jouravsky, C.....	817		
Perovskite group (Nickel, Mc-Adam).....	819		

- (Seifert) 297
- Poindexter, E. H. with Denning, R. M. Crystallographic implications of EPR in neutron-irradiated diamond 277
- Polarized light, azimuthally dispersed (Deffeyes) 165
- Pollack, S. S. and Ruble, W. D. X-ray identification of ordered and disordered orthoenstatite 983
- Polushkina, A. P. and Sidorenko, G. A. 818
- Pommer, A. M. 827
- Portnov, A. M. 1153
- Potash feldspar, optically positive, in the Inyo Mountains, California-Nevada, absence of (Emerson) 194
- Potassium feldspar (KAlSi_3O_8), the breakdown of, at high temperatures and high pressures (Seki, Kennedy) 1688
- Povarennykh, A. S. 1152
- Povondra, P. with Čech, F. 1497, 1499
- with Čech, F. and Paděra, K. 1499
- with Čech, F. and Slansky, E. 445
- with Paděra, K. 1502
- Prakash, D. and Dalela, I. K. On the occurrence of asbestos in Chamoli, U.P., India 424
- Pravdite (Tarkhanova, Sidorenko, Kuznetsova) 1501
- Prewitt, C. T. and Peacor, D. R. Crystal chemistry of the pyroxenes and pyroxenoids 1527
- Price, P. B. with Fleischer, R. L. and Symes, E. M. On the origin of anomalous etch pits in minerals 794
- Proarizonite (Bykov) 1774
- Proceedings of the sixth conference on the silicate industry (Beke, Tamás) (Book review) 217
- Pudovkina, Z. V. with Khomyakov, A. P., Stepanov, V. I. and Moleva, V. A. 1774
- Pyrite, electropolishing of (Ehlers, Birle) 800
- Pyromorphite series, infrared spectra of phosphate minerals: Symmetry and substitutional effects in the (Adler) 1002
- Pyroxene analyses, recalculation of (Bown) 190
- Pyroxenes and pyroxenoids, crystal chemistry of the (Prewitt, Peacor) 1527
- “Pyrrhotite Measurement” by Groves and Ford, *Am. Mineral.* 48, 911–913, discussion of (Buseck) 1491
- “Pyrrhotite Measurement,” “discussion of,” reply to (Groves and Ford) 1496
- Quartz glass pressure vessels for hydrothermal studies (Speed, Filice) 1114
- Radiography, stereoscopic, in the study of ore textures (Hamblin, Salotti) 17
- Ray, S. with Brindley, G. W. Complexes of Ca-montmorillonite with primary monohydric alcohols (Clay-organic studies-VIII) 106
- Raychaudhuri, B. Relation of atomic constitution to lattice parameters in some hornblendes from the Black Hills, South Dakota 198
- Rectorite (Brown, Weir) 446
- Redondite (Čech, Povondra, Slansky) 445
- Reflectivity measurements, on errors of, and of calculations of refractive index n and absorption coefficient k (Pilller, Gehlen) 867
- Relation between dual acidity and structure of H-montmorillonite (Pommer) (Book review) 827
- Rieder, M. 1501
- Rock-forming minerals, Vol. 3, sheet silicates (Deer, Howie, Zussman) (Book review) 825

- Roebling Medal, acceptance of (Schairer)..... 456
- , presentation of, to J. Frank Schairer (Yoder)..... 453
- Rose, H. Jr. with Thayer, T. P., Milton, C. and Dinnin, J. Zincian chromite from Outokumpu, Finland..... 1178
- Roseboom, E. H. Jr. (Book review)..... 1780
- Ross, C. S. Volatiles in volcanic glasses and their stability relations..... 258
- Ross, M. and Evans, H. T., Jr. Studies of the torbernite minerals (I): The crystal structure of abernathyite and the structurally related compounds $\text{NH}_4(\text{UO}_2\text{AsO}_4) \cdot 3\text{H}_2\text{O}$ and $\text{K}(\text{H}_3\text{O})(\text{UO}_2\text{AsO}_4)_2 \cdot 6\text{H}_2\text{O}$ 1578
- , Evans, H. T., Jr., and Appleman, D. E. Studies of the torbernite minerals (II): The crystal structure of meta-torbernite..... 1603
- with Zen, E-an and Bearth, P. Paragonite from Täsch Valley near Zermatt, Switzerland..... 183
- Roth, R. S. and Waring, J. L. Ixiolite and other polymorphic types of FeNbO_4 242
- Roy, D. M. and Roy, R. Tridymite-cristobalite relations and stable solid solutions... 952
- Roy, R. with Crowley, M. S. Crystalline solubility in the muscovite and phlogopite groups
- with Roy, D. M. Tridymite-cristobalite relations and stable solid solutions... 952
- with Taylor, A. M. Zeolite studies IV: Na-P zeolites and the ion-exchanged derivatives of tetragonal Na-P... 656
- with White, W. B. Infrared spectra-crystal structure correlations: II comparison of simple polymorphic minerals 1670
- Rozenite (Jambor, Traill)..... 820
- Rubinstein, C. B. and Barns, R. L. Crystallographic data for rare earth-aluminum garnets..... 1489
- Ruble, W. D. with Pollack, S. S. X-ray identification of β -ordered and disordered orthenstatite..... 983
- Ruegg, N. R. Use of the angle A_1/c in optical determination of the composition of augite... 599
- Runnells, D. D. Cynwite in a copper deposit, Brooks Range, Alaska..... 158
- Ruotsala, A. P., Pflugger, C. E. and Dow, G. M. Iron-rich serpentinite and chamosite from Ely, Minnesota..... 993
- Rybakova, L. I. with Malinko, S. V., Kuznetsova, N. N. and Pensionerova, V. M..... 820
- Saebo, P. C..... 1154
- Salotti, C. A. with Hamblin, W. K. Stereoscopic radiography in the study of ore textures... 17
- Samsonova, N. S. with Semenov, E. I. and Dusmatov, V. D... 443
- Sangarite (Drits, Kossovskaya)... 444
- Santoro, R. with Newnham, R., Pearson, J. and Jansen, C. Ordering of Fe and Cr in chrysoberyl..... 427
- Sapphirine-bearing rock, Val Codera, Italy (Barker)..... 146
- Sarcopside (Čech, Paděra, Povondra)..... 1499
- Sarcopside from Deering and East Alstead, New Hampshire (Peacor, Garske)..... 1149
- Saryarkite (Krol, Chernov, Shipovalov, Khan)..... 1775
- Schairer, J. F. Acceptance of the Roebling Medal..... 453
- Schneiderite (Hey)..... 1498
- Seifert, K. E. The genesis of plagioclase twinning in the Nonewaug granite..... 297
- Seki, Y. and Kennedy, G. C. An experimental study on the leucite-pseudoleucite problem..... 1267
- and Kennedy, G. C. Phase

- relations between cymrite, $BaAlSi_3O_8(OH)$, and celsian, $BaAl_2Si_2O_8$ 1407
- and Kennedy, G. C. The breakdown of potassium feldspar ($KAlSi_3O_8$) at high temperatures and high pressures 1688
- Semenov, E. I. 1151, 1154
- Dusmatov, V. D. and Samsonova, N. S. 443
- and Tikhonenkov, I. P. 443
- Sen Gupta, J. G. with Hughson, M. R. A thorian intermediate member of the britholite-apatite series 937
- Serpentine and chamosite, iron-rich, from Ely, Minnesota (Ruotsala, Pflugler, Dow) 993
- Shabynin, L. I. and Mityushina, T. M. 1501
- Shannon, R. D. and Pask, J. A. Topotaxy in the anatase-rutile transformation 1707
- Shattuckite, x-ray study of (Newber) 1234
- Shelley, D. On myrmekite 41
- Shipovalov, Yu. V. with Krol, O. F., Chernov, V. I. and Khan, G. A. 1775
- Siderotil (Jambor, Traill) 820
- Sidorenko, G. A. with Polushkina, A. P. 818
- with Tarkhanova, G. A. and Kuznetsova, N. N. 1501
- Silica minerals, fined-grained, electron optical observations of (Monroe) 339
- Simmons, G. C. Leucophosphite, a new occurrence in the Quadrilátero Ferrífero, Minas Gerais, Brazil 377
- Simpson, D. R. The nature of the alkali carbonate apatites 363
- Fisher, R. and Libsch, K. Thermal stability of azurite and malachite 1111
- Sjögruvite (Henriques) 447
- Skaergaard intrusion, East Greenland, note on the revised composition of two olivines from the (Vincent, Douglas, Bown) 805
- Skinner, B. J., Erd, R. C. and Grimaldi, F. S. Greigite, the thio-spinel of iron; a new mineral 543
- Slansky, E. with Čech, F. and Povondra, P. 445
- Soboleva, L. N. with Bezmertnaya, M. A. 818
- Speed, R. and Filice, A. Quartz glass pressure vessels for hydrothermal studies 1114
- Spiroffite (Mandarino, Williams, Mitchell) 444
- Staatz, M. H. with Adams, J. W. and Havens, R. G. 1736
- Stepanov, V. I. with Khomyakov, A. P., Moleva, V. A., and Pudovkina, Z. V. 1774
- Stepanovite (Knipovich, Komkov, Nefedov) 442
- Stephens, J. D. with Duke, D. A. Infrared investigation of the olivine group minerals 1388
- Stephenson, D. A. Iriginite from South Dakota 408
- Stereographic net mounted on a phonograph (Oppenheim) 414
- Straumanis, M. E., Amstutz, G. C. and Chan, S. Lattice parameters and expansion coefficients of FeS_2 (natural and synthetic), and of CoS_2 206
- Structural principles in inorganic compounds (Addison) (Book review) 1503
- "Struverite"-, re-examination of, a further note (Flinter) 792
- Stuetzite, empressite and, redefined (Honea) 325
- Sun, M. with Liu, C., Liu, T., Fuchang, Li, C. and Lu, W. 1777
- Sunagawa, I. A distinction between natural and synthetic emeralds 785
- Growth spirals on phlogopite crystals 1427
- Sursassite from New Brunswick, an x-ray study of (Freed) 168

- Switzer, G. Memorial of Mark Chance Bandy 464
- Proceedings of the forty-fourth annual meeting of the Mineralogical Society of America at New York, New York 469
- Symes, E. M. with Fleischer, R. L. and Price, P. B. On the origin of anomalous etch pits in minerals 794
- Synthesis of $\text{MBa}(\text{CO}_3)_2$ Compounds (Chang) 1142
- Tamás, F. with Beke, B. (Book review) 217
- Tangaite (Čech, Povondra, Slansky) 445
- Tarkhanova, G. A., Sidorenko, G. A. and Kuznetsova, N. N. Tatarskite (Lobanova) 1501
- Taylor, A. M. and Roy, R. Zeolite studies IV: Na-P zeolites and the ion-exchanged derivatives of tetragonal Na-P 656
- Taylor, R. W. Phase equilibria in the system $\text{FeO}-\text{Fe}_2\text{O}_3-\text{TiO}_2$ at 1300°C 1016
- Teineite and chalconenite, x-ray powder data for (Mandarino) 1481
- Thayer, T. P., Milton, C., Dinnin, J. and Rose, H., Jr. Zincian chromite from Outokumpu, Finland 1178
- Thermoluminescence of amblygonite, pectolite, orthoclase, scapolite and wollastonite, some effects of pressure on the (Angino) 387
- Thermoluminescence data, normalization of (Medlin) 53
- Thermonatrite 1154
- Thorianite crystals, synthesis of, from bismuth oxide-lead fluoride melts (Chase, Osmer) 1469
- Thorite→huttonite phase transformation as determined by growth of synthetic thorite and huttonite single crystals (Finch, Harris, Clark) 782
- Tikhonenkov, I. P. with Semenov, E. I. 443
- Tikhonenkovite (Khomyakov, Stepanov, Moleva, Pudovkina) 000
- Tobi, A. C. Comment on "Errors in the measurement of 2V with the universal stage," by M. Munro 812
- Tocher, F. E. Extinction and 2V: a simple stereographic solution of general application 1622
- Topotaxy in the anatase-rutile transformation (Shannon, Pask) 1707
- Tosudite (Frank-Kamenetskii, Logvinenko, Drits) 816
- Trails, R. J. with Jambor, J. L. 820
- Tridymite-cristobalite relations and stable solid solutions (Roy, Roy) 952
- Trilinear and quadriplanar coordinates, transformation of, to and from cartesian coordinates (Mertie) 926
- Troilite and pyrrhotite, range in solid solution and structure of naturally occurring (Carpenter, Desborough) 1350
- Truesdell, A. H. with Weeks, A., Lindberg, M. L. and Meyrowitz, R. Grantsite, a new hydrated sodium calcium vanadate from New Mexico, Colorado, and Utah 1511
- Tu-Chih, K., Li, H., Hsieh, H. and Yin, S. 1776, 1777
- Tunellite, $\text{SrB}_6\text{O}_9(\text{OH})_2 \cdot 3\text{H}_2\text{O}$, the crystal structure of (Clark) 1549
- Uferite (Zhabin, Voronkov, Khaledzova, Kazakova) 447
- "Universal stage, errors in the measurement of 2V with the," by M. Munro, comment on (Tobi) 812
- "Universal stage, errors in the measurement of 2V with the," reply to "Comment on

- (Munro)..... 813
- Universal stage, extinction measurements for the determination of 2V with the (Joel, Muir)..... 286
- Unnamed (β -Be(OH)₂) (Montoya, Baur, Wilson)..... 1497
- dimorph of cobaltite (Polushkina, Sidorenko)..... 818
- silver bismuth telluride (Bezsmertnaya, Sovoleva)..... 818
- sodium carbonate (Semenov)..... 1154
- sodium manganese carbonate (Semenov)..... 1154
- Uralolite (Grigor'ev)..... 1776
- Uran und seine Geschichte (Kirchheimer) (Book review)..... 216
- Vagh, A. S. with Joshi, M. S. Growth spirals on prism faces of cultured quartz..... 1771
- van Olphen, H. (Book review).... 1156
- Varadarajan, S. A chrome-nickel pennine from serpentinite, Jambur chromite mines, Mysore State, India..... 420
- Vedder, W. Correlations between infrared spectrum and chemical composition of mica..... 736
- Vermiculite, magnesium, from the Twin Sisters Mountains, Washington (Gaudette).... 1754
- Vincent, E. A., Douglas, J. A. V. and Bown, M. G. Note on the revised composition of two olivines from the Skaergaard intrusion, East Greenland..... 805
- Viswanathan, K. A modified graphical method of absorption correction for the displacement of lines in a powder photograph..... 1474
- Vitaliano, C. J. (Book review).... 449
- Vogel, T. A. Optical-crystallographic scatter in plagioclase
——— Use of the Nakamura plate in universal stage orientations..... 406
- Volborth, A. Biotite mica effect in x-ray spectrographic analysis of pressed rock powders..... 634
- Volcanic glasses, volatiles in, and their stability relations (Ross)..... 258
- Voronkov, A. A. with Zhabin, A. G., Khalezova, E. B. and Kazakova, M. E..... 447
- Vorren, Ö..... 451
- Waring, J. L. with Roth, R. S. Ixiolite and other polymorphic types of FeNbO₄..... 242
- Warner, J. X-ray crystallography of omphacite..... 1461
- Warthaite (Rieder)..... 1501
- Weeks, A., Lindberg, M. L., Truesdell, A. H. and Meyrowitz, R. Grantsite, a new hydrated sodium vanadate from New Mexico, Colorado, and Utah..... 1511
- Weibyeite (Saebo)..... 1154
- Weilite (Herpin, Pierrot)..... 816
- Weir, A. H. with Brown, G..... 446
- Weiss, L. E. with Best, M. G. Mineralogical relations in some pelitic hornfelses from the southern Sierra Nevada, California..... 1240
- Welday, E. E., Baird, A. K., McIntyre, D. B. and Madlem, K. W. Silicate sample preparation for light-element analyses by x-ray spectrography..... 889
- Wells, A. K. with Hatch, F. H. and Wells, M. K..... 449
- Wenden, H. E. with Hurlbut, C. S., Jr. (Book review).... 1506
- Western mineral occurrences, notes on (Heinrich)..... 430
- White, A. J. R. Clinopyroxenes from eclogites and basic granulites..... 883
- White, D. E. with Erd, R. C., Fahey, J. J. and Lee, D. E. Buddingtonite, an ammonium feldspar with zeolitic water..... 831

White, E. W. Microprobe technique for the analysis of multiphase microcrystalline powders.....	196	oxides.....	689
White, W. B. and Roy, R. Infrared spectra-crystal structure correlations: II comparison of simple polymorphic minerals	1670	—— with Brett, R. Sulfur-rich boronites.....	1084
—— with Grisafe, D. A. Phase relations in the system PbO-CO ₂ and the decomposition of cerussite.....	1184	Yttrobetafite (Kalita, Bykova, Kukharchik).....	440
Wilcox, R. E. Immersion liquids of relatively strong dispersion in the low refractive index range (1.46 to 1.52)	683	Yushko-Zakharova, O. E....	1151
Williams, S. A. A new occurrence of langite.....	1143	Zaitzeva, R. I. with Ankinovich, E. A. and Gekht, I. I.....	441
Williams, S. J. with Mandarino, J. A. and Mitchell, R. S.....	444	Zellerite (Granger).....	439
Wilson, A. J. C. (Book review).....	1780	Zen, E-and Albee, A. L. Coexistent muscovite and paragonite in pelitic schists	904
Wilson, S. R. with Montoya, J. W. and Baur, G. S.....	1497	——, Ross, M. and Bearth, P. Paragonite from Täsch Valley near Zermatt, Switzerland	183
Wise, W. S. and Eugster, H. P. Celadonite: Synthesis, thermal stability and occurrence	1031	Zeolite equilibria, with alkali metal cations (Ames)	127
Woo, C. C. Heavy media column separation: a new technique for petrographic analysis	116	—— with alkaline earth metal cations (Ames).....	1099
Wright, T. L. The alkali feldspars of the Tatoosh pluton in Mount Rainier National Park	715	Zeolites (molecular sieves), a simple identification reaction for (Helfferich).....	1752
X-ray spectrography, silicate sample preparation for light-element analyses by (Welday, Baird, McIntyre, Madlem).....	889	Zeolites, Na-P, and the ion-exchanged derivatives of tetragonal Na-P, zeolite studies IV: (Taylor, Roy)	656
Yin, S. with Tu-Chih, K., Li, H. and Hsieh, H.....	1776, 1777	Zhabin, A. G., Voronkov, A. A., Khalezova, E. B., and Kazakova, M. E.....	447
Yoder, H. S., Jr. Presentation of the Roebing Medal to J. F. Schairer.....	453	Zhemchuzhnikovite (Knipovich, Komkov, Nefedov).....	442
Yund, R. A. and Kullerud, G. Stable mineral assemblages of anhydrous copper and iron		Zincobotryogen (Tu-Chih, Li, Hsieh, Yin).....	1776
		Zincocopiapite (Tu-Chih, Li, Hsien, Yin).....	1777
		Zircon crystals containing OH groups, x-ray investigation of (Krstanović).....	1146
		Zur Entstehung der marinsedimentären Eisenerze (Braun) (Book review).....	822
		Zur Geochemie und Lagerstättenkunde des Urans (Dybek) (Book review).....	216
		Zussman, J. with Deer, W. A. and Howie, R. A.....	825