

## INDEX TO VOLUME 39

Leading articles are in **bold face** type; notes, abstracts, and reviews are in ordinary type. Only minerals for which definite data are given are indexed.

Accessory minerals in igneous rocks, significance of (Moorehouse) . . . . .	337	Alvarolite (Florenco) . . . . .	159
Adams, J. A. S. . . . .	314	Andalusite, hydrothermal synthesis of (Roy) . . . . .	140
Adams, J. W. A simple microspectroscope . . . . .	393	<b>Andorite series, syntaxial intergrowths in (Donnay, Donnay)</b> . . . . .	161
<b>Adams, L. H. and Rowe, F. A. The preparation of specimens for the focusing-type x-ray spectrometer</b> . . . . .	215	Annell, C. S., with Stern, T. W. A second locality of novacekite. . . . .	675
Adelite group (Qurashi, Barnes) . . . . .	416	Antigorite from Kimonui, New Zealand, investigation of the crystal structure of (Zussman) . . . . .	682
Age determination, Pb <sup>210</sup> method of (Eckelmann, Broecker, Kulp) . . . . .	324	<b>Antigorite (ortho-antigorite) from Unst, Shetland Islands, a new variety of (Brindley, von Knorring)</b> . . . . .	794
Ahlfeldite (Goni, Guillemin) . . . . .	850	Antigorite from Venezuela, the structural formula of (Brindley) . . . . .	391
<b>Ahrens, L. H. Acceptance of The Mineralogical Society of America Award</b> . . . . .	302	Apoanalcite (=natrolite) (Oftedahl) . . . . .	406
— . . . . .	314, 841	Arequipite (=bindheimite) (Mason, Vitaliano) . . . . .	405
Airborne radioactivity surveying, progress in (Stead, Moxham, Davis) . . . . .	345	Arfvedsonitic rhyolite intrusions from Cloghaneely, Co. Donegal (Whitten) . . . . .	684
<b>Albite in hydrothermal solutions, solubility of (Frederickson, Cox)</b> . . . . .	738	<b>Argentopyrite, x-ray measurements on (Murdoch, Berry)</b> . . . . .	475
Alkali feldspars, high temperature, optical and x-ray studies of. (MacKenzie) . . . . .	336	Arnimite (=antlerite?) (Kokkoros) . . . . .	851
Allanite pegmatite, San Gabriel Mountains, Los Angeles County, California (Neuerburg) . . . . .	831	Arrojadite is a ferroan dickinsonite (Fisher) . . . . .	676
Allargentum (Ramdohr) . . . . .	691	<b>Asbestos, synthetic, investigations, I: Study of synthetic fluor-tremolite (Comeforo, Kohn)</b> . . . . .	537
Allen, R. D. with Kramer, H. Analyses and indices of refraction of tourmaline from fault gouge near Barstow, San Bernardino County, California . . . . .	1020	Axelrod, J. M. . . . .	337
Allen, V. T. (Book Review) . . . . .	152	Bannister, F. A. . . . .	406
<b>Aluminum arsenate, a new synthetic hydrate of (Katz, Kedesdy)</b> . . . . .	1005	Barbosalite (Lindberg, Pecora) . . . . .	849
<b>Aluminum in the tetrahedra of silicates and aluminates, distribution of (Loewenstein)</b> . . . . .	92	<b>Barnes, W. H. with Qurashi, M. M. The structures of the minerals of the descloizite and adelite groups: I—Descloizite and conicalcite (part 1)</b> . . . . .	416
Alunite and pyrophyllite in Puerto Rico, occurrence of (Smith, Hildebrand) . . . . .	344	Bassetite and uranospathite (Fron-del) . . . . .	683
		Bate, G. L. . . . .	315
		<b>Beck, C. W. and Burns, J. H. Cal-laghanite, a new mineral</b> . . . . .	316, 630

- ..... 690
- Belyankite (=creedite) (Ermilova, Moleva)..... 405
- Benfield, D. A. with Young, R. S. and Strachan, K. G. A. Cobalt in kimberlites..... 143
- Berman, J..... 316
- Berry, L. G. The crystal structure of covellite, CuS and klockmannite, CuSe..... 504
- with Murdoch, J. X-ray measurements on argentopyrite..... 475
- Berthierite, FeSb<sub>2</sub>S<sub>4</sub>, crystal structure of (Buerger, Hahn)..... 319
- Beryllonite, corrected unit cell for (Wehrenberg)..... 397
- Bilgrami, S. A..... 683
- Blake, W. J..... 318
- Block, S..... 326
- Boato, G..... 317
- Bøggildite (Bøggvad, Nielsen)..... 848
- Bøggvad, R..... 848
- Bond type, the problem of (Fyfe)**... 991
- Bonding energies of some silicate minerals (Keller)**..... 783
- Borate minerals, crystal chemical studies of (Christ)..... 321
- Borates, anhydrous, x-ray data on. (Thompson, Gower)..... 522
- Bowie, S. H. U..... 403
- Bradford, E. Four Centuries of European Jewelry (Book Review)..... 158
- Brannerite from California (Pabst)** 109
- Brannerite from Ontario, Canada (Nuffield)..... 520
- Brindley, G. W. The structural formula of an antigorite from Venezuela..... 391
- with Harris, P. G. Mordenite as an alteration product of a pitchstone glass..... 819
- with Robertson, R. H. S. and Mackenzie, R. C. Mineralogy of kaolin clays from Pugu, Tanganyika..... 118
- and von Knorring, O. A new variety of antigorite (ortho-antigorite) from Unst, Shetland Islands..... 794
- Brobst, D. A..... 317
- Broecker, W. S..... 320, 324
- Brophy, V. A..... 346
- Brown, H..... 318
- Buck, D. C..... 318
- Buddington, A. F..... 318
- Buerger, M. J. The stuffed derivatives of the silica structures**.. 600
- , Klein, G. E. and Donnay, G. Determination of the crystal structure of nepheline..... 805
- ..... 319
- Burns, J. H. with Beck, C. W. Callaghanite, a new mineral**... 316, 630
- Buszite (=bastnaesite) (Goni, Guillemin)..... 406
- Buttgenbach, H. Les Minéraux et les Roches, Études Pratiques de Cristallographie, Pétrographie et Minéralogie (Book Review)..... 843
- C<sup>14</sup> concentration in modern carbon (Carr, Harris, Broecker)..... 320
- Cahoon, H. P. Saponite near Milford, Utah**..... 222
- Calcite marbles, spectrographic examination of the occurrence of certain alkali elements in (Lelong, Hodge)**..... 647
- Calcite, thermoluminescence of artificially precipitated (Zeller)..... 351
- Callaghanite, a new mineral (Beck, Burns)**..... 316, 630
- Caribou eruptive complex, an interpretation in time and space (Friedman)..... 329
- Carnotote, x-ray data. (Donnay, Donnay)..... 323
- Carobbi, G..... 848
- Carozzi, A. Petrographie des Roches Sedimentaires (Book Review)..... 1034
- Carr, D. R..... 320
- Carr, J. M..... 684
- Chalmers, R. A..... 682
- "Channels" in thin sections, occurrence of (Stringham, Roedder) 384

- Channels in thin sections—a reply (Frederickson) . . . . . 386
- Charnockite Problem (Pichamuthu (Book Review) . . . . . 847
- Chayes point counter stage, a modification of (Rosenfeld) . . . . . 834
- Chemical analyses of minerals, presentation of (Hey) . . . . . 841
- Cheralite (Bowie, Horne) . . . . . 403
- Chert and related deposits, geochemical study of (Maxwell) . . . . . 336
- Chinoite (Beck, Givens) . . . . . 690
- Chlorastrolite (=pumpellyite) (Coombs) . . . . . 406
- Chlorites (Hey) . . . . . 851
- Chlorites, structural and chemical classification of; Magnesian chlorites. (Nelson, Roy) . . . . . 338
- Chodos, A. A. . . . . 318
- Christ, C. L. . . . . 321
- Churchite (Claringbull, Hey) . . . . . 851
- Cipriani, C. . . . . 848
- Clabaugh, S. E. . . . . 321
- Claringbull, G. F. . . . . 407, 851
- Clark, J. R. . . . . 321
- Clarkeite, the chemical formula of (Gruner) . . . . . 836
- Clavan, W., McNabb, W. M., and Watson, E. H. Some hypersthene from southeastern Pennsylvania and Delaware . . . . . 566**
- Clay Mineralogy (Grim) (Book Review) . . . . . 152
- Clay Minerals (Nendo-Kobutsu) (Suto) (Book review) . . . . . 685
- Cloos, H. Conversation with the Earth (Book Review) . . . . . 400
- Coalescence of hexagonal and cubic polymorphs in tetrahedral structures as illustrated by some wurtzite-sphalerite crystal groups (Mitchell, Corey) . . . . . 773**
- Cobalt in kimberlites (Young, Benfield, Strachan) . . . . . 143
- Coffinite (Weeks, Thompson) . . . . . 1037
- Columbium in ores, determination of by x-ray fluorescence (Stevenson) . . . . . 436**
- Comeforo, J. E. and Kohn, J. A. Synthetic asbestos investigations, I: Study of synthetic fluor-tremolite . . . . . 537**
- Composition and Assaying of Minerals (Stewart-Remington, Francis) (Book Review) . . . . . 687
- Compositional evolution of a major marble unit, Grenville series, northwest Adirondack Mountains, New York (Engel, Engel) . . . . . 325
- Conichalcite, structure of. (Qurashi, Barnes) . . . . . 432
- Contact metamorphism in the Christmas Mountains, Brewster County, Texas (Clabaugh) . . . . . 321
- Conversation with the Earth (Cloos) (Book Review) . . . . . 400
- Coombs, D. S. . . . . 406
- Cordierite, twinning in (Venkatesh) 636**
- Corey, A. S. with Mitchell, R. S. The coalescence of hexagonal and cubic polymorphs in tetrahedral structures as illustrated by some wurtzite-sphalerite crystal groups . . . . . 773**
- Coronguite=(argentian bindheimite) (Mason, Vitaliano) . . . . . 405
- Covellite and klockmannite, crystal structure of. (Berry) . . . . . 504**
- Cox, J. E., Jr. with Frederickson, A. F. Mechanism of "solution" of quartz in pure water at elevated temperatures and pressures . . . . . 886**
- **Solubility of albite in hydrothermal solutions . . . . . 738**
- Craig, H. . . . . 322
- Crestmoreite, riversideite (=mixtures of tobermorite and wilkeite) (Taylor) . . . . . 405
- Cryptomorphite (=ginorite) (Hey, Bannister) . . . . . 406
- Cuttitta, F. with Frondel, C. Studies of uranium minerals (XVI): An Renardite . . . . . 448**
- with Frondel, J. W. Studies of uranium minerals (XVI): An alteration product of ianthinite . . . . . 1018

- Das Gupta, A. K. . . . . 346
- Davis, F. J. . . . . 345
- deBretteville, A., Jr., with Lefker, R. and Dodd, J. S. A single crystal temperature controlled oven for an x-ray spectrometer** . . . . . 976
- Demonstration polariscope (Hurlbut) . . . . . 333
- Dennen, W. H. . . . . 322
- Denning, R. M. (Book Reviews) . 155, 845
- den Tex, E. Intertracial angles as indicators of optical and dimensional orientation of some monoclinic crystals in random sections** . . . . . 63
- Derived differential thermal curves (Frederickson) . . . . . 1023
- Descloizite, new occurrence in Cumberland. (Kingsley, Hartley) . . . . . 842
- Descloizite and adelite groups, the structures of the minerals of: I—Descloizite and conichalcite (part 1) (Qurashi, Barnes)** . . . . . 416
- Determination of  $\beta$  and  $2V$ , indirect (Swift) . . . . . 838
- DeVore, G. W. . . . . 323
- Dewindite. (Hogarth, Nuffield)** . 332, 444
- Diamond Technology—Production Methods for Diamond and Gem Stones (Grodzinski) (Book Review) . . . . . 157
- Diffusion, effect of, on the natural isotopic abundance ratios, (Senftle) . . . . . 342
- Diocahedral micas and hydrous micas, classification and correlation of (Foster) . . . . . 328
- Discredited minerals . . . . . 405, 851
- Distribution of iron, manganese, nickel and cobalt between coexisting pyrite and biotite in wallrock alteration (Nickel)** . . 494
- Distribution of major and minor elements among some coexisting ferro-magnesian silicates (Nickel)** . . . . . 486
- Dodd, J. S. with Lefker, R. and deBretteville, A., Jr. A single crystal temperature controlled oven for an x-ray spectrometer** 976
- Dolomite, equilibrium thermal decomposition of (Goldsmith, Graf) . . . . . 330
- Donnay, G. with Buerger, M. J. and Klein, G. E. Determination of the crystal structure of nepheline** . . . . . 805
- with Donnay, J. D. H. **Syn-taxic intergrowths in the andorite series** . . . . . 161
- . . . . . 323
- Donnay, J. D. H. with Ujjiye, N. (Book Review) . . . . . 685
- (Book Review) . . . . . 843
- Douglass, R. M., Murphy, M. J. and Pabst, A. Geocronite** . . . . 908
- Drake, C. L. . . . . 349
- Duffin, W. J. . . . . 382
- Dunites and olivine-rich inclusions in basaltic rocks, origin of (Ross, Foster, Myers)** . . . . . 693
- Eckelmann, F. D. . . . . 324
- Eckelmann, W. R. . . . . 315, 324
- Edelsteine und Perlen (Schlossmacher) (Book Review) . . . . . 846
- Efremov, N. Geikielite from Mount Jemorakly-Tube, North Caucasus, U.S.S.R. . . . . 395
- . . . . . 324
- Einführung in die Kristallographie (Schneiderhöhn) (Book Review) . . . . . 686
- Eitel, W. The Physical Chemistry of the Silicates (Book Review) 1032
- Ekmanite, multiplicity and disorder in the lattice of (Nagy)** . . . 338, 946
- Electromagnetic surveying of drill holes for the detection of conducting sulfides (Harvey, Ward) . . . . . 331
- Emmons, H. C. Selected Petrogenic Relationships of Plagioclase (Book Review) . . . . . 153
- Enchanted Rock pluton, Llano and Gillespie Counties, Texas, petrology of. (Hutchinson) . . 333
- Engel, A. E. S. . . . . 325

- Engel, C. G. . . . . 325
- Equilibria relations during thermal metamorphism of carbonate rocks (Weeks) . . . . . 349
- Ermilova, L. P. . . . . 405
- Ernst, W. G. The St. Peter sandstone-Glenwood shale "contact" . . . . . 1025
- Erzlagerstätten (Schneiderhöhn) (Book Review) . . . . . 1035
- Eskebornite (Ramdohr) . . . . . 691
- Eugster, H. P. . . . . 326, 350
- Evans, H. T., Jr. . . . . 326
- Ewing, M. . . . . 349
- Fahey, J. J. . . . . 318, 327
- Falkenhaynite (=tetrahedrite) (Kutina) . . . . . 852
- Farallonite (Kohanowski) . . . . . 160
- Faul, H. . . . . 327
- Faust, G. T. (Book Reviews) . . . . . 686, 687, 688
- Feely, H. W. . . . . 327
- FeO-SiO<sub>2</sub>-H<sub>2</sub>O, system (Flaschen, Osborn) . . . . . 328
- Fergusonite, La and Sc distribution in (Wylie) . . . . . 667
- Fischer, W. Praktische Edelsteinkunde (Book Review) . . . . . 156
- Fisher, D. J. Arrojadite is a ferroan dickinsonite . . . . . 676
- Flajolotite (=tripuhyite) (Mason, Vitaliano) . . . . . 405
- Flaschen, S. S. . . . . 328
- Fletcher's indicatrix and the electro-magnetic theory of light (Phemister)** . . . . . 172
- Florencio, W. . . . . 159
- Fluorites from Transvaal, S. Africa, spectrographic and x-ray data. (Steyn) . . . . . 383
- Fortescue, J. A. C. Germanium and other trace elements in some western Canadian coals** . . . . . 510
- Foshag, W. F. Acceptance of the Roebling Medal of The Mineralogical Society of America.** . . . . 296
- (Book Review) . . . . . 156
- . . . . . 346
- Foster, M. D. with Ross, C. S. and Myers, A. T. Origin of dunites and olivine-rich inclusions in basaltic rocks** . . . . . 693
- . . . . . 329
- Foster, W. R.** . . . . . 328
- Four Centuries of European Jewellery (Bradford) (Book Review) . . . . . 158
- Fowler, W. C.** . . . . . 322
- Francis, W. with Stewart-Remington, J. The Composition and Assaying of Minerals (Book Review)** . . . . . 687
- Frederickson, A. F. Channels in thin sections—a reply** . . . . . 386
- Derived differential thermal curves . . . . . 1023
- and **Cox, J. E., Jr., Mechanism of "solution" of quartz in pure water at elevated temperatures and pressures** . . . . . 886
- **Solubility of albite in hydrothermal solutions** . . . . . 738
- Friedman, G. M.** . . . . . 329
- Frondel, C. and Cuttitta, F. Studies of uranium minerals (XIV): Renardite** . . . . . 448
- . . . . . 683
- Frondel, J. W. and Cuttitta, F. Studies of uranium minerals (XVI): An alteration product of ianthinite** . . . . . 1018
- Frueh, A. J., Jr.** . . . . . 330
- Fyfe, W. S. The problem of bond type** . . . . . 991
- Gabrielson, O.** . . . . . 159
- Gabrysh, A. F., Preece, E. F., Yager, M. A. and McCutchen, M. The variance of x-ray quartz-powder diffraction patterns** . . . . . 145
- Game, P. M.** . . . . . 842
- Garrels, R. M.** . . . . . 330
- Gast, P. W.** . . . . . 327
- Gay, P.** . . . . . 682
- Geikielite from Mount Jemorakly-Tube, North Caucasus, U.S.S.R. (Efremov)** . . . . . 395
- Geocronite (Douglass, Murphy, Pabst)** . . . . . 908
- Geologic age measurements, rela-**

- tive, on granites by pleochroic haloes and radio-activity of the minerals in their nuclei (Hayase) . . . . . 761
- Geophysical prospecting in New Brunswick, applications and limitations of (Ward, Seigel) . . . . . 348
- Germanium and other trace elements in some western Canadian coals (Fortescue) . . . . . 510
- Gilkey, A. K. with Poldervaart, A. On clouded plagioclase . . . . . 75
- Givens, D. B. . . . . 690
- Glass, H. D. High-temperature phases from kaolinite and halloysite . . . . . 193
- Goldsmith, J. R. . . . . 330
- Goni, J. . . . . 406, 850
- Goodyear, J. . . . . 382
- Görgeyite (Mayrhofer) . . . . . 403
- Gott, G. B. . . . . 327
- Gower, J. A. with Thompson, R. M. A magnesium borate from Isère, France and Swift River, Yukon Territory, with x-ray powder data for some anhydrous borates . . . . . 522
- Graf, D. L. . . . . 330
- Granulites, amphibolites, mylonites, and associated rocks of the Cucamonga Canyon area, southeastern San Gabriel Mountains, California (Hsu) . . . . . 332
- Gravity observations at sea, part I: The Bahamas Island region (Worzel, Ewing, Drake) . . . . . 349
- Green, J. . . . . 331
- Grim, R. E. Clay Mineralogy (Book Review) . . . . . 152
- Grodzinski, P. Diamond Technology—Production Methods for Diamond and Gem Stones (Book Review) . . . . . 157
- Grundlagen der Theorie des Mikroskops (Michel) (Book Review) . . . . . 1035
- Gruner, J. W. The chemical formula of clarkite . . . . . 836
- Guillemin, C. . . . . 406, 850
- Hackmanite and its tenebrescent properties (Medved)** . . . . . 615
- Hahn, T. . . . . 319
- Hallimond, A. F. Manual of the Polarizing Microscope (Book Review) . . . . . 845
- . . . . . 841
- Harris, P. G. and Brindley, G. W. **Mordenite as an alteration product of a pitchstone glass** . . . . . 819
- Harris, S. O. . . . . 320
- Hartley, J. . . . . 842
- Hartman, P. A discussion on "Oriented olivine inclusions in diamond" . . . . . 674
- Harvey, H. A. . . . . 331
- Hayase, I. **Relative geologic age measurements on granites by pleochroic haloes and radio-activity of the minerals in their nuclei** . . . . . 761
- Heinrich, E. W. with Levinson, A. A. **Studies in the mica group; single crystal data on phlogopites, biotites and mangano-phyllites** . . . . . 937
- (Book Review) . . . . . 847
- Henry, N. F. M. . . . . 402
- Hewitt, P. C. An inexpensive microscope illuminator . . . . . 664
- Hey, M. H. . . . . 382, 406, 407, 841, 851
- Heystek, H. . . . . 684
- Hietanen, A. . . . . 331
- Hildebrand, F. A. . . . . 344
- Historical Development of Inclusion Thermometry (Smith) (Book Review) . . . . . 401
- Hodge, E. S. with Lelong, M. P. **Spectrographic examination of the occurrence of certain alkali elements in calcite marbles** . . . . . 647
- Hogarth, D. D. and Nuffield, E. W. **Studies of radioactive compounds: VII—Phosphuranlyte and dewindtite** . . . . . 332, 444
- Holland, H. D. . . . . 332
- Hornblendes from southeastern Pennsylvania and Delaware (Rosenzweig, Watson) . . . . . 581
- Horne, J. E. T. . . . . 403

- Hsu, K. J. . . . . 332
- Huang, W. T. and Merritt, C. A. Petrography of the troctolite of the Wichita Mountains, Oklahoma . . . . . 549
- Hurlbut, C. S., Jr. Smithsonite from Broken Hill, Rhodesia . . . . . 47
- Studies of uranium minerals (XV): Schroeckingerite from Argentina and Utah . . . . . 901
- . . . . . 333
- Hutchinson, R. M. . . . . 333
- Hutton, C. O. Wisaksonite is metamict uranoan thorite . . . . . 825
- Hydromagnesite, unit cell of (Murdoch) . . . . . 24
- Hydrothermal synthesis of single crystals of silicates and other rock-forming minerals, a note on the (Kennedy) . . . . . 654
- Hypersthene from southeastern Pennsylvania and Delaware (Clavan, McNabb, Watson) . . . . . 566
- Ianthinite, an alteration product of (Fron del, Cuttitta) . . . . . 1018
- Identification and Qualitative Chemical Analysis of Minerals (Smith) (Book Review) . . . . . 688
- Illite in the Enfield shale from southern New York (Martin) . . . . . 149
- Illite pseudomorphous after biotite. (Green, Kerr) . . . . . 331
- Ingerson, E. (Book Reviews) . . . . . 400, 401, 685, 843, 1032
- Inghram, M. . . . . 339
- Interplanar spacings, graphical method for determining (Terpstra) . . . . . 149
- Interstitial material in igneous rocks, geochemical aspects of (Brown, Blake, Chodos, Kowalkowski, Mckinney, Neuberger, Silver, Uchiyama) . . . . . 318
- Interracial angles as indicators of optical and dimensional orientation of some monoclinic crystals in random sections (den Tex) . . . . . 63
- Iron and titanium oxide minerals of Adirondack rocks (Buddington, Fahey, Vlisidis) . . . . . 318
- Iron-rich facies of Beaver Bay diabase, Minnesota. (Muir) . . . . . 383
- Iron-titanium oxide minerals, Skaergaard Intrusion, Greenland. (Vincent, Phillips) . . . . . 382
- Isotope dilution in determination of geologic age of minerals, use of (Tomlinson, Das Gupta) . . . . . 346
- Isotopic abundance ratios, natural, effect of diffusion on. (Senfle) . . . . . 342
- Isotopic abundances in rocks and meteorites (Boato) . . . . . 317
- Isotopic composition of common lead, further data on (Bate, Eckelmann) . . . . . 315
- Isotopic composition of lead in lead minerals from the Colorado plateau. (Steff, Stern) . . . . . 345
- Isotopic geochemistry of hot springs (Craig) . . . . . 322
- Jahns, R. H. . . . . 334
- James, M. L. . . . . 334
- Jurapaite (= xonotlite) (Taylor) . . . . . 851
- Jurapaite and xonotlite, the identity of (Taylor) . . . . . 682
- Kahlerite (Meixner) . . . . . 1038
- Kaolin clays from Pugu, Tanganyika, mineralogy of (Robertson, Brindley, Mackenzie) . . . . . 118
- Kaolinite and halloysite, high-temperature phases from (Glass) . . . . . 193
- Kaolinites, structural variations of, in relation to dehydrated halloysite (Murray) . . . . . 97
- Katz, G. and Kedesdy, H. A new synthetic hydrate of aluminum arsenate . . . . . 1005
- Kedesdy, H. Calculation of position and indices of Laue spots on Laue photographs . . . . . 750
- with Katz, G. A new synthetic hydrate of aluminum arsenate . . . . . 1005
- Keene, A. G. . . . . 341
- Keith, M. L. and Roy, R. Struc-

- tural relations among double oxides of trivalent elements . . . 1  
 ————— 347
- Keller, W. D. The bonding energies of some silicate minerals . . . 783
- Kennedy, G. C. A note on the hydrothermal synthesis of single crystals of silicates and other rock-forming minerals . . . . . 654
- Kerr, J. H. with Pecora, W. T. Whewellite from a septarian limestone concretion in marine shale near Havre, Montana . . 208
- Kerr, P. F. . . . . 331
- Kingsbury, A. W. G. . . . . 842
- Klein, A. Albert, memorial of (Thibault) . . . . . 272
- Klein, G. E. with Buerger, M. J. and Donnay, G. Determination of the crystal structure of nepheline . . . . . 805
- Klockmannite, CuSe, crystal structure of. (Berry) . . . . . 504
- Kohanowski, N. N. . . . . 160
- Kohn, J. A. with Comeforo, J. E. Synthetic asbestos investigations I: A study of synthetic fluor-tremolite . . . . . 537
- Kokkoros, P. . . . . 851
- Kowalkowski, R. . . . . 318
- Kramer, H. with Allen, R. D. Analyses and indices of refraction of tourmaline from fault gouge near Barstow, San Bernardino County, California . . . . . 1020
- Kranck, E. H. . . . . 335
- Kraus, E. H. Presentation of the Roebling Medal to William Frederick Foshag . . . . . 293  
 ——— (Book Reviews) . . . . .  
 . . . . . 157, 158, 688, 846
- Kulp, J. L. . . . . 317, 324, 327
- Kuno, H. Study of orthopyroxenes from volcanic rocks . . . . . 30
- Kutina, J. . . . . 852
- KVO<sub>3</sub>, crystal structure of. (Evans, Block) . . . . . 326
- Kyanite, andalusite, and sillimanite in the schists in Boehl's Butte quadrangle (Hietanen). 331
- Lanthanon and scandium distribution in Western Australian Fergusonite (Wylie) . . . . . 667
- Larsen, E. S., Jr. Presentation of The Mineralogical Society of America Award to Louis H. Ahrens . . . . . 300
- Latiumite (Tilley, Henry) . . . . . 402
- Laue spots on Laue photographs, calculation of position and indices of (Kedesy) . . . . . 750
- Laueite (Strunz) . . . . . 1038
- Lawton, K. D. . . . . 336
- Layer silicate structures, synthesis, stability and properties of (Roy, Roy) . . . . . 340
- Lead selenate (= kerstenite?) (Goni, Guillemin) . . . . . 850
- Lee, Olan Ivan, memorial of (Yagoda) . . . . . 277
- Lefker, R., deBretteville, A., Jr., and Dodd, J. S. A single crystal temperature controlled oven for an x-ray spectrometer 976
- Lelong, M. P. and Hodge, E. S. Spectrographic examination of the occurrence of certain alkali elements in calcite marbles . . 647
- Les Minéraux et les Roches, Études Pratiques de Cristallographie, Pétrographie et Minéralogie (Buttgensbach) (Book Review) 843
- Leucosphenite, in oil shale from Utah, new occurrence of (Milton, Axelrod, Sherwood) . . . . 337
- Levinson, A. A. and Heinrich, E. W. Studies in the mica group; single crystal data on phlogopites, biotites, and mangano-phyllites . . . . . 937
- Lindberg, M. L. . . . . 849
- Lindgrenite at Brandy Gill, Carrock Fell, Cumberland, occurrence of the rare copper molybdate (Kingsbury, Hartley). 842
- Literature of Geology (Mason) (Book Review) . . . . . 685
- Livingstonite, HgSb<sub>4</sub>S<sub>7</sub>, crystal structure of (Buerger, Niizeki) 319
- Loewenstein, W. The distribution



- of aluminum in the tetrahedra of silicates and aluminates... 92
- Lognormal distribution of the elements (Ahrens)..... 314
- Machatschki, F. Spezielle Mineralogie auf Geochemischer Grundlage (Book Review).... 843
- Mackay, A. L..... 841
- Mackenzie, R. C. with Robertson, R. H. S. and Brindley, G. W. Mineralogy of kaolin clays from Pugu, Tanganyika**..... 118
- Mackenzie, W. S..... 336, 683
- Mafic intrusions as a clue to the metamorphic history of the Spruce Pine district, North Carolina. (Brobst, Poldervaart, Kulp)..... 317
- Magmatic origin of a Tertiary granite from the Island of Skye, Scotland (Tuttle, Keith) 347
- Magnaluminumoxide (= spinel) (Serdiuchenko, Moleva)..... 405
- Magnesian chlorites. (Nelson, Roy)** 338
- Magnesium borate from Isère, France and Swift River, Yukon Territory, with x-ray powder data for some anhydrous borates (Thompson, Gower)..... 522
- Magnesium pyroborate (Takeuchi) 692
- Magnesium-vermiculite, crystal structure of (Mathieson, Walker)**..... 231
- Manganese amphiboles from Sita-saongi Mine, Bhandara District, India (Bilgrami)..... 683
- Manganese-hoernesite (Gabrielson) 159
- Manger, G. E..... 327
- Manual for Geometrical Crystallography (Wolfe) (Book Review)..... 155
- Manual of the Polarizing Microscope (Hallimond) (Book Review)..... 845
- Martin, R. T. Illite in the Enfield shale from southern New York 149
- Mason, B..... 405, 407, 408
- The Literature of Geology (Book Review)..... 685
- Mathieson, A. McL. and Walker, G. F. Crystal structure of magnesium-vermiculite**..... 231
- Matteuccite (Carobbi, Cipriani).. 848
- Maxwell, J. A..... 336
- Mayrhofer, H..... 403
- Mazzi, F..... 406
- McConnell, D. Crystal chemistry of schallerite**..... 929
- Ortho-antigorite and the tetrahedral configuration of hydroxyl ions..... 830
- McConnell, J. D. C..... 1038
- McCutchen, M. with Gabrysh, A. F., Preece, E. F. and Yager, M. A. The variance of x-ray quartz-power diffraction patterns..... 145
- McKinney, C. R..... 318
- McNabb, W. M. with Clavan, W. and Watson, E. H. Some hypersthene from southeastern Pennsylvania and Delaware**.. 566
- McQuaig, J. A..... 335
- Mechanism of "solution" of quartz in pure water at elevated temperatures and pressures (Frederickson, Cox)**..... 886
- Medved, D. B. Hackmanite and its tenebrescent properties**..... 615
- Meixner, H..... 849, 1038
- "Melilite, reexamination of the crystal structure of," correction to (Smith)..... 139
- Merritt, C. A. with Huang, W. T. Petrography of the troctolite of the Wichita Mountains, Oklahoma**..... 549
- Metamict minerals, nature of crystallization (Berman)..... 316
- Metamict zircon, recrystallization of (Holland, Verral, Pierce).. 332
- Metatyuyamunite (Weeks, Thompson)..... 1037
- Mica group, studies in; single crystal data on phlogopites, biotites, and manganophyllites (Levinson, Heinrich)**..... 937

- Mica polymorphs, theoretical and x-ray study of the (Smith, Yoder) . . . . . 343
- Michel, K. Die Grundlagen der Theorie des Mikroskops (Book Review) . . . . . 1035
- Microscope illuminator, an inexpensive (Hewitt) . . . . . 664
- Microspectroscope, simple (Adams) . . . . . 393
- Milton, C. . . . . 337
- Mineral occurrences in Western Canada (Thompson) . . . . . 525
- Mineralogical Society of America**
- Award, acceptance of (Ahrens) . . . . . 302
- Mineralogical Society of America**
- Award, presentation of to L. H. Ahrens (Larsen) . . . . . 300
- Mineralogical Society of America. List of correspondents, fellows, and members . . . . . 352
- Proceedings of the thirty-fourth annual meeting . . . . . 304
- Mineralogical Society (London) . . . . . 382, 682, 841
- Mitchell, R. S. and Corey, A. S.**
- The coalescence of hexagonal and cubic polymorphs in tetrahedral structures as illustrated by some wurtzite-sphalerite crystal groups . . . . . 773
- Mixed-layer clay-mineral, regular, occurrence of. (Heystek) . . . . . 684
- Miyashiro, A. . . . . 690
- Moleva, V. A. . . . . 405
- Molybdomenite (Goni, Guillemin) . . . . . 850
- Montmorillonite in relation to the physical properties of bentonites, structure of (Roth) . . . . . 340
- Montroseite, alteration processes in (Evans, Mrose) . . . . . 326
- Moorehouse, W. W. . . . . 337
- Mordenite as an alteration product of a pitchstone glass (Harris, Brindley)** . . . . . 819
- Mottramite, new occurrence of. (Kingsbury, Hartley) . . . . . 842
- Moxham, R. M. . . . . 345
- Mrose, M. E. . . . . 326
- Muir, I. D. . . . . 383, 683
- Murata, K. J. (Book Review) . . . . . 399
- Murdoch, J. Unit cell of hydromagnesite** . . . . . 24
- and Berry, L. G. X-ray measurements on argentopyrite . . . . . 475
- Murdochite, a new copper lead oxide (Fahey) . . . . . 327
- Murdochite, crystal structure of (Christ, Clark) . . . . . 321
- Murphy, M. J. with Douglass, R. M. and Pabst, A. Geocronite** . . . . . 908
- Murray, H. H. Structural variations of some kaolinites in relation to dehydrated halloysite** . . . . . 97
- Muscovites, syntheses and stability of the (Yoder, Eugster) . . . . . 350
- Myers, A. T. with Ross, C. S. and Foster, M. D. Origin of dunites and olivine-rich inclusions in basaltic rocks** . . . . . 693
- Mytton, J. W. . . . . 327
- Nagy, B. Multiplicity and disorder in the lattice of ekmanite** . . . . . 338, 946
- Native tin associated with pitchblende at Nesbitt LaBine uranium mines (Silman) . . . . . 529
- Naumannite from Republic, Washington (Thompson) . . . . . 525
- Navajoite (Weeks, Thompson, Sherwood) . . . . . 848
- Nelson, B. W. . . . . 338
- Nendo-Kobutsu (Clay Minerals) (Sudo) (Book Review) . . . . . 685
- Nepheline, determination of the crystal structure of (Buerger, Klein, Donnay)** . . . . . 805
- Nephelines, natural, determination of the composition of, by an x-ray method (Smith, Sahama) . . . . . 842
- Neuerburg, G. J. Allanite pegmatite, San Gabriel Mountains, Los Angeles County, California . . . . . 381
- (Book Reviews) . . . . . 318
- . . . . . 153, 1034, 1035, 1036
- New data; redefinition of species . . . . . 407, 691, 850, 1038

- New mineral names ..... 328, 341  
 ..... 159, 402, 690, 848, 1037
- Nickel, E. H.** The distribution of iron, manganese, nickel and cobalt between co-existing pyrite and biotite in wallrock alteration ..... 494
- The distribution of major and minor elements among some co-existing ferro-magnesian silicates ..... 486
- Nielsen, A. H. .... 848
- Niggli, Paul, memorial of (Parker)** 280
- Niggliite (Ramdohr) ..... 691
- Niizeki, N. .... 319
- Novacekite, a second locality of (Stern, Annell) ..... 675
- Nuffield, E. W.** Sulpho-salts, studies of: XVIII—Pavonite, a new mineral ..... 338, 409
- with Hogarth, D. D. Studies of radioactive compounds: VII—Phosphuranylite and dewindtite ..... 332, 444
- Brannerite from Ontario, Canada ..... 520
- Occurrence of a regular mixed-layer clay-mineral (Heystek) ..... 684
- Oftedahl, C. .... 406
- Optical and x-ray studies of natural high-temperature alkali feldspars (Mackenzie) ..... 336
- Ordoñezite, zinc antimonate, a new mineral from Guanajuato, Mexico (Switzer, Foshag) ..... 346
- “Oriented olivine inclusions in diamond,” a discussion on (Hartman) ..... 674
- Ortho-antigorite (Brindley, von Knorring)** ..... 794
- Ortho-antigorite and the tetrahedral configuration of hydroxyl ions (McConnell) ..... 830
- Orthoclase-microcline inversion. (Mackenzie) ..... 683
- Orthopyroxenes from volcanic rocks, study of (Kuno)** ..... 30
- Osborn, E. F. with Roy, R.** The system  $Al_2O_3-SiO_2-H_2O$  ..... 853
- ..... 328, 341
- Osumilite (Miyashiro) ..... 690
- Pabst, A.** Brannerite from California ..... 109
- with Douglass, R. M. and Murphy, M. J. Geocronite ... 908
- Palygorskite in the Shetland Isles, an occurrence of (Stephen) ... 842
- Palygorskites and pilolites, chemical constitution of (Efremov) ... 324
- Parker, R. L. Memorial of Paul Niggli** ..... 280
- Partzite (Mason, Vitaliano) ..... 407
- Patterson, C. .... 339
- Pauly, H. Weberite from Pikes Peak, Colorado ..... 669
- Pavonite, a new mineral—studies of mineral sulpho-salts: XVIII (Nuffield)** ..... 338, 409
- Pb<sup>210</sup> method of age determination. Eckelmann, Broecker, Kulp) ... 324
- Peach, P. A. .... 339
- Pecora, W. T. and Kerr, J. H.** Whewellite from a septarian limestone concretion in marine shale near Havre, Montana .. 208
- ..... 849
- Pegmatites in the Grenville, metamorphism related to (Peach) ... 339
- Petrographie des Roches Sedimentaires (Carozzi) (Book Review) 1034
- Petrology of Enchanted Rock pluton, Llano and Gillespie Counties, Texas (Hutchinson) ... 333
- Phacolith of charnockitic adamellite porphyry at Keimoes, Cape Province, South Africa (von Backström, Poldervaart) 315
- Phemister, T. C. Fletcher's indicatrix and the electromagnetic theory of light** ..... 172
- Philipsborn, H. v. Tafeln zum Bestimmen der Minerale nach äusseren Kennzeichen (Book Review) ..... 688
- Phillips, R. .... 382
- Phillips, R. B. .... 682
- Phlogopites, syntheses and stability of (Eugster, Yoder) ..... 326

- Phosphuranylite and dewindtite, studies of radioactive compounds: VII (Hogarth, Nuffield)**.....332, 444
- Physical Chemistry of the Silicates (Eitel) (Book Review)..... 000
- Pichamuthu, C. S. The Charnockite Problem (Book Review) .. 847
- Pierce, A. P..... 327
- Pierce, R., Jr..... 332
- Pilolites, chemical constitution of (Efremov)..... 324
- Plagioclase, clouded (Poldervaart, Gilkey)**..... 75
- Plagioclase feldspars, identification by *x*-ray powder methods (Goodyear, Duffin)..... 382
- Plagioclase feldspars, intermediate, transitional optics of (Muir) .. 683
- Plagioclase feldspars, simple method for the determination of (Foster)..... 329
- Plagioclase feldspars, the structures of. V. The heat treatment of lime-rich plagioclases (Gay)..... 682
- Plombierite. (McConnell)..... 1038
- Polar axial angles and polar axial ratios from interfacial angles, determination of (Tunell)**.51, 347
- Polariscope, demonstration. (Hurlbut)..... 333
- Poldervaart, A., and Gilkey, A. K. On clouded plagioclase**..... 75  
..... 315, 317
- Pollucite from Lithia, Massachusetts (Shaub, Schenck)..... 661
- Polymorphism in one dimension (Schneer)..... 341
- Potassium argon studies at the University of Toronto—a progress report (Shillibeer)..... 343
- Praktische Edelsteinkunde (Fischer) (Book Review)..... 156
- Precision of classical methods of rock analysis, relation of, to concentration of each constituent (Ahrens)..... 841
- Preece, E. F. with Gabrysh, A. F., Yager, M. A. and McCutchen, M. The variance of *x*-ray quartz-powder diffraction patterns..... 145
- Preliminary report on the system Na<sub>2</sub>O-MgO-SiO<sub>2</sub> (Schairer, Yoder, Keene)..... 341
- Preparation of specimens for the focusing-type *x*-ray spectrometer (Adams, Rowe)**..... 215
- Pržibram, K. Verfärbung und Lumineszenz. Beiträge zur Mineralphysik (Book Review) 399
- Pseudomorphous illite after biotite (Green, Kerr)..... 331
- Quantitative spectrographic analysis of rocks using a method of mutual standardization (Denneen, Fowler)..... 322
- Quartz *x*-ray powder diffraction pattern, variance of. (Gabrysh, Preece, Yager, McCutcheon). 145
- Qurashi, M. M. and Barnes, W. H. The structures of the minerals of the descloizite and adelite groups: I—Descloizite and conichalcite (part 1)**..... 416
- Rabbitite (Thompson, Weeks, Sherwood)..... 1037
- Radioactive compounds: VIII—phosphuranylite and dewindtite, studies of (Hogarth, Nuffield)**.....332, 444
- Radioactivity of the helium-bearing formations of the Texas panhandle region (Faul, Gott, Manger, Mytton, Pierce).... 327
- Ramberg, H. Relative stabilities of some simple silicates as related to the polarization of the oxygen ions**..... 256
- Ramdohr, P..... 691
- Ramsdell, L. S. (Book Review)... 686
- Rare elements within granites and granitic pegmatites, distribution of (Jahns)..... 334
- Reflecting powers with the microphotometer, direct measurement of (Hallimond)..... 841

- Relationship between the precision of classical methods of rock analysis and the concentration of each constituent (Ahrens). 841
- Relative stabilities of some simple silicates as related to the polarization of the oxygen ions (Ramberg)**..... 256
- Renardite, studies of uranium minerals (XIV) (Fronzel, Cuttitta)** 448
- Rheomorphism, experimental studies of (Kranck, McQuaig).... 335
- Ribeirite (Florencio)..... 159
- Riversideite (= mixtures of tobermorite and wilkeite) (Taylor) 405
- Riversideite, tobermorite, plumbierite (McConnell)..... 1038
- Robbins, C. R. .... 343
- Robertson, R. H. S., Brindley, G. W. and Mackenzie, R. C. Mineralogy of kaolin clays from Pugu, Tanganyika**..... 118
- Roebbling Medal of The Mineralogical Society of America, acceptance of (Foshag)**..... 296
- Roebbling Medal, presentation of to William Frederick Foshag (Kraus)**..... 293
- Roedder, E. with Stringham, B. Occurrence of "channels" in thin sections..... 384
- Rosenfeld, M. A. A modification of the Chayes point counter stage 834
- Rosenzweig, A. and Watson, E. H. Some hornblendes from southeastern Pennsylvania and Delaware**..... 581
- Ross, C. S., Foster, M. D. and Myers, A. T. Origin of dunites and olivine-rich inclusions in basaltic rocks**..... 693
- Roth, R. S. .... 340
- Round Lake batholith and its associated intrusives, petrology of (Lawton)..... 336
- Rowe, F. A. with Adams, L. H. The preparation of specimens for the focusing-type x-ray spectrometer**..... 215
- Roy, D. M. and Roy, R. An experimental study of the formation and properties of synthetic serpentines and related layer silicate minerals**..... 340, 957
- Hydrothermal synthesis of andalusite..... 140
- Roy, R. with Keith, M. L. Structural relations among double oxides of trivalent elements**.. 1
- and Osborn, E. F. The system  $Al_2O_3-SiO_2-H_2O$ ..... 853
- ..... 338, 340, 341
- $S^{32}$  and  $S^{34}$  in some natural sources of sulphur, abundance of (Feely, Gast, Kulp)..... 327
- Sahama, T. G. .... 842
- Sand, L. B. .... 341
- Saponite near Milford, Utah (Cahoon)**..... 222
- Satmeiderhöhn, H. Erzlagerstätten (Book Review)..... 1035
- Saunders, D. F. .... 314
- Schairer, J. F. Memorial of Frederick Eugene Wright**..... 284
- ..... 341
- Schallerite, crystal chemistry of (McConnell)**..... 929
- Schenck, B. J. with Shaub, B. M. Pollucite from Lithia, Massachusetts..... 661
- Schlossmacher, K. Edelsteine und Perlen (Book Review)..... 846
- Schneer, C. J. .... 341
- Schneiderhöhn, H. Einführung in die Kristallographie (Book Review)..... 686
- Erzlagerstätten. (Book Review)..... 1035
- Schroekingite from Argentina and Utah (Hurlbut)**..... 901
- Sedimentary origin and stratigraphic equivalence of the so-called Cranberry and Henderson granites in western North Carolina (Eckelmann, Kulp)..... 324
- Seigel, H. O. .... 348
- Selected Petrogenic Relationships of Plagioclase (Emmons, editor) (Book Review)..... 153

- Senftle, F. E. . . . . 342
- Sengierite (Donnay, Donnay) . . . . 323
- Serdiuchenko, D. P. . . . . 405
- Serpentines, synthetic, and related layer silicate minerals, an experimental study of the formation and properties of (Roy, Roy)** . . . . . 340, 957
- Shaub, B. M. and Schenck, B. J. Pollucite from Lithia, Massachusetts. . . . . 661
- Shaw, D. M. . . . . 342
- Sherwood, A. M. . . . . 337, 848, 1037
- Shillibeer, H. A. . . . . 343
- Silica structures, the stuffed derivatives of (Buerger)** . . . . . 600
- Siliceous scheelite (Kohanowski) . . 160
- Silman, J. F. B. Native tin associated with pitchblende at Nesbitt LaBine uranium mines. . . 529
- Silver, L. T. . . . . 318
- Single crystal temperature controlled oven for an x-ray spectrometer (Lefker, deBretteville, Dodd)** . . . . . 976
- Smith, C. H. On the occurrence and origin of xonotlite . . . . . 531
- Smith, F. G. Historical Development of Inclusion Thermometry (Book Review) . . . . . 401
- Smith, J. V. A correction to the "reexamination of the crystal structure of melilite" . . . . . 139
- . . . . . 343, 842
- Smith, O. C. Identification and Qualitative Chemical Analysis of Minerals (Book Review) . . 688
- Smith, R. J. . . . . 344
- Smithsonite from Broken Hill, Rhodesia (Hurlbut)** . . . . . 47
- Sodic plagioclases: (A) lattice parameters of the natural high- and low-temperature series and of synthetic crystals, and (B) revised determinative charts for the natural low-temperature series (Smith, Robbins) . . . . . 343
- Sodium analogue of hewettite, unnamed (Weeks, Thompson) . . 1038
- "Spectrographic method for determining trace amounts of lead in zircon and other minerals," (Waring, Worthing); correction for. . . . . 151
- Spezielle Mineralogie auf Geochemischer Grundlage (Machatschki) (Book Review) . . . . . 843
- Spomenica Miše Kišpatica (F. Tucan, editor) (Book Review) . . 847
- St. Peter sandstone-Glenwood shale contact (Ernst) . . . . . 1025
- Stability relations of some minerals in the system  $\text{Na}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$  (Sand, Roy, Osborn) . . . . 341
- Stead, F. W. . . . . 345
- Stephen, I. . . . . 842
- Stern, T. W. and Ansell, C. S. A second locality of novacekite. — . . . . . 675
- . . . . . 345
- Stetefeldtite (Mason, Vitaliano) . . 408
- Stevenson, J. S. Determination of columbian in ores by x-ray fluorescence** . . . . . 436
- Stewart, F. H. . . . . 682
- Stewart-Remington, J. and Francis, W. The Composition and Assaying of Minerals (Book Review) . . . . . 687
- Steyn, J. G. D. . . . . 383
- Stieff, L. R. . . . . 345
- Stonehouse, H. An association of trace elements and mineralization at Sudbury** . . . . . 452
- Strachan, K. G. A. with Young, R. S. and Benfield, D. A. Cobalt in kimberlites. . . . . 143
- Stringham, B. and Roedder, E. Occurrence of "channels" in thin sections. . . . . 384
- Strock, L. W. . . . . 318, 346
- Structural relations among double oxides of trivalent elements (Keith, Roy)** . . . . . 1
- Structure reports for 1945-1946. Vol. 10. (Book Review) . . . . . 686
- Strunz, H. . . . . 1038
- Sudo, T. Nendo-Kobutsu (Clay Minerals) (Book Review) . . . . 685
- Sulfide mineralogy, use of zone or

- band theory in problems of (Frueh)..... 330
- Sulpho-salts, studies of: XVIII—Pavonite, a new mineral (Nuffield)**..... 338, 409
- Swift, P. McL. The indirect determination of  $\beta$  and  $2V$ ..... 838
- Switzer, G..... 346
- Syntactic intergrowths in the andorite series (Donnay, Donnay)**..... 161
- System  $Al_2O_3-SiO_2-H_2O$  (Roy, Osborn)**..... 853
- System  $FeO-SiO_2-H_2O$  (Flaschen, Osborn)..... 328
- System  $Na_2O-Al_2O_3-SiO_2-H_2O$  (Sand, Roy, Osborn)..... 341
- System  $Na_2O-MgO-SiO_2$  (Schairer, Yoder, Keene)..... 341
- Tafeln zum Bestimmen der Minerale nach äusseren Kennzeichen (Philipsborn) (Book Review)..... 688
- Takeuchi, Y..... 692
- Tavorite (Lindberg, Pecora)..... 849
- Taylor, H. F. W..... 405, 682, 841, 851
- Temperature and the distribution of trace elements (DeVore)..... 323
- Terpstra, P. Graphical method for determining interplanar spacings..... 149
- Tertschite (Meixner)..... 849
- Thermodynamic relations among vanadium oxides, and implications of the Colorado plateau uranium-vanadium deposits (Garrels)..... 330
- Thermoluminescence of artificially precipitated calcite (Zeller)..... 351
- Thibault, N. W. Memorial of A. Albert Klein**..... 272
- Thompson, M. E..... 348, 848, 1037, 1038
- Thompson, R. B., Jr..... 348
- Thompson, R. M. and Gower, J. A. A magnesium borate from Isère, France and Swift River, Yukon Territory, with x-ray powder data for some anhydrous borates..... 522
- Mineral occurrences in Western Canada..... 525
- Naumannite from Republic, Washington..... 525
- Tilley, C. E..... 402
- Tilton, G..... 339
- Tin, native, associated with pitchblende at Nesbitt LaBine uranium mines, Beaverlodge, Saskatchewan. (Silman)..... 529
- Tobermorite (Claringbull, Hey)..... 407
- Tobermorite (McConnell)..... 1038
- Tomlinson, R. H..... 346
- Tourmaline from fault gouge near Barstow, San Bernardino County, California, analyses and indices of refraction of (Kramer, Allen)..... 1020
- Trace-element behavior in regional metamorphism (Shaw)..... 342
- Trace elements and mineralization at Sudbury, association of (Stonehouse)**..... 452
- Triclinic crystals, calculation of polar and direct axial ratios and polar and direct axial angles, from interfacial angles (Tunell)**..... 51
- Trimorphism in zinc sulfide (Buck, Strock)..... 318
- Troctolite of the Wichita Mountains, Oklahoma, petrography of the (Huang, Merritt)**..... 549
- Truscottite (Mackay, Taylor)..... 841
- Tucan, F. (editor). Spomenica Miše Kišpatica (Book Review)..... 847
- Tunell, G. Calculation of polar and direct axial ratios and polar and direct axial angles of triclinic crystals from interfacial angles**..... 51, 347
- Tuttle, O. F..... 347
- Tyuyamunite, carnotite, and senigerite (Donnay, Donnay)..... 323
- Uchiyama, A..... 318
- Ujiye, N. and Donnay, J. D. H. (Book Review)..... 685
- Uranium and the isotopes of lead in the earth's crust and mete-

- orites, abundance of (Patterson, Tilton, Inghram)..... 339
- Uranium content, alpha particle activity, and  $K_2O$ ,  $Na_2O$ ,  $CaO$  analysis of obsidians, pitchstones and tektites (Adams, Saunders, Zeller)..... 314
- Uranium content of the lavas of Lassen Volcanic National Park, California (Adams, Saunders)..... 314
- Uranium minerals, studies of (XV): Schroeckingerite from Argentina and Utah (Hurlbut)**..... 901
- Uranium minerals, studies of (XVI): An alteration product of ianthinite (Fron del, Cuttitta).... 1018
- Uranium minerals, studies of (XIV): Renardite (Fron del, Cuttitta)**..... 448
- Uranium ores on the Colorado plateaus, mineral associations and types of (Weeks, Thompson, Thompson)..... 348
- Uranospathite. (Fron del)..... 683
- Vanadium minerals, new occurrences of (mottramite, desclowitzite and vanadinite) in the Caldbeck area of Cumberland (Kingsbury, Hartley)..... 842
- Vanadium oxides, thermodynamic relations among, and implications of the Colorado plateau uranium-vanadium deposits. (Garrels)..... 330
- Vanadium oxides, two unnamed new (Weeks, Thompson).... 1037
- Variance of x-ray powder patterns of quartz. (Gabrysh, Preece, Yager, McCutchen)..... 145
- Väyrynenite (Volborth)..... 848
- Veatchite from the Permian evaporites of Yorkshire (Stewart, Chalmers, Phillips)..... 682
- Venkatesh, V. Twinning in cordierite**..... 636
- Verfärbung und Lumineszenz. Beiträge zur Mineralphysik (Pržibram) (Book Review)..... 399
- Verral, P..... 332
- Vincent, E. A..... 382
- Vitaliano, C. J..... 405, 407, 408
- Vlisidis, A..... 318
- Volborth, A..... 848
- von Backström, J. W..... 315
- von Knorring, O. with Brindley, G. W. A new variety of antigorite (ortho-antigorite) from Unst, Shetland Islands**..... 794
- Walker, G. F. with Mathieson, A. McL. Crystal structure of magnesium-vermiculite**..... 231
- Walker Mineralogical Club, Abstract of Proceedings, 1953... 533
- Ward, S. H..... 331, 348
- Watson, E. H. with Clavan, W. and McNabb, W. M. Some hypersthene from southeastern Pennsylvania and Delaware**.. 566
- with Rosenzweig, A. Some hornblendes from southeastern Pennsylvania and Delaware.. 581
- Weberite from Pikes Peak, Colorado (Pauly)..... 669
- Weeks, A. D..... 348, 848, 1037, 1038
- Weeks, W. F..... 349
- Wehrenberg, J. P. A corrected unit cell for beryllonite..... 397
- Weinschenkite-churchite (Claringbull, Hey)..... 851
- Whewellite from a septarian limestone concretion in marine shale near Havre, Montana (Pecora, Kerr)**..... 208
- Whitten, E. H. T..... 684
- Wisaksonite is metamict uranoanthorite (Hutton)**..... 825
- Wolfe, C. W. Manual for Geometrical Crystallography (Book Review)..... 155
- Worzel, J. L..... 349
- Wright, Frederick Eugene, memorial of (Schairer)**..... 284
- Wyatt, M. Zircon as provenance indicators**..... 350, 983
- Wylie, A. W. Lanthanum and scandium distribution in Western Australian fergusonite..... 667



- Xonotlite, identity with jurupaite.  
(Taylor)..... 682
- Xonotlite, on the occurrence and  
origin of (Smith)..... 531
- Yager, M. A. with Gabrysh, A. F.,  
Preece, E. F. and McCutchen,  
M. The variance of x-ray  
quartz-powder diffraction pat-  
terns..... 145
- Yagoda, H. Memorial of Olan Ivan  
Lee**..... 277
- Yoder, H. S..... 326, 341, 343, 350
- Young, R. S., Benfield, D. A. and  
Strachan, K. G. A. Cobalt in  
kimberlites..... 143
- Zebedassite (=saponite) (Mazzi) .. 406
- Zeller, E. J..... 314, 351
- Zinc sulfide polytype crystals, syn-  
thetic (Strock, Brophy)..... 346
- Zinc sulfide, trimorphism in. (Buck,  
Strock)..... 318
- Zircons as provenance indicators  
(Wyatt)**..... 350, 983
- Zoisite-amphibolite with corundum  
from Tanganyika (Game).... 842
- Zoned plagioclases in layered gab-  
bros of the Skaergaard intru-  
sion, East Greenland (Carr).. 684
- Zones of regional metamorphism  
in the pre-Cambrian of north-  
ern Michigan (James)..... 334
- Zussman, J..... 682